



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 FEMA publication 386-3, *Developing a Mitigation Plan* (April 2003):

- **Goals** are general guidelines that explain what you want to achieve. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. They are usually long-term, broad, policy-type statements.
- **Mitigation Actions** are specific actions 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 Cedar County Hazard Mitigation Plan* were reviewed to determine if they are still valid. AMEC facilitated a discussion session with the HMPC during their second 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 also presented common categories of mitigation goals from other plans.

The planning committee made the following changes to the 2011 goals:

-
- Goal 2—the word “property” was added.
 - Goal 4—the words “and continuity of operations” were added.
 - Goal 5 was deleted—“Pursue multi-objective opportunities whenever possible”.

The revised goals for this plan update are provided below:

Goal 1: Protect the Health and Safety of Residents

Goal 2: Reduce Future Property Losses from Hazard Events

Goal 3: Increase Public Awareness and Educate on the Vulnerability to Hazards

Goal 4: Improve Emergency Management and Continuity of Operations Capabilities

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.

During the second meeting of the HMPC, the results of the risk assessment update were provided to the HMPC members for review and the key issues were identified for the high-ranked hazards. Meeting #2 concluded with an introduction to mitigation actions to prompt discussions within and among the jurisdictions about any new mitigation actions as well as on-going actions from the existing plans.

The focus of Meeting #3 was to update the mitigation strategy. For a comprehensive range of mitigation actions to consider, the HMPC reviewed the following information during Meeting #3:

- Existing Actions submitted in the previous mitigation plan,
- Key Issues from Risk Assessment (top 10 hazards),
- State Priorities for Hazard Mitigation Assistance Grants, and
- Public Opinion from Surveys.

In development of each jurisdiction's final mitigation strategy for submission to the plan, the jurisdictions were encouraged to review the details of the risk assessment to address vulnerabilities specific to their jurisdiction. Prior to the meeting, they were also provided a link to the publication, *FEMA Mitigation Action Ideas, 2013*. This document was developed by FEMA to provide a resource that communities can use to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters.

The mitigation strategy update included a thorough review and status update of the existing actions. **Table 4.1** provides a summary of the number of actions that each jurisdiction identified in the previous plan. Please note that the public school districts were not included as officially participating jurisdictions in the previous plan. As a result, there are no previous actions for them.

Table 4.1. Summary of Number of Actions in Previous Plan

Jurisdiction	# of Actions
Cedar County	23
City of Bennett	19
City of Clarence	16
City of Durant	17
City of Lowden	19
City of Mechanicsville	36
City of Stanwood	21
City of Tipton	18
City of West Branch	18
Total	187

Source: 2011 Cedar County Hazard Mitigation Plan

Prior to Meeting #3, the list of actions submitted in the previous plan was emailed to all members of the HMPC. Then at the third meeting, a print-out was provided to members of the HMPC with the actions submitted in the previous Hazard Mitigation Plan. Each jurisdiction was instructed to complete the column titled “2013 Action Status” with one of the following status choices:

- Completed,
- Not Started/Continue in Plan Update,
- In Progress/Continue in Plan Update, or
- Delete.

Of the 187 actions in the previous plan, 14 have been completed, 6 were deleted, and 167 were continued in the plan update (47 not started and 120 in progress). Appendix C contains the actions that were either completed or deleted from the mitigation strategy along with any applicable comments. The continued actions are discussed in additional detail, along with the new actions in **Section 4.3**.

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 Cedar 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.

Jurisdictions were encouraged to meet with others in their community to finalize the actions to be submitted to the updated mitigation strategy. 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 worksheet was completed by the jurisdictions for each new and continued action submitted for the updated mitigation strategy. **Figure 4.1** is a sample of the STAPLEE worksheet. All actions submitted

to the plan are indicated with a high, medium, or low priority level based on the modified STAPLEE score.

Figure 4.1. Modified STAPLEE Worksheet

**CEDAR COUNTY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN**

Action Title:	Jurisdiction:
Action ID:	

Note: Make sure the Action ID Matches the Action ID in the spreadsheet. Action ID format for new actions is Jurisdiction-# (Ex. Bennett-1, Bennett-2, etc.)

STAPLEE Criteria	Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially acceptable?		
T: Is it Technically feasible and potentially successful?		
A: Does the jurisdiction have the administrative capacity to execute this action?		
P: Is it Politically acceptable?		
L: Is there Legal authority to implement?		
E: Is it Economically beneficial?		
E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact)		
Will historic structures be saved or protected?		
Could it be implemented quickly?		
STAPLEE Score		

Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives would be saved.	
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	
Mitigation Effectiveness Score		

Total Score (STAPLEE Score + Mitigation Effectiveness Score): _____

Local Priority Level: High (33+ points) Medium (20-32 points) Low (less than 20 points)

Completed by (name/title/phone #): _____

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 167 actions that were continued from the previous plan, 27 new actions were identified, for a combined total of 194 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 the next sequential 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	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
County-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	45	High
County-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	44	High
County-03	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	Not Started/Continue in Plan Update	Severe Winter Storm	2	42	High
County-04	Hazardous Tree Removal Program	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	43	High
County-05	Power, Service, Electrical, and Water Distribution Lines	In Progress/Continue in Plan Update	Tornado / Windstorm	2	43	High
County-06	Roadway Elevations	Not Started/Continue in Plan Update	Flash Flood	2	42	High
County-07	Storm Shelters / Safe Rooms	In Progress/Continue in Plan Update	Tornado / Windstorm	2	43	High
County-08	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Not Started/Continue in Plan Update	Tornado / Windstorm	2	44	High
County-09	Static Detectors	Not Started/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	41	High
County-10	Stormwater System and Drainage Improvements	Not Started/Continue in Plan Update	Flash Flood	2	42	High
County-11	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	River Flood	2	42	High
County-12	Drainage Study / Stormwater Master Plan	Not Started/Continue in Plan Update	Flash Flood	2	44	High
County-13	Flood-Prone Property Acquisition	Not Started/Continue in Plan Update	River Flood	2	43	High
County-14	Groundwater / Irrigation / Water Conservation Management Plan and Practices	Not Started/Continue in Plan Update	Drought	2	44	High
County-15	Drainage Districts	Not Started/Continue in Plan Update	River Flood	2	42	High
County-16*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	River Flood	2	45	High
County-17*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	River Flood	2	45	High
County-18	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	45	High
County-19*	Floodplain Management	In Progress/Continue in Plan Update	River Flood	2	45	High
County-20	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	45	High
County-21	Comprehensive Disaster / Emergency Response / Rescue Plan	In Progress/Continue in Plan Update	Tornado / Windstorm	4	45	High

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
County-22	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	45	High
County-23	Weather Radios	In Progress/Continue in Plan Update	All	4	45	High
County-24	Cyber security	NEW	Man Made	4	43	High
Bennett-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	46	High
Bennett-02	Backup Generators	Not Started/Continue in Plan Update	Tornado / Windstorm	2	44	High
Bennett-03	Storm Shelters / Safe Rooms	Not Started/Continue in Plan Update	Tornado / Windstorm	2	42	High
Bennett-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	In Progress/Continue in Plan Update	Tornado / Windstorm	2	36	High
Bennett-05	Stormwater System and Drainage Improvements	Not Started/Continue in Plan Update	Flash Flood	2	35	High
Bennett-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	River Flood	2	31	Medium
Bennett-07	Drainage Study / Stormwater Master Plan	Not Started/Continue in Plan Update	Flash Flood	2	30	Medium
Bennett-08	Flood-Prone Property Acquisition	Not Started/Continue in Plan Update	River Flood	2	32	Medium
Bennett-09*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	River Flood	2	41	High
Bennett-10*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	River Flood	2	47	High
Bennett-11*	Floodplain Management	In Progress/Continue in Plan Update	River Flood	2	46	High
Bennett-12	Tree City USA	Not Started/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	23	Medium
Bennett-13	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	41	High
Bennett-14	Civil Service Improvements	In Progress/Continue in Plan Update	All	4	38	High
Bennett-15	Comprehensive Disaster / Emergency Response / Rescue Plan	In Progress/Continue in Plan Update	Tornado / Windstorm	4	43	High
Bennett-16	Improve Snow / Ice Removal Program / Snow Fence	In Progress/Continue in Plan Update	Severe Winter Storm	4	47	High
Bennett-17	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	47	High
Bennett-18	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	47	High
Bennett-19	Weather Radios	In Progress/Continue in Plan Update	All	4	47	High
Bennett-20	Power backup for critical facilities	NEW	All	2	42	High
Bennett-21	Early warning system for critical facilities	NEW	All	2	31	Medium

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
Clarence-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	20	Medium
Clarence-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	30	Medium
Clarence-03	Storm Shelters / Safe Rooms	Not Started/Continue in Plan Update	Tornado / Windstorm	2	27	Medium
Clarence-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Not Started/Continue in Plan Update	Tornado / Windstorm	2	32	Medium
Clarence-05	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	25	Medium
Clarence-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	River Flood	2	20	Medium
Clarence-07	Drainage Study / Stormwater Master Plan	Not Started/Continue in Plan Update	Flash Flood	2	20	Medium
Clarence-08	Flood-Prone Property Acquisition	Not Started/Continue in Plan Update	River Flood	2	22	Medium
Clarence-09*	Regulation Enforcements and Updates	Not Started/Continue in Plan Update	River Flood	2	34	High
Clarence-12	Public Awareness / Education	Not Started/Continue in Plan Update	All	3	28	Medium
Clarence-13	Improve Snow / Ice Removal Program / Snow Fence	In Progress/Continue in Plan Update	Severe Winter Storm	4	28	Medium
Clarence-14	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	32	Medium
Clarence-15	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	38	High
Clarence-16	Weather Radios	In Progress/Continue in Plan Update	All	4	38	High
Clarence-17	Sanitary Sewer Upgrade	NEW	Flash Flood	2	28	Medium
Durant-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	32	Medium
Durant-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	47	High
Durant-03	Storm Shelters / Safe Rooms	Not Started/Continue in Plan Update	Tornado / Windstorm	2	32	Medium
Durant-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	In Progress/Continue in Plan Update	Tornado / Windstorm	2	30	Medium
Durant-05	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	27	Medium
Durant-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	Flash Flood	2	26	Medium
Durant-07	Drainage Study / Stormwater Master Plan	Not Started/Continue in Plan Update	Flash Flood	2	37	High
Durant-08	Flood-Prone Property Acquisition	Not Started/Continue in Plan Update	Flash Flood	2	29	Medium

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
Durant-09*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	Flash Flood	2	37	High
Durant-10*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	Flash Flood	2	34	High
Durant-11*	Floodplain Management	In Progress/Continue in Plan Update	Flash Flood	2	41	High
Durant-12	Tree City USA	Not Started/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	27	Medium
Durant-14	Civil Service Improvements	Not Started/Continue in Plan Update	All	4	40	High
Durant-15	Improve Snow / Ice Removal Program / Snow Fence	In Progress/Continue in Plan Update	Severe Winter Storm	4	32	Medium
Durant-16	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	40	High
Durant-18	Prepare for Radiological event	NEW	All	1	39	High
Durant-19	Prepare for Earthquake event	NEW	All	1	40	High
Durant-20	Severe Wind Occurrence	NEW	Tornado / Windstorm	2	43	High
Lowden-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	34	High
Lowden-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	44	High
Lowden-03	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	In Progress/Continue in Plan Update	Severe Winter Storm	2	40	High
Lowden-04	Storm Shelters / Safe Rooms	In Progress/Continue in Plan Update	Tornado / Windstorm	2	31	Medium
Lowden-05	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	In Progress/Continue in Plan Update	Tornado / Windstorm	2	32	Medium
Lowden-06	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	39	High
Lowden-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	In Progress/Continue in Plan Update	Flash Flood	2	39	High
Lowden-08	Drainage Study / Stormwater Master Plan	In Progress/Continue in Plan Update	Flash Flood	2	39	High
Lowden-09	Flood-Prone Property Acquisition	In Progress/Continue in Plan Update	Flash Flood	2	27	Medium
Lowden-10*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	Flash Flood	2	37	High
Lowden-11*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	Flash Flood	2	38	High
Lowden-12*	Floodplain Management	In Progress/Continue in Plan Update	Flash Flood	2	38	High
Lowden-13	Tree City USA	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	32	Medium
Lowden-14	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	31	Medium

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
Lowden-15	Civil Service Improvements	In Progress/Continue in Plan Update	All	4	43	High
Lowden-16	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	42	High
Lowden-17	Emergency Communications	In Progress/Continue in Plan Update	Tornado / Windstorm	4	34	High
Lowden-18	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	33	High
Lowden-19	Weather Radios	In Progress/Continue in Plan Update	All	4	35	High
Lowden-20	6" Mobile Trash Pump	NEW	Flash Flood	2	41	High
Mechanicsville-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	45	High
Mechanicsville-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	29	Medium
Mechanicsville-03	Electrical System Looped Distribution / Redundancies	Not Started/Continue in Plan Update	Tornado / Windstorm	2	22	Medium
Mechanicsville-04	Elevate Pad Mounted Transformers and Switch Gear	Not Started/Continue in Plan Update	River Flood	2	23	Medium
Mechanicsville-05	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	Not Started/Continue in Plan Update	Severe Winter Storm	2	23	Medium
Mechanicsville-07	Hazardous Tree Removal Program	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	30	Medium
Mechanicsville-08	New Municipal Well	Not Started/Continue in Plan Update	Drought	2	31	Medium
Mechanicsville-09	Power, Service, Electrical, and Water Distribution Lines	In Progress/Continue in Plan Update	Tornado / Windstorm	2	19	Low
Mechanicsville-10	Roadway Elevations	Not Started/Continue in Plan Update	Flash Flood	2	27	Medium
Mechanicsville-11	Storm Shelters / Safe Rooms	Not Started/Continue in Plan Update	Tornado / Windstorm	2	24	Medium
Mechanicsville-12	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	In Progress/Continue in Plan Update	Tornado / Windstorm	2	42	High
Mechanicsville-13	Static Detectors	Not Started/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	22	Medium
Mechanicsville-15	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	River Flood	2	32	Medium
Mechanicsville-17	Complete / Update wildfire Protection Plan	Not Started/Continue in Plan Update	Grass/Wildland Fire	2	28	Medium
Mechanicsville-18	Drainage Study / Stormwater Master Plan	In Progress/Continue in Plan Update	Flash Flood	2	32	Medium
Mechanicsville-19	Drought Monitoring Plan and Procedures	Not Started/Continue in Plan Update	Drought	2	22	Medium
Mechanicsville-24	Fire Wise Community	Not Started/Continue in Plan Update	Grass/Wildland Fire	2	28	Medium

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
Mechanicsville-25*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	River Flood	2	36	High
Mechanicsville-27	Tree City USA	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	25	Medium
Mechanicsville-28	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	28	Medium
Mechanicsville-29	Civil Service Improvements	In Progress/Continue in Plan Update	All	4	31	Medium
Mechanicsville-30	Fire Prevention Program	In Progress/Continue in Plan Update	Grass/Wildland Fire	4	30	Medium
Mechanicsville-31	Improve Snow / Ice Removal Program / Snow Fence	In Progress/Continue in Plan Update	Severe Winter Storm	4	32	Medium
Mechanicsville-32	Evacuation Plan	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	4	32	Medium
Mechanicsville-33	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	28	High
Mechanicsville-34	Emergency Communications	In Progress/Continue in Plan Update	Tornado / Windstorm	4	34	High
Mechanicsville-35	Warning Systems	Not Started/Continue in Plan Update	Tornado / Windstorm	4	30	Medium
Stanwood-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	47	High
Stanwood-03	Hazardous Tree Removal Program	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	44	High
Stanwood-04	Power, Service, Electrical, and Water Distribution Lines	In Progress/Continue in Plan Update	Tornado / Windstorm	2	43	High
Stanwood-05	Storm Shelters / Safe Rooms	In Progress/Continue in Plan Update	Tornado / Windstorm	2	42	High
Stanwood-06	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	In Progress/Continue in Plan Update	Tornado / Windstorm	2	44	High
Stanwood-07	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	39	High
Stanwood-08	Streambank Stabilization / Grade Control Structures / Channel Improvements	Not Started/Continue in Plan Update	River Flood	2	39	High
Stanwood-09	Groundwater / Irrigation / Water Conservation Management Plan and Practices	In Progress/Continue in Plan Update	Drought	2	41	High
Stanwood-10	Source Water Contingency Plan	In Progress/Continue in Plan Update	Drought	2	40	High
Stanwood-11*	Maintain good standing in National Flood Insurance Program (NFIP)	Not Started/Continue in Plan Update	River Flood	2	46	High
Stanwood-12*	Floodplain Management	Not Started/Continue in Plan Update	River Flood	2	47	High
Stanwood-13	Tree City USA	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	44	High
Stanwood-15	Civil Service Improvements	In Progress/Continue in Plan Update	All	4	44	High

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
		Update				
Stanwood-16	Comprehensive Disaster / Emergency Response / Rescue Plan	In Progress/Continue in Plan Update	Tornado / Windstorm	4	46	High
Stanwood-17	Evacuation Plan	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	4	40	High
Stanwood-19	Emergency Communications	In Progress/Continue in Plan Update	Tornado / Windstorm	4	44	High
Stanwood-20	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	46	High
Stanwood-21	Weather Radios	In Progress/Continue in Plan Update	All	4	46	High
Tipton-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	28	Medium
Tipton-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	38	High
Tipton-03	Power, Service, Electrical, and Water Distribution Lines	In Progress/Continue in Plan Update	Tornado / Windstorm	2	28	Medium
Tipton-04	Storm Shelters / Safe Rooms	In Progress/Continue in Plan Update	Tornado / Windstorm	2	26	Medium
Tipton-05	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Not Started/Continue in Plan Update	Tornado / Windstorm	2	27	Medium
Tipton-06	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	33	High
Tipton-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	In Progress/Continue in Plan Update	River Flood	2	25	Medium
Tipton-08	Drainage Study / Stormwater Master Plan	In Progress/Continue in Plan Update	Flash Flood	2	34	High
Tipton-09	Flood-Prone Property Acquisition	Not Started/Continue in Plan Update	River Flood	2	27	Medium
Tipton-10*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	River Flood	2	34	High
Tipton-11*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	River Flood	2	33	High
Tipton-12*	Floodplain Management	In Progress/Continue in Plan Update	River Flood	2	35	High
Tipton-13	Tree City USA	In Progress/Continue in Plan Update	Thunderstorm/Lightning/Hail	2	33	High
Tipton-14	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	28	Medium
Tipton-15	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	33	High
Tipton-16	Emergency Communications	In Progress/Continue in Plan Update	Tornado / Windstorm	4	32	Medium
Tipton-17	Warning Systems	In Progress/Continue in Plan Update	Tornado / Windstorm	4	34	High

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
Tipton-18	Weather Radios	In Progress/Continue in Plan Update	All	4	28	Medium
West Branch-01	Obtain Missing Data	In Progress/Continue in Plan Update	All	1	44	High
West Branch-02	Backup Generators	In Progress/Continue in Plan Update	Tornado / Windstorm	2	42	High
West Branch-03	Power, Service, Electrical, and Water Distribution Lines	In Progress/Continue in Plan Update	Tornado / Windstorm	2	39	High
West Branch-04	Storm Shelters / Safe Rooms	In Progress/Continue in Plan Update	Tornado / Windstorm	2	32	Medium
West Branch-06	Stormwater System and Drainage Improvements	In Progress/Continue in Plan Update	Flash Flood	2	39	High
West Branch-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	In Progress/Continue in Plan Update	River Flood	2	39	High
West Branch-08	Drainage Study / Stormwater Master Plan	In Progress/Continue in Plan Update	Flash Flood	2	34	High
West Branch-09	Flood-Prone Property Acquisition	In Progress/Continue in Plan Update	River Flood	2	34	High
West Branch-10*	Regulation Enforcements and Updates	In Progress/Continue in Plan Update	River Flood	2	38	High
West Branch-11*	Maintain good standing in National Flood Insurance Program (NFIP)	In Progress/Continue in Plan Update	River Flood	2	40	High
West Branch-12*	Floodplain Management	In Progress/Continue in Plan Update	River Flood	2	38	High
West Branch-14	Public Awareness / Education	In Progress/Continue in Plan Update	All	3	42	High
West Branch-15	Civil Service Improvements	In Progress/Continue in Plan Update	All	4	39	High
West Branch-16	Alert / Warning Sirens	In Progress/Continue in Plan Update	All	4	42	High
West Branch-19*	Relocate Police/Fire Station out of the floodway	New	River Flood	4	31	Medium
Bennett Schools - 01	Obtain Missing Data	NEW	All	1	46	High
Bennett Schools - 02	Backup Generators	NEW	Tornado / Windstorm	2	44	High
Bennett Schools - 03	Storm Shelters / Safe Rooms	NEW	Tornado / Windstorm	2	41	High
Bennett Schools - 04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	NEW	Tornado / Windstorm	2	39	High
Bennett Schools - 05	Public Awareness / Education	NEW	All	3	42	High
Durant Schools-01	Backup Generators	NEW	Severe Winter Storm	1	37	High
Durant Schools-02	Construct Safe Rooms	NEW	Tornado / Windstorm	1	43	High
North Cedar Schools-01	Sloping creek banks in Lowden to prevent washouts	NEW	All	1	41	High

Action ID	Action Title	2014 Action Status	Primary Hazard Addressed (Select one from list)	Goal #	STAPLEE Score	Priority
North Cedar Schools-02	Public Awareness / Education	NEW	All	3	45	High
North Cedar Schools-03	Backup Generators	NEW	Tornado / Windstorm	2	43	High
North Cedar Schools-04	Storm Shelter/Safe Room	NEW	Tornado / Windstorm	2	42	High
North Cedar Schools-05	Obtain Missing Data	NEW	All	1	45	High
Tipton Schools-01	Backup Generators	NEW	Tornado / Windstorm	1	36	High
Tipton Schools-02	Safe Room	NEW	Tornado / Windstorm	2	30	Medium
Tipton Schools-03	Obtain Missing Data	NEW	All	1	45	High
West Branch Schools-01	Back up Generators	NEW	Tornado / Windstorm	4	42	High
West Branch Schools-02	Storms Shelters/ Safe Rooms	NEW	Tornado / Windstorm	1	41	High
West Branch Schools-03	Pipeline Break Disaster: Schools have plan for this in crisis management documents. (Students, staff walk in direction of wind to avoid fallout (or) if possible bused	NEW	Earthquakes	4	39	High

*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: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	Emergency Management	Local Jurisdictions, DNR, IA HSEMD	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
County-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	None Identified	Emergency Management	HSEMD, FEMA	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
County-03	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	Evaluate the need to expand water storage capacity through a new water tower, stand pipe, etc. to provide a safe water supply for the community and additional water for fire protection. Establish emergency water supplies such as dry hydrants and individual or community cisterns for defending structures from wildland fires.	None Identified	Engineer's Office	DNR	CDBG	\$30,000+	Establish back-up supplies of municipal water to fight wildfires and supply the needs of citizens. Identify adequate water sources to mitigate potential damages or expenses due to drought. Provide a dependable and ready supply of water so fire districts don't have to rely on equipment and personnel to move water from local water sources to the fire.	Five Years
County-04	Hazardous Tree Removal Program	Identify and remove hazardous limbs and/or trees.	None Identified	Conservation Board	Utility Companies	HMGP, US Forest Service	\$20,000	Decrease the risk of damage to electrical lines and personal property.	Ongoing
County-05	Power, Service, Electrical, and Water Distribution Lines	Communities can work with their local Power CO OP District or Electricity Department to identify vulnerable transmission and distribution lines and plan to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to storm events. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Rural Water Districts can work with their County to identify vulnerable distribution lines near river crossings or creek beds and plan to place lines underground to reduce vulnerability from storm events and erosion.	None Identified	Engineer's Office	Utility Companies	HMGP, PDM, Power Districts, Rural Water Districts	\$50,000 to \$70,000 (per mile for electrical)	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-06	Roadway Elevations	Improve elevations of roadways in low-lying areas prone to flooding. Elevate roads above the adjacent land to minimize risk from flooding to the transport system. Under flood conditions those works can serve as embankments, i.e. an obstruction to the water	None Identified	Engineer's Office	Iowa DOT	HMGP, PDM	\$100,000+	Increase public health and safety. Ensure accessibility to all areas and persons	Five Years
County-07	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	Emergency Management	HSEMD, FEMA	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
County-08	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	Environmental Health	CO-OP, Citizens	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing
County-09	Static Detectors	Static Detectors are designed to detect lightning strikes and can predict the distance to the lightning strike and whether a storm is approaching or moving away from the detector. Deploying a static detector at outdoor events can warn of approaching, fast moving, storms and associated lightning, thus helping officials to respond appropriately. Areas prone to lightning strikes may increase grounding capabilities.	None Identified	Emergency Management	None Identified	N/A	\$1,000	Increase public health and safety at outdoor events.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-10	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	None Identified	Engineer's Office	HSEMD, FEMA, HUD	HMGP, CDBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-11	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	None Identified	Engineer's Office	USACE, HSEMD, FEMA	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
County-12	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	None Identified	Engineer's Office	HUD	CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
County-13	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	None Identified	Emergency Management	DHSEM, FEMA	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	One to two years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-14	Groundwater / Irrigation / Water Conservation Management Plan and Practices	Develop and implement a plan/best management practices to conserve water use and reduce total use (high water use to low water use) and consumption of groundwater resources by citizens and irrigators of agricultural land during prolonged periods of drought. Identify water saving irrigation projects or improvements such as sprinklers or soil moisture monitoring. Potential restrictions on water could include limitations on lawn watering, car washing, farm irrigation restrictions, or water sold to outside sources. Implement BMPs through water conservation practices such as changes in irrigation management, education on no-till agriculture and modified crop selection, use of xeroscaping in communities and buffer strips.	None Identified	Conservation Board	DNR	HMGP, PDM, DEQ, county & Local Governing Agency	\$10,000+	Conserving water during periods in which the demand increases along with best management practices will reduce the total consumption of groundwater resources and ensure an adequate water supply during drought periods and reduce the risk of depleting the water supply. This protects the residents and the local agricultural economy.	Ongoing
County-15	Drainage Districts	Evaluate the need to establish or improve drainage districts as necessary. Drainage districts are local bodies formed for the purpose of draining, ditching, and improving land for agricultural and sanitary purposes. They are authorized to build and maintain drains and levees, to use all necessary private land within their corporate bodies for that purpose, and to tax land within their boundaries as necessary.	None Identified	Conservation Board	DNR	N/A	N/A	Improve land for agricultural and sanitary purposes on a regular basis.	Five Years
County-16	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	None Identified	Zoning Office	DNR, FEMA	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-17	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	None Identified	Zoning Office	DNR, FEMA	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
County-18	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	None Identified	Emergency Management	DHSEM, FEMA	HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Two to four years
County-19	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	None Identified	Zoning Office	DNR, FEMA	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing
County-20	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	None Identified	Emergency Management	DHSEM	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
County-21	Comprehensive Disaster / Emergency Response / Rescue Plan	Establish or update Comprehensive City/Village Disaster and Emergency Response / Rescue Plan. Disaster Plans should include land-use planning and mitigation when applicable.	None Identified	Emergency Management	DHSEM, FEMA	Emergency Management Performance Grant, Homeland Security Funding	\$6,000+	Comprehensive plans such as these identify effective procedures and vulnerable areas when disaster strikes. This ensures preparedness and promotes emergency operations to run smoothly, reducing damages, deaths, and injuries.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
County-22	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	None Identified	Emergency Management	DHSEM, FEMA	HMGP, PDM, County & Local Governin g Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
County-23	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	None Identified	Emergency Management	DHSEM, FEMA	HMGP, PDM, County & Local Governin g Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
County-24	Cyber security	Install EVMS scanning system, or system of same capability.	None Identified	Emergency Management	Homeland Security Region, DHSEM	HMGP, PDM, County & Local Governin g Agency	\$10,000.+	Protect documents and continuity of operations capabilities, breach of personnel information, and internal cyber attacks.	Three to five years
Bennett-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	City Clerk		HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Bennett-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	None Identified	Public Works		HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Bennett-03	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	Mayor/City Council		HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/re trofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Bennett-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	Public Works		HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-05	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	None Identified	Public Works		HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	None Identified	Public Works/City Council		USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
Bennett-07	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	None Identified	Public Works/City Council		CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
Bennett-08	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	None Identified	City Council		HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	One to two years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-09	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	None Identified	City Council		HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
Bennett-10	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	None Identified	City Council		N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
Bennett-11	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	None Identified	City Council		N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-12	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	None Identified	Public Works		Arbor Day Foundation, US Forest Service	\$1,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing
Bennett-13	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	None Identified	City Council		HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Bennett-14	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	None Identified	City Council		PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-15	Comprehensive Disaster / Emergency Response / Rescue Plan	Establish or update Comprehensive City/Village Disaster and Emergency Response / Rescue Plan. Disaster Plans should include land-use planning and mitigation when applicable.	None Identified	City Council		Emergency Management Performance Grant, Homeland Security Funding	\$6,000+	Comprehensive plans such as these identify effective procedures and vulnerable areas when disaster strikes. This ensures preparedness and promotes emergency operations to run smoothly, reducing damages, deaths, and injuries.	Ongoing
Bennett-16	Improve Snow / Ice Removal Program / Snow Fence	Revise and improve the snow and ice removal program for streets. Revisions should address situations such as plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris. This would include updating the emergency routes, acquiring equipment that is needed, paving routes, and ordinances as necessary. consider purchase of snow fence at critical areas and installation of living snow fence.	None Identified	Public Works		PDM	\$20,000+	Having an effective snow/ice removal program will improve capabilities to rescue stranded residents and increase the capacity in which snow can be removed after a severe winter storm.	Ongoing
Bennett-17	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	None Identified	Fire Department		HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
Bennett-18	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	None Identified	City Clerk		HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Two to four years
Bennett-19	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	None Identified	County EMA/City Council		HMGP, PDM, County & Local Governing Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
Bennett-20	Power backup for critical facilities	Purchase and Install backup generators	None Identified	Public Works		HMGP, PDM, County & Local Governing Agency	\$35,000	Provides continuity of operations for critical functions	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett-21	Early warning system for critical facilities	Purchase and Install early warning system	None Identified	County EMA/City Council		HMGP, PDM, County & Local Governing Agency	\$50 per radio	Provides warning of severe weather conditions to allow citizens to take cover, reducing the risk of death/injury	Ongoing
Clarence-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	funding	city office	city council, fire department	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Clarence-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	funding	city council	public works	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Clarence-03	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	funding	city council	public works	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Clarence-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	funding	public works	fire department	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Clarence-05	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	funding	public works	fire department	HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Clarence-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	funding	public works	city council	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
Clarence-07	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	funding	city engineer	public works	CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
Clarence-08	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	funding	city council	public works	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	One to two years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Clarence-09	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	funding	planning zoning committee	public works	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
Clarence-12	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	funding	city council	city clerk	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Clarence-13	Improve Snow / Ice Removal Program / Snow Fence	Revise and improve the snow and ice removal program for streets. Revisions should address situations such as plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris. This would include updating the emergency routes, acquiring equipment that is needed, paving routes, and ordinances as necessary. consider purchase of snow fence at critical areas and installation of living snow fence.	funding	city council	city clerk, public works	PDM	\$20,000+	Having an effective snow/ice removal program will improve capabilities to rescue stranded residents and increase the capacity in which snow can be removed after a severe winter storm.	Ongoing
Clarence-14	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	funding	fire department	police department	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
Clarence-15	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	funding	city council	city clerk	HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Two to four years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Clarence-16	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	funding, manpower	fire department	public works	HMGP, PDM, County & Local Governin g Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
Clarence-17	Sanitary Sewer Upgrade	The DNR has given us a consent order to try to cut down on Inflow and Infiltration into the lagoons which includes steps the city must take and a timeline	funding	city council	public works	CDBG, Local Governin g Agency	TO BE DETERMI NED	Reduce inflow and infiltration to lagoons.	3-5 years
Durant-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	City Clerk	EMA director	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Durant-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	None Identified	Public Works	City Engineer and Electric Utility	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Durant-03	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	City Council and Engineer	Engineer and EMA Director	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/re trofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Durant-04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	Public Works	EMA director	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Durant-05	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	None Identified	Water & Sewer dept along with city council	City Engineer and IDNR	HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Durant-06	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	None Identified	Council	IDNR	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
Durant-07	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	None Identified	Engineer/Council	IDNR, City Engineer, conservation groups for watershed	CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
Durant-08	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	None Identified	Council	IDNR	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	One to two years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Durant-09	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	None Identified	Council	Police Dept., County Gov't and EMA director; State EMA	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
Durant-10	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	None Identified	Council	Insurance Agent, IDNR, and County gov't	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
Durant-11	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	None Identified	Mayor, Clerk & council	Engineer, IDNR, Army Corp of engineers	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Durant-12	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	None Identified	Sewer & water dept. with engineer and council	Tree Committee, IDNR, local community groups	Arbor Day Foundation, US Forest Service	\$1,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing
Durant-14	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	None Identified	Council	IDNR	PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing
Durant-15	Improve Snow / Ice Removal Program / Snow Fence	Revise and improve the snow and ice removal program for streets. Revisions should address situations such as plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris. This would include updating the emergency routes, acquiring equipment that is needed, paving routes, and ordinances as necessary. consider purchase of snow fence at critical areas and installation of living snow fence.	None Identified	Council	County gov't	PDM	\$20,000+	Having an effective snow/ice removal program will improve capabilities to rescue stranded residents and increase the capacity in which snow can be removed after a severe winter storm.	Ongoing
Durant-16	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	None Identified	Council	EMA director	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Durant-18	Prepare for Radiological event	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	City Clerk, County	EMA director	HMGP, Fire Dept	\$25,000	Reduce the risk of death/injury associated with radiation, and ensure we have a good evacuation plan and shelter for residents.	Five Years
Durant-19	Prepare for Earthquake event	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	City Clerk, County, Fire Dept	EMA director	HMGP, Fire Dept	\$25,000	Reduce the risk of death/injury associated with earthquake destruction	Five Years
Durant-20	Severe Wind Occurrence	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	City Council, Building Inspector & Engineer & DME	Engineer and EMA Director	HMGP, PDM	\$15,000 +	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Lowden-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	Public Works	Clerk	HMGP	N/A	Improve the overall quality and information found in this plan.	Ongoing
Lowden-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	Funding	Public Works	City Council/Clerk	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Five Years
Lowden-03	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	Evaluate the need to expand water storage capacity through a new water tower, stand pipe, etc. to provide a safe water supply for the community and additional water for fire protection. Establish emergency water supplies such as dry hydrants and individual or community cisterns for defending structures from wildland fires.	Funding	Public Works	City Council/Clerk	CDBG	\$30,000+	Establish back-up supplies of municipal water to fight wildfires and supply the needs of citizens. Identify adequate water sources to mitigate potential damages or expenses due to drought. Provide a dependable and ready supply of water so fire districts don't have to rely on equipment and personnel to move water from local water sources to the fire.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-04	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	Funding/Location	City Council	County Emergency Director/Fire Department/Engineer	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Lowden-05	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	Funding/Identification	Public Works	City Council/Clerk/Fire Department/Businesses	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-06	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	Funding	Public Works	City Council/ Civil Engineer	HMGP, DCBG, County & Local Governin g Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	Funding	Public Works	City Council/ Civil Engineer	USACE, PDM, HMGP, County & Local Governin g Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Ongoing
Lowden-08	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	Funding	Public Works	City Council/Civil Engineer	CDBG, County & Local Governin g Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
Lowden-09	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	Funding	Public Works	City Council/County Emergency Director/County Planning and Zoning	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-10	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	Maintaining Current Regulations	Public Works	City Council/County Emergency Director/County Planning and Zoning	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
Lowden-11	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	Maintaining Current Regulations	Public Works	City Council/County Emergency Director/County Planning and Zoning	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
Lowden-12	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	Maintaining Current Regulations	Public Works	City Council/County Emergency Director/County Planning and Zoning	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-13	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	Initiate Requirements	City Council	Tree Broad	Arbor Day Foundation, US Forest Service	\$1,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing
Lowden-14	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	Establish Education Program	City Council	Public Works/Fire Department/County Emergency Director/School Administration	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Lowden-15	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	Funding	City Council	Fire Department/Rescue	PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing
Lowden-16	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	Funding	City Council	Public Works/County Emergency Director/Fire Department	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Lowden-17	Emergency Communications	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.	Funding	City Council	Public Works/Fire Department/County Emergency Director	Homeland Security, County & Local Governing Agency	\$10,000	Coordination and clear and efficient communications between agencies increases the capabilities to protect and rescue, increases safety, and reduces the risk of mistakes due to miscommunications.	Ongoing
Lowden-18	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	Funding	City Council	Public Works/Fire Department/County Emergency Director	HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Ongoing
Lowden-19	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	Funding	City Council	Public Works/Fire Department/County Emergency Director/School Administration	HMGP, PDM, County & Local Governing Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
Lowden-20	6" Mobile Trash Pump	Provide a portable source for pumping storm water in an effort to reduce strain on sanitary sewer system and waste water treatment plant	Funding	City Council	Public Works/Fire Department	HMGP	\$25,000-\$35,000	Reduces strain on waste water treatment plant and collection system.	1-3 years
Mechanicsvill e-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	Availability of time	City Council		HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Mechanicsvill e-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	None Identified	City Council	None Identified	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Mechanicsvill e-03	Electrical System Looped Distribution / Redundancies	Provide looped distribution service and other redundancies in the electrical system as a backup-power supply in the event the primary system is destroyed or fails	Funding	City Council	Alliant Energy	HMGP, PDM, Public Power Districts	\$40,000 per mile	More reliable and resistant power distribution system	Three to five years
Mechanicsvill e-04	Elevate Pad Mounted Transformers and Switch Gear	Communities can elevate pad mounted transformers and switch gear above base flood elevation to eliminate damages from flooding	Funding	City Council	Alliant Energy	HMGP, PDM, Public Power Districts	\$3,000 per location	Reduce flood damages	One year

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-05	Expand Water Storage Capacity / Emergency Water Supplies / Dry Hydrants	Evaluate the need to expand water storage capacity through a new water tower, stand pipe, etc. to provide a safe water supply for the community and additional water for fire protection. Establish emergency water supplies such as dry hydrants and individual or community cisterns for defending structures from wildland fires.	Funding	Public Works/Administration & Fire	City Engineer	CDBG	\$30,000+	Establish back-up supplies of municipal water to fight wildfires and supply the needs of citizens. Identify adequate water sources to mitigate potential damages or expenses due to drought. Provide a dependable and ready supply of water so fire districts don't have to rely on equipment and personnel to move water from local water sources to the fire.	Five Years
Mechanicsville-07	Hazardous Tree Removal Program	Identify and remove hazardous limbs and/or trees.	Funding and staff time	City Council	Contractors	HMGP, US Forest Service	\$20,000	Decrease the risk of damage to electrical lines and personal property.	Ongoing
Mechanicsville-08	New Municipal Well	Communities can evaluate the need to install a new well to provide a safe backup water supply for the community, replace existing wells affected by drought, and additional water for fire protection	Funding	Public Works	None Identified	CDBG, State Revolving Fund (SRF)	\$350,000 to \$450,000	Provide adequate water sources to mitigate potential damages or expenses due to drought.	Five years
Mechanicsville-09	Power, Service, Electrical, and Water Distribution Lines	Communities can work with their local Power CO OP District or Electricity Department to identify vulnerable transmission and distribution lines and plan to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to storm events. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Rural Water Districts can work with their County to identify vulnerable distribution lines near river crossings or creek beds and plan to place lines underground to reduce vulnerability from storm events and erosion.	Funding and staff time	City Council	Alliant Energy	HMGP, PDM, Power Districts, Rural Water Districts	\$50,000 to \$70,000 (per mile for electrical)	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsvill e-10	Roadway Elevations	Improve elevations of roadways in low-lying areas prone to flooding. Elevate roads above the adjacent land to minimize risk from flooding to the transport system. Under flood conditions those works can serve as embankments, i.e. an obstruction to the water	Funding	Public Works	None Identified	HMGP, PDM	\$100,000+	Increase public health and safety. Ensure accessibility to all areas and persons	Five Years
Mechanicsvill e-11	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	Funding	City Administrator	None Identified	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Mechanicsvill e-12	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	City Council	None Identified	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing
Mechanicsvill e-13	Static Detectors	Static Detectors are designed to detect lightning strikes and can predict the distance to the lightning strike and whether a storm is approaching or moving away from the detector. Deploying a static detector at outdoor events can warn of approaching, fast moving, storms and associated lightning, thus helping officials to respond appropriately. Areas prone to lightning strikes may increase grounding capabilities.	Funding	Fire/Administration	None Identified	N/A	\$1,000	Increase public health and safety at outdoor events.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-15	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	Funding	Public Works/Administration	None Identified	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
Mechanicsville-17	Complete / Update wildfire Protection Plan	Complete and/or update a Community Wildfire Protection Plan (CWPP). The CWPP enables a community to plan how it will reduce the risk of wildfire.	Availability of time, funding	Fire/Administration	None Identified	National Fire Plan, United States Forest Service, Bureau of Land Management	\$20,000	The plan identifies strategic sites and methods for fuel reduction projects across the landscape and jurisdictional boundaries.	Five Years
Mechanicsville-18	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	Funding and staff time	City Council	City Engineer	CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-19	Drought Monitoring Plan and Procedures	Develop and implement a plan/program to monitor the effects of drought.	Availability of time, funding	City Administrator	None Identified	HMGP, PDM	N/A	Communities can be proactive and well prepared to act as the effects of drought become an issue. Thorough monitoring systems, communities can mitigate potential damage or costs from the result of a drought event.	Five Years
Mechanicsville-24	Fire Wise Community	Work to become a Firewise Community USA participant through the US Forest Service in order to educate homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire. The Firewise Communities approach emphasizes community responsibility for planning in the design of a safe community as well as effective emergency response, and individual responsibility for safer home construction and design, landscaping, and maintenance.	Availability of time; funding	Fire/Administration	None Identified	US Forest Service	\$20,000	The national Firewise Communities program is intended to serve as a resource for agencies, tribes, organizations, fire departments, and communities across the U.S. to reduce loss of lives and property, and resources to wildland fire by building and maintaining communities in a way that is compatible with our natural surroundings.	Ongoing
Mechanicsville-25	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	None Identified	City Council/City Clerk	None Identified	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-27	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	Availability of time; funding	Administration and Public Works	None Identified	Arbor Day Foundation, US Forest Service	\$1,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing
Mechanicsville-28	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	Funding and staff time	Water department/Administration	IRWA, IAMU	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Mechanicsville-29	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	Funding and volunteer and staff time	Fire/Administration	Community volunteers	PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing
Mechanicsville-30	Fire Prevention Program	The Forest Service Wildland Fire Protection Program provides services in wildfire suppression training, equipment, pre-suppression planning, wildfire prevention, and aerial fire suppression.	Funding and volunteer time.	Fire/Administration	None Identified	NFS	Varies	This program is aimed at helping maximize the impact of the existing (predominantly volunteer) force of local firefighters across the state.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-31	Improve Snow / Ice Removal Program / Snow Fence	Revise and improve the snow and ice removal program for streets. Revisions should address situations such as plowing snow, ice removal, parking during snow and ice removal, and removal of associated storm debris. This would include updating the emergency routes, acquiring equipment that is needed, paving routes, and ordinances as necessary. consider purchase of snow fence at critical areas and installation of living snow fence.	Funding and availability of staff time.	Public Works/Administration	None Identified	PDM	\$20,000+	Having an effective snow/ice removal program will improve capabilities to rescue stranded residents and increase the capacity in which snow can be removed after a severe winter storm.	Ongoing
Mechanicsville-32	Evacuation Plan	Establish a plan to effectively evacuate residents during storm events and major flooding.	None Identified	Fire/Administration	None Identified	Homeland Security	\$2,000	Plans such as these identify effective procedures and ensure preparedness and promote emergency operations to run smoothly, reducing deaths and injuries.	Ongoing
Mechanicsville-33	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	Funding	City Administrator	None Identified	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
Mechanicsville-34	Emergency Communications	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.	Funding; political boundaries, Interoperable communication was in place and then EMA determined wasn't necessary for fire and law to communicate until events happened to prove otherwise.	Fire/EMS/Police/Administration	None Identified	Homeland Security, County & Local Governing Agency	\$10,000	Coordination and clear and efficient communications between agencies increases the capabilities to protect and rescue, increases safety, and reduces the risk of mistakes due to miscommunications.	One Year

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Mechanicsville-35	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	Availability of time; funding	City Administrator	None Identified	HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Two to four years
Stanwood-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	City Council	None Identified	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Stanwood-03	Hazardous Tree Removal Program	Identify and remove hazardous limbs and/or trees.	None Identified	Public Works	None Identified	HMGP, US Forest Service	\$20,000	Decrease the risk of damage to electrical lines and personal property.	Ongoing
Stanwood-04	Power, Service, Electrical, and Water Distribution Lines	Communities can work with their local Power CO OP District or Electricity Department to identify vulnerable transmission and distribution lines and plan to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to storm events. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Rural Water Districts can work with their County to identify vulnerable distribution lines near river crossings or creek beds and plan to place lines underground to reduce vulnerability from storm events and erosion.	None Identified	Public Works	None Identified	HMGP, PDM, Power Districts, Rural Water Districts	\$50,000 to \$70,000 (per mile for electrical)	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.	Ongoing
Stanwood-05	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	Public Works/City Clerk	None Identified	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
Stanwood-06	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	Public Works	None Identified	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Stanwood-07	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	None Identified	Public Works	None Identified	HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Stanwood-08	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection fro critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	None Identified	Public Works	None Identified	USACE, PDM, HMGP, County & Local Governin g Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
Stanwood-09	Groundwater / Irrigation / Water Conservation Management Plan and Practices	Develop and implement a plan/best management practices to conserve water use and reduce total use (high water use to low water use) and consumption of groundwater resources by citizens and irrigators of agricultural land during prolonged periods of drought. Identify water saving irrigation projects or improvements such as sprinklers or soil moisture monitoring. Potential restrictions on water could include limitations on lawn watering, car washing, farm irrigation restrictions, or water sold to outside sources. Implement BMPs through water conservation practices such as changes in irrigation management, education on no-till agriculture and modified crop selection, use of xeroscaping in communities and buffer strips.	None Identified	Public Works	None Identified	HMGP, PDM, DEQ, county & Local Governin g Agency	\$10,000+	Conserving water during periods in which the demand increases along with best management practices will reduce the total consumption of groundwater resources and ensure an adequate water supply during drought periods and reduce the risk of depleting the water supply. This protects the residents and the local agricultural economy.	Ongoing
Stanwood-10	Source Water Contingency Plan	Villages and cities can evaluate and locate new sources of groundwater to ensure adequate supplies to support the existing community and any additional growth which may occur. Also, identify and develop water sources for fire protection.	None Identified	Public Works	None Identified	CDBG, SRF, DEQ	\$5,000+	Provide adequate water sources to mitigate potential damages or expenses due to drought or wildfire.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Stanwood-11	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	None Identified	City Council	None Identified	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
Stanwood-12	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	None Identified	City Council	None Identified	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing
Stanwood-13	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	None Identified	Public Works/City Clerk	None Identified	Arbor Day Foundation, US Forest Service	\$1,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Stanwood-15	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	None Identified	Public Works/City Clerk	None Identified	PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing
Stanwood-16	Comprehensive Disaster / Emergency Response / Rescue Plan	Establish or update Comprehensive City/Village Disaster and Emergency Response / Rescue Plan. Disaster Plans should include land-use planning and mitigation when applicable.	None Identified	Public Works/City Clerk	None Identified	Emergency Management Performance Grant, Homeland Security Funding	\$6,000+	Comprehensive plans such as these identify effective procedures and vulnerable areas when disaster strikes. This ensures preparedness and promotes emergency operations to run smoothly, reducing damages, deaths, and injuries.	Ongoing
Stanwood-17	Evacuation Plan	Establish a plan to effectively evacuate residents during storm events and major flooding.	None Identified	Public Works/City Clerk	None Identified	Homeland Security	\$2,000	Plans such as these identify effective procedures and ensure preparedness and promote emergency operations to run smoothly, reducing deaths and injuries.	Two Years
Stanwood-19	Emergency Communications	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.	None Identified	City Clerk	None Identified	Homeland Security, County & Local Governing Agency	\$10,000	Coordination and clear and efficient communications between agencies increases the capabilities to protect and rescue, increases safety, and reduces the risk of mistakes due to miscommunications.	Three Years
Stanwood-20	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	None Identified	Public Works/City Clerk/Fire Department	None Identified	HMGP, PDM, County & Local Governing Agency	\$5,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Two to four years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Stanwood-21	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	None Identified	City Clerk	None Identified	HMGP, PDM, County & Local Governing Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
Tipton-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	Time and sources of information	City Administrator	State, County, Federal agencies, along with private groups.	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Tipton-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	Cost	Electric, Gas, Public Works	State, Federal Hazard Mitigation agencies	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Tipton-03	Power, Service, Electrical, and Water Distribution Lines	Communities can work with their local Power CO OP District or Electricity Department to identify vulnerable transmission and distribution lines and plan to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to storm events. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Rural Water Districts can work with their County to identify vulnerable distribution lines near river crossings or creek beds and plan to place lines underground to reduce vulnerability from storm events and erosion.	Cost and feasibility. Placing lines underground requires cooperation and investment from property owners	Electric, Gas, Public Works	ITC, Northern, Clayton Energy, Alliance Water Resources	HMGP, PDM, Power Districts, Rural Water Districts	\$50,000 to \$70,000 (per mile for electrical)	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.	Ongoing
Tipton-04	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	Cost and available property in needed areas	Administration, Public Safety	State, FEMA	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Tipton-05	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	Private sector cooperation	Administration, Public Safety	State, Federal Regulators	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing
Tipton-06	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	Cost and magnitude of project	Public Works	State, Federal Hazard Mitigation agencies	HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	10 years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Tipton-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	Cost and availability of replacement wetland acres. The west drainage project was able to utilize existing City property by the sewer lagoons, however no additional space is available in that same area.	Public Works	State, Army Corp of Engineers, Federal Hazard Mitigation agencies	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+ per project	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Five to ten years
Tipton-08	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	Funding to date. If the Council approves the stormwater utility fee on December 1, 2014, staff will have a direct financing tool.	Public Works, Administration	State, Engineering firm	CDBG, County & Local Governing Agency	\$50,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One year
Tipton-09	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	Recent changes to the adopted flood maps, funding	Administration, Building Department	FEMA, State	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	Five years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Tipton-10	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	Part time staffing levels	Building and Zoning	None Identified	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
Tipton-11	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	Part time staffing levels	Building and Zoning	None Identified	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
Tipton-12	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	Part time staffing levels	Building and Zoning	None Identified	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Tipton-13	Tree City USA	Work to become a Tree City USA through the National Arbor Day Foundation in order to receive direction, technical assistance, and public education on how to establish a hazardous tree identification and removal program in order to limit potential tree damage and damages caused by trees in a community when a storm event occurs. The four main requirements include: 1) Establish a tree board; 2) Enact a tree care ordinance; 3) Establish a forestry care program; 4) Enact an Arbor Day observance and proclamation.	Time needed to complete the tree work	Public Works	Tree City USA	Arbor Day Foundation, US Forest Service	\$5,000+	Better maintained trees and hazard tree removal will eliminate damages to power lines and personal property during hazard events. Participation in Tree City USA will support community actions to mitigate damages from trees.	Ongoing
Tipton-14	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	Lack of citizen involvement or concern until a threat or hazard is eminent	Administration, Public Safety	County, State, Federal Agencies	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Tipton-15	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation.	Staff time dedicated to training	Public Safety (Police, Fire)	County, State	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
Tipton-16	Emergency Communications	Establish an action plan to improve communication between agencies to better assist residents and businesses during and following emergencies. Establish interoperable communications.	Obstacles were out of date facilities, however the City has spent \$48,000 in Police renovations and completed a new fire station communications office	Administration and Public Works	City, County, State	Homeland Security, County & Local Governing Agency	\$10,000	Coordination and clear and efficient communications between agencies increases the capabilities to protect and rescue, increases safety, and reduces the risk of mistakes due to miscommunications.	Three Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Tipton-17	Warning Systems	Improve city cable TV interrupt warning system and implement telephone interrupt system such as Reverse 911.	Employee training. Switching of responsible program administrators.	City Administrator	County, State	HMGP, PDM, County & Local Governing Agency	None	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Ongoing
Tipton-18	Weather Radios	Conduct an inventory of weather radios at schools and other critical facilities and provide new radios as needed.	None Identified	Police/Fire Department	None Identified	HMGP, PDM, County & Local Governing Agency	\$50 per radio	Reduces the risk of death/injury associated with severe weather conditions by communication.	Ongoing
West Branch-01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	Limited Staffing	Police Department	Administration	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
West Branch-02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	Funding	Police Department/Fire Department/Utility	Administration	HMGP, CIP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
West Branch-03	Power, Service, Electrical, and Water Distribution Lines	Communities can work with their local Power CO OP District or Electricity Department to identify vulnerable transmission and distribution lines and plan to bury lines underground, upgrade, or retrofit existing structures to be less vulnerable to storm events. Electrical utilities shall be required to use underground construction methods where possible for future installation of power lines. Rural Water Districts can work with their County to identify vulnerable distribution lines near river crossings or creek beds and plan to place lines underground to reduce vulnerability from storm events and erosion.	Funding, Property Access, Financial status and goals of Alliant Energy	City of West Branch Utilities	Alliant Energy	HMGP, PDM, Power Districts, Rural Water Districts	\$50,000 to \$70,000 (per mile for electrical)	To protect the power and water infrastructure and prevent lines from coming down or being washed out during storm events.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
West Branch-04	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	Funding, Property Access, Financial status and goals of Alliant Energy	City Administrator/City Council	West Branch Community Schools, Fire Department, Police Department, Hames Homes	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
West Branch-06	Stormwater System and Drainage Improvements	<p>Larger communities generally utilize underground stormwater systems comprised of pipes and inlets to convey runoff. Undersized systems can contribute to localized flooding. Stormwater system improvements may include pipe upsizing and additional inlets. Smaller communities may utilize stormwater systems comprised of ditches culverts, or drainage ponds to convey runoff. Drainage improvements may include ditch upsizing, ditch cleanout and culvert improvements. Retention and detention facilities may also be implemented to decrease runoff rates while also decreasing the need for other stormwater system improvements.</p> <p>Bridges typically serve as flow restrictions along streams and rivers. Cleanout and reshaping of channel segments at bridge crossings can increase conveyance, reducing the potential for flooding. Replacement or modification of bridges and other flow restrictions may be necessary to provide greater capacity, maintain or improve a structural integrity during flood events, and eliminate flooding threats and damages.</p> <p>Flood protection such as armoring structures downstream.</p>	Funding, Property Access	City Administrator/City Council	City of West Branch Utilities	HMGP, DCBG, County & Local Governing Agency	\$10,000 to \$100,000	These improvements can serve to more effectively convey runoff within cities and towns, preventing interior localized flooding. May also reduce the risk of illness / disease by eliminating standing water.	Five Years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
West Branch-07	Streambank Stabilization / Grade Control Structures / Channel Improvements	Stream bank / bed degradation can occur along many rivers and creeks. Stabilization improvements including rock rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. Grade control structures include sheet-pile weirs, rock-weirs, ponds, road dams, etc. can be implemented and improved to maintain the channel bed. Channel stabilization can protect structures, increase conveyance and provide flooding benefits. Flood protection for critical and/or highly vulnerable facilities, areas, populations, and infrastructure are key.	Funding, Property Access	City Administrator/City Council	City of West Branch Utilities	USACE, PDM, HMGP, County & Local Governing Agency	\$50,000 to \$100,000+	Stream bed/grade stabilization improvements can serve to more effectively protect structures, increase conveyance, prevent down cutting, and provide flooding benefits.	Three to five years
West Branch-08	Drainage Study / Stormwater Master Plan	Preliminary drainage studies and assessments can be conducted to identify and prioritize design improvements to address site specific localized flooding drainage issues to reduce and/or alleviate flooding. Stormwater master plans can be conducted to perform community-wide stormwater evaluation. Identifying multiple problem areas and potential drainage improvements.	Funding, Property Access	City Administrator/City Council	City of West Branch Utilities	CDBG, County & Local Governing Agency	\$10,000 to \$100,000+	Proactive steps to identify all potential problems/issues can lead to effectively addressing the improvements and prioritizing the projects to improve conditions. These improvements can serve to more effectively convey runoff within jurisdictions, preventing interior localized flooding resulting in damages. This ensures that the most beneficial projects are done first and could possibly eliminate the need for others.	One to three years
West Branch-09	Flood-Prone Property Acquisition	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally, this can provide flood insurance benefits to those communities within the NFIP. Repetitive loss structures are typically highest priority.	Funding, Willingness of Property Sales	City Administrator/City Council	City of West Branch Utilities	HMGP, PDM, CDBG, USACE, FMA	Varies	Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. Additionally this can provide flood insurance benefits to those communities within the NFIP. Communities must be in good standing with the NFIP in order to be eligible for HMGP.	One to two years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
West Branch-10	Regulation Enforcements and Updates	Continue to enforce local floodplain management regulations for structures located in the 100-year floodplain. Strict enforcement of the type of development and elevations of structures should be considered through issuance of building permits by any community or County. Continue education of Building Inspectors or Certified Floodplain Managers. Encourage building regulations for storm-resistant structures.	Funding, Willingness of Property Owners	City Administrator/City Council	City of West Branch Utilities	HMGP, CDBG	\$4,000+	Ensures that no new structures built will be vulnerable to flooding. Reducing damages and health risks associated with flooding.	Ongoing
West Branch-11	Maintain good standing in National Flood Insurance Program (NFIP)	Maintain good standing with the National Flood Insurance Program (NFIP) including floodplain management practices/requirements and regulation enforcements and updates	Communication	City Administrator/City Council	City of West Branch Utilities	N/A	N/A	Enable property owners to purchase insurance protection against flood losses. Good standing enables participants to apply for PDM and HMGP cost-share	Ongoing
West Branch-12	Floodplain Management	Continue to improve floodplain management practices such as adoption and enforcement of floodplain management requirements (regulation of construction in SFHA, floodplain identification and mapping (local requests for map updates), description of community assistance and monitoring activities, explanation for failure to participate in the NFIP, Community Rating System (CRS), and participation in FEMA's Cooperating Technical Partners Program (CTP) to increase local involvement in the flood mapping process.	Communication	City Administrator/City Council	City of West Branch Utilities	N/A	N/A	Continue compliance with the NFIP. Good standing enables participants to apply for PDM and HMGP cost share.	Ongoing
West Branch-14	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	Funding for all partners	City Administrator/City Council	Community Schools, National Park Service, Nursing Home.	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
West Branch-15	Civil Service Improvements	Improve emergency rescue and response equipment and fatalities by providing additional, or updating existing emergency response equipment. This could include fire equipment, ATVs, water tanks/trucks, snow removal equipment, pumps, etc. This would also include developing backup systems for emergency vehicles identifying and training additional personnel for emergency response or continuing educational opportunities for current personnel.	Funding	Fire Department & Police Department	Administration, Township Trustees, 911 Board	PDM, IA HSEMD, Governing County and Local Governing Agency	\$5,000 to \$400,000 per vehicle, varies depending on what equipment is needed.	Having appropriate and up to date equipment along with adequately trained personnel increases the safety and reduces the risk of damage.	Ongoing
West Branch-16	Alert / Warning Sirens	Perform an evaluation of existing alert sirens in order to determine sirens which should be replaced or upgraded. Install new sirens where lacking remote activation. Explore options to activate sirens by Cedar County Dispatch with the ability for the Fire Department to override, if necessary.	Funding	Fire Department	Administration	HMGP, PDM, County & Local Governing Agency	\$15,000+	Reduces the risk of death/injury associated with severe weather; promoting awareness and ensures people take shelter when needed.	Three to five years
West Branch-19	Relocate Police/Fire Station out of the floodway	Seek funds that can move the building out of a flood	Funding	Police Department	Administration	HMGP, PDM, County & Local Governing Agency	\$500,00	The West Branch Fire Department and the West Branch Police Department building and facilities are in a flood way. Seek funds that can move the building out of a flood way.	Ongoing
Bennett Schools -01	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	Superintendent	None Identified	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Bennett Schools -02	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, municipal wells, lift stations, and other critical facilities and shelters	None Identified	Superintendent	None Identified	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing
Bennett Schools -03	Storm Shelters / Safe Rooms	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	Superintendent	None Identified	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
Bennett Schools -04	Stabilize / Anchor Fertilizer, Fuel and Propane Tanks and Secure At-Risk Development	Anchor fuel tanks to prevent movement. If left unanchored, tanks could present a major threat to property and safety in a tornado or high wind event. "Tie downs" can be used to anchor manufactured homes to their pads or concrete foundations.	None Identified	Superintendent	None Identified	HMGP, PDM	\$1,000+	Limits the chance of fuel/chemical spills. Reduce chance that propane tanks and other items become missiles during tornado events.	Ongoing
Bennett Schools -05	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	None Identified	Superintendent	None Identified	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
Durant Schools-01	Backup Generators	Purchase and install generators in school buildings as backup power source during extreme weather events or other outage	Funding	School Board	Iowa Homeland Security & Emergency Management, FEMA	HMGP, PDM, County & Local Governing Agency	\$15,000 per generator	Avoid disruption, including loss of heat, as a result of power outage	2 years
Durant Schools-02	Construct Safe Rooms	Design and construct safe rooms for faculty and staff in school buildings	Funding	School Board	Iowa Homeland Security & Emergency Management, FEMA	HMGP, PDM, County & Local Governing Agency	\$1,000,000 per safe room	Provide life safety to students and staff during tornado events	4 years
North Cedar Schools-01	Sloping creek banks in Lowden to prevent washouts	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	School Board	None Identified	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
North Cedar Schools-02	Public Awareness / Education	Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. In addition, educate citizens on erosion control and water conservation methods.	None Identified	School Board	None Identified	HMGP, PDM	\$500+	Public awareness reduces the risk of property loss and damage, injury and death. It increases knowledge on emergency procedures, facilities, conservation, and is key to preparedness.	Ongoing
North Cedar Schools-03	Backup Generators	Provide a portable or stationary source of backup power to redundant power supplies, critical facilities and shelters	None Identified	School Board	None Identified	HMGP	\$15,000 - \$30,000 per generator	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	Ongoing

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
North Cedar Schools-04	Storm Shelter/Safe Room	Assess, design and construct fully supplied safe rooms in highly vulnerable urban and rural areas such as mobile home parks, campgrounds, schools, and other such areas throughout the planning area. Assess the adequacy of current public buildings to be used as safe rooms. Construct safe rooms in areas of greatest need, either as new construction or retrofits.	None Identified	School Board	None Identified	HMGP, PDM	\$200-\$300/ sf stand alone; \$150-\$200/sf addition/retrofit	Reduce the risk of death or injury in areas vulnerable to tornadoes, severe thunderstorms, and other hazards	Ongoing
North Cedar Schools-05	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	School Board	None Identified	HMGP	N/A	Improve the overall quality and information found in this plan.	Five Years
Tipton Schools-01	Backup Generators	Install backup generators	None Identified	School Principal's Office; Superintendent's Office	Local Jurisdictions, County Emergency Management	HMGP	\$15,000 - \$30,000 per generator	Improve the overall quality and information found in this plan.	3-5 years
Tipton Schools-02	Safe Room	Construct safe rooms in accordance with FEMA 361 Design and Construction Guidance for Community Shelters	None Identified	School Principal's Office; Superintendent's Office	Local Jurisdictions, County Emergency Management	HMGP	\$275.00 per sq foot. Based on population of building at time of application . 300K to 500K	Reduce the danger to human life/health by keeping utilities operating. Reduce the economic downtime associated with utility loss.	5 plus years
Tipton Schools-03	Obtain Missing Data	Obtain necessary data to improve vulnerability assessments when updating this plan	None Identified	School Principal's Office; Superintendent's Office	Local Jurisdictions, County Emergency Management	HMGP	N/A	Improve the overall quality and information found in this plan.	Ongoing
West Branch Schools-01	Back up Generators	Purchase and Retrofitting of existing facilities to allow for generators to work (Kick on)	30,000	School	School, Aliant Energy	Unknown	30K	Improve school facility safety and allow schools to function as centers for community (warming centers) if power out	3-5 years
West Branch Schools-02	Storms Shelters/ Safe Rooms	Would be part of long-term Master School Facilities Improvement Plans already developed	500,000	School, Fed Gov, County, City	School Boards, City Councils	FEMA	500K	Improve school facility safety and community use	5-10 years

Action ID	Action Title	Ideas for Implementation: How can the problem be solved?	Obstacles	Responsible Office	Partners	Potential Funding Source	Cost Estimate	Benefits: (Describe Losses Avoided)	Timeline
West Branch Schools-03	Pipeline Break Disaster: Schools have plan for this in crisis management documents. (Students, staff walk in direction of wind to avoid fallout (or) if possible bused	Ongoing coordination with Pipeline Companies and Emergency Management - mock pipeline break disaster drill	10,000 estimate for several years of disaster training and mock disaster runs	Schools, City, County, State	Emergency Response Team and Responders	Unknown	10K	Practice in case of possible disaster	1-3 years

Acronyms: CIP = Capital Improvement Plan; HMGP = Hazard Mitigation Grant Program; PDM = Pre-disaster Mitigation grant; FMA = Flood Mitigation Assistance; CDBG = Community Development Block Grant; TBD = To Be Determined