



1 INTRODUCTION AND PLANNING PROCESS

1 Introduction and Planning Process	1.1
1.1 Purpose.....	1.1
1.2 Background and Scope.....	1.1
1.3 Plan Organization.....	1.4
1.4 Planning Process	1.4
1.4.1 Multi-Jurisdictional Participation.....	1.5
1.4.2 The Planning Steps.....	1.6

1.1 Purpose

Poweshiek County and the participating cities, and public school districts prepared this Multi-jurisdictional Hazard Mitigation Plan update to guide hazard mitigation planning to better protect the people and property of the planning area from the effects of hazard events.

This plan demonstrates the jurisdictions’ commitments to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. This plan was also developed to make Poweshiek County and the participating jurisdictions eligible for certain federal grant programs; specifically, the Federal Emergency Management Agency’s (FEMA) Hazard Mitigation Assistance (HMA) grants such as the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program.

1.2 Background and Scope

Each year in the United States, disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated.

Hazard mitigation is defined by FEMA as “any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event.” The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. On average, each dollar spent on mitigation saves society an average of \$4 in avoided future losses in addition to saving lives and preventing injuries (National Institute of Building Science Multi-Hazard Mitigation Council 2005).

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and

appropriate strategies to lessen impacts are determined, prioritized, and implemented. Poweshiek County and the participating incorporated cities and public school districts that participated in this plan update developed a Multi-jurisdictional Hazard Mitigation Plan that was approved by FEMA in February 2016 (hereafter referred to as the *2011 Poweshiek County Hazard Mitigation Plan*). Therefore, this current planning effort serves to update the previous plan.

This plan documents the hazard mitigation planning process undertaken by the Poweshiek County Hazard Mitigation Planning Committee (HMPC). It identifies relevant hazards and vulnerabilities in the planning area and sets forth an updated mitigation strategy to decrease vulnerability and increase resiliency and sustainability in Poweshiek County.

The Poweshiek County Multi-jurisdictional Hazard Mitigation Plan is a multi-jurisdictional plan that geographically covers the participating jurisdictions within Poweshiek County's boundaries (hereinafter referred to as the planning area). The following jurisdictions officially participated in the planning process:

- Unincorporated Poweshiek County
- City of Brooklyn
- City of Deep River
- City of Grinnell
- City of Hartwick
- City of Malcom
- City of Montezuma
- City of Searsboro
- Brooklyn-Guernsey-Malcom School District
- Grinnell-Newburg School District
- Montezuma School District

The City of Guernsey was invited to participate in the plan update. However, City officials did not respond to meeting invitations or requests for data and draft reviews. When the plan is updated during the next 5-year update cycle, the City of Guernsey will again be contacted for participation.

Bi-county Cities

There are two cities within Poweshiek County that have portions of their city limits in adjacent counties: Barnes City and the City of Victor. Barnes City is an official city of Mahaska County to the south, and the City of Victor is an official city of Iowa County to the east. To provide a comprehensive analysis, the Risk Assessment includes the incorporated areas of these cities that are located within the Poweshiek County boundary. Although these cities are not official participants of the *Poweshiek County Multi-jurisdictional Hazard Mitigation Plan*, they are stakeholders in the planning process and as such, were invited to planning meetings and to comment on plan drafts.

This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the *Federal Register* on February 26, 2002, (44 CFR §201.6) and finalized on

October 31, 2007. (Hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act.) While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288).

Information in this plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. The Poweshiek County planning area has been affected by hazards in the past and the participating jurisdictions are therefore committed to reducing future impacts from hazard events and becoming eligible for mitigation-related federal funding.

1.3 Plan Organization

This Poweshiek County Multi-jurisdictional Hazard Mitigation Plan update is organized as follows:

- Executive Summary, Special Thanks and Acknowledgements, Table of Contents, Prerequisites
- Chapter 1: Introduction and Planning Process
- Chapter 2: Planning Area Profile and Capabilities
- Chapter 3: Risk Assessment
- Chapter 4: Mitigation Strategy
- Chapter 5: Plan Implementation and Maintenance
- Appendices

This is the same general format that was used for the 2011 Multi-jurisdictional Poweshiek County Hazard Mitigation Plan except that the Executive Summary was titled “Introduction” as Chapter 1. In addition, the previous plan included a one-page Chapter 7 titled “Recommendations” that included three recommendations made by the previous plan authors. These recommendations have been taken into consideration during the update of the current plan’s mitigation strategy update.

1.4 Planning Process

44 CFR Requirement 201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

In May 2015, Poweshiek County contracted with Amec Foster Wheeler Environment & Infrastructure, Inc. to facilitate the update of the multi-jurisdictional, local hazard mitigation plan. Amec Foster Wheeler’s role was to:

- Assist in establishing the Hazard Mitigation Planning Committee (HMPC) as defined by the Disaster Mitigation Act (DMA),
- Ensure the updated plan meets the DMA requirements as established by federal regulations and following FEMA’s planning guidance,
- Facilitate the entire planning process,
- Identify the data requirements that HMPC participants could provide and conduct the research and documentation necessary to augment that data,
- Assist in facilitating the public input process,
- Produce the draft and final plan update documents, and
- Coordinate the Iowa Homeland Security and Emergency Management Division and FEMA plan reviews.

1.4.1 Multi-Jurisdictional Participation

44 CFR Requirement §201.6(a)(3): Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.

Poweshiek County Emergency Management invited the incorporated cities, public school districts, and various other stakeholders in mitigation planning (identified in Appendix B) to participate in the Poweshiek County Multi-jurisdictional Hazard Mitigation Plan update process. The jurisdictions that elected to participate in this plan are listed above in section 1.2. The DMA requires that each jurisdiction that participates in the planning process must officially adopt the multi-jurisdictional hazard mitigation plan. Each jurisdiction that chose to participate in the planning process and development of the plan was required to meet plan participation requirements defined at the first planning meeting, which includes the following:

- Designate a representative to serve on the HMPC;
- Participate in at least one of the two HMPC planning meetings by either direct representation or authorized representation;
- Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact their jurisdiction;
- Provide data to describe current capabilities;
- Develop/update mitigation actions (at least one) specific to each jurisdiction;
- Provide comments on plan drafts as requested;
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan; and
- Formally adopt the mitigation plan.

All of the jurisdictions listed as official participants in this plan met all of these participation requirements. **Table 1.1** shows the representation of each participating jurisdiction at the planning meetings, provision of Data Collection Guides, and update/development of mitigation actions. Sign-in sheets are included in Appendix B: Planning Process Documentation.

Table 1.1. Jurisdictional Participation in Planning Process

Jurisdiction	Kick-off Planning Meeting	Planning Meeting #2	Data Collection Guide	Update/Develop Mitigation Actions
Poweshiek County	X	X	X	X
City of Brooklyn	X		X	X
City of Deep River		X	X	X
City of Grinnell	X	X	X	X
City of Hartwick	X		X	X
City of Malcom	X	X	X	X
City of Montezuma	X	X	X	X
City of Searsboro	X	X	X	X
Brooklyn-Guernsey-Malcom School District		X	X	X
Grinnell-Newburg School District	X		X	X
Montezuma School District	X	X	X	X

1.4.2 The Planning Steps

Amec Foster Wheeler and Poweshiek County worked together to establish the framework and process for this planning effort using FEMA’s *Local Mitigation Planning Handbook* (March 2013). The plan update was completed utilizing the 9-task approach within a broad four-phase process:

- 1) Organize resources,
- 2) Assess risks,
- 3) Develop the mitigation plan, and
- 4) Implement the plan and monitor progress.

Into this process, Amec Foster Wheeler integrated a detailed 10-step planning process adapted from FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance programs. Thus, the process used for this plan meets the funding eligibility requirements of the Hazard Mitigation Assistance grants and Community Rating System. **Table 1.2** shows how the process followed fits into FEMA’s original four-phase DMA process as well as the revised Nine Task Process outlined in the 2013 *Local Mitigation Planning Handbook* and the 10-step CRS process.

Table 1.2. Mitigation Planning Process Used to Develop the Poweshiek County Multijurisdictional Local Hazard Mitigation Plan

Phase	Community Rating System (CRS) Planning Steps (Activity 510)	Local Mitigation Planning Handbook Tasks (44 CFR Part 201)
Phase I	Step 1. Organize	Task 1: Determine the Planning Area and Resources Task 2: Build the Planning Team 44 CFR 201.6(c)(1)
	Step 2. Involve the public	Task 3: Create an Outreach Strategy y 44 CFR 201.6(b)(1)
	Step 3. Coordinate	Task 4: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Phase II	Step 4. Assess the hazard	Task 5: Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
	Step 5. Assess the problem	
Phase III	Step 6. Set goals	Task 6: Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i); 44 CFR 201.6(c)(3)(ii); and 44 CFR 201.6(c)(3)(iii)
	Step 7. Review possible activities	
	Step 8. Draft an action plan	
Phase IV	Step 9. Adopt the plan	Task 8: Review and Adopt the Plan
	Step 10. Implement, evaluate, revise	Task 7: Keep the Plan Current
		Task 9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

Phase I Organize Resources

Step 1: Organize the Planning Team (Handbook Tasks 1 & 2)

The planning process resulting in the preparation of this plan document officially began with a coordination conference call between Poweshiek County Emergency Management and Amec Foster Wheeler on May 22, 2013. The purpose of this meeting was to determine the

jurisdictions and other stakeholders that would be invited to be participants of the HMPC (Step 1), set tentative planning meeting dates, identify GIS needs and resources, provide recommendations regarding the hazards to be included in the plan update, discuss options for the flood risk assessment methodology, develop an initial public participation strategy, and discuss the plan update format.

In addition to the participating jurisdictions, a wide range of stakeholder agencies and organizations were invited to planning meetings and to comment on plan drafts (see Appendix B). The stakeholders that that participated in the planning meetings included the following:

- Grinnell Regional Medical Center
- Mayflower Community Nursing Home

After the coordination conference call, a formal Kick-off planning meeting was held on June 23, 2015 followed by a second planning meeting held on September 22. A complete list of all representatives of the agencies and organizations that participated on the Poweshiek County HMPC is provided in Appendix B.

The HMPC communicated during the planning process with a combination of face-to-face meetings, phone interviews, and email correspondence. The meeting schedule and topics are listed in **Table 1.3**. The meeting minutes for each of the meetings are included in Appendix B.

Table 1.3. Schedule of HMPC Meetings

Meeting	Topic	Date
Initial Coordination Meeting (conference call)	General overview of planning process/requirements and schedule.	May 22, 2015
Kick-off Meeting	Introduction to DMA, the planning process, hazard identification and public input strategy. Distribution of data collection guide to jurisdictions. Preliminary hazard ranking results. Update plan goals. Distribute previous mitigation actions for status updates.	June 23, 2015
Planning Meeting #2	Review of draft Risk Assessment, Distribution of critical facility inventories for jurisdictions to validate/correct. Development of new mitigation actions, mitigation action planning and prioritization. Determine process to monitor, evaluate, and update plan.	September 22, 2015

During the kick-off meeting Amec Foster Wheeler presented information on the scope and purpose of the plan, participation requirements of HMPC members, and the proposed project work plan and schedule. Plans for public involvement (Step 2) and coordination with other agencies and departments (Step 3) were discussed. Amec Foster Wheeler also introduced hazard identification requirements and data needs. The HMPC discussed potential hazards as well as past events and impacts and refined the identified hazards to be relevant to Poweshiek County. The hazard ranking methodology utilized by Iowa Homeland Security and Emergency

Management Division in the State Hazard Mitigation Plan was introduced and the HMPC made preliminary determinations of probability, magnitude, warning time, and duration for each hazard identified.

Participants were given the Amec Foster Wheeler Data Collection Guide to facilitate the collection of information needed to support the plan, such as data on historic hazard events, values at risk, and current capabilities. Each participating jurisdiction completed and returned the worksheets in the Data Collection Guide to Amec Foster Wheeler. Amec Foster Wheeler integrated this information into the plan, supporting the development of Chapters 2 and 3. The plan goals were also reviewed and revised at the kick-off meeting and the previous actions from the *2011 Poweshiek County Multi-jurisdictional Hazard Mitigation Plan* were distributed for the jurisdictions to begin the process of updating the status of each action.

Step 2: Plan for Public Involvement (Handbook Task 3)

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

At the kick-off meeting, the HMPC discussed options for soliciting public input on the mitigation plan. To provide an opportunity for the public to comment during the drafting stage, the committee determined that the most effective method would be dissemination of a survey. The survey was announced in an article published in the *Grinnell Herald*. Poweshiek County Emergency Management also posted information about the plan update and the public survey on their website (See **Figure 1.1**).

Figure 1.1. Newspaper Article in the *Grinnell Herald*, July 13, 2015 and Poweshiek County Emergency Management Website Screenshot, July 10, 2015

Poweshiek County planning committee seeks public input

A planning committee composed of representatives from Poweshiek County and its incorporated cities and public school districts is currently updating the comprehensive Poweshiek County Multi-jurisdictional Hazard Mitigation Plan. The Poweshiek County Hazard Mitigation Planning Committee is seeking public input for the plan update.

A summary of the plan update effort underway and a questionnaire to capture public opinion and comments are available online at <http://www.surveypoweshiek.com/Poweshiek>. Hard copies of the questionnaire are available at the city offices of the incorporated cities in the county during normal operating hours. The survey will be available until Oct. 31.

The purpose of this outreach effort is to provide information to the public on the plan that is being updated as well and to gain public input.

The plan update will address a comprehensive list of hazards, ranging from severe winter storms and flooding to drought and tornadoes, and will assess the likely impacts of these hazards on communities and school districts in Poweshiek County. This effort will also update current strategies and identify additional strategies to reduce the vulnerability of people and property in

the participating jurisdictions from the impacts of hazards as well as maintaining eligibility for participating jurisdictions for mitigation funding programs administered by the Federal Emergency Management Agency (FEMA).

Poweshiek County Emergency Management has taken the lead in coordinating the update of this plan under the direction of Emergency Management Coordinator Trisha Rooda. Rooda has drawn on the expertise of consultants with Amec Foster Wheeler Environment & Infrastructure, Inc., a firm that specializes in hazard mitigation and emergency management.

Feedback from the public will be incorporated into the draft plan, which will be available for public review and comment in December of 2015. Upon approval by the Iowa Homeland Security and Emergency Management Division and FEMA, the plan will be presented to the Poweshiek County Board of Supervisors and to city councils and school boards of each participating jurisdiction for formal adoption.

For more information on this project, contact the Poweshiek County Emergency Management Agency at 641-623-4357 or emag@poweshiekcoaheriff.com.



Home About Us LEPC Alert Area News & Updates Poweshiek County

Poweshiek County Planning Committee Seeks Public Input

Posted on July 8, 2015

Poweshiek County, IA— A planning committee composed of representatives from Poweshiek County, the incorporated cities and public school districts is currently updating the comprehensive Poweshiek County Multi-jurisdictional Hazard Mitigation Plan. The Poweshiek County Hazard Mitigation Planning Committee is seeking public input for the plan update. A summary of the plan update effort underway, as well as a questionnaire to capture public opinion and comments, is available online at <http://www.surveypoweshiek.com/Poweshiek>. Hard copies of the questionnaire will also be available at City Halls of the incorporated cities in the county during normal operating hours. The survey will be available until October 31, 2015. The purpose of this outreach effort is to provide information to the public on the plan that is being updated as well as gain public input.

The plan update will address a comprehensive list of hazards—ranging from severe winter storms and flooding to drought and tornadoes—and will assess the likely impacts of these hazards on communities and school districts in Poweshiek County. This effort will also update current strategies and identify additional strategies to reduce the vulnerability of people and property in the participating jurisdictions from the impacts of hazards as well as maintain eligibility for participating jurisdictions for mitigation funding programs administered by the Federal Emergency Management Agency (FEMA).

Poweshiek County Emergency Management has taken the lead in coordinating the update of this plan under the direction of Emergency Management Coordinator, Trisha Rooda. Ms. Rooda has drawn on the expertise of consultants with Amec Foster Wheeler Environment & Infrastructure, Inc., a firm that specializes in hazard mitigation and emergency management.

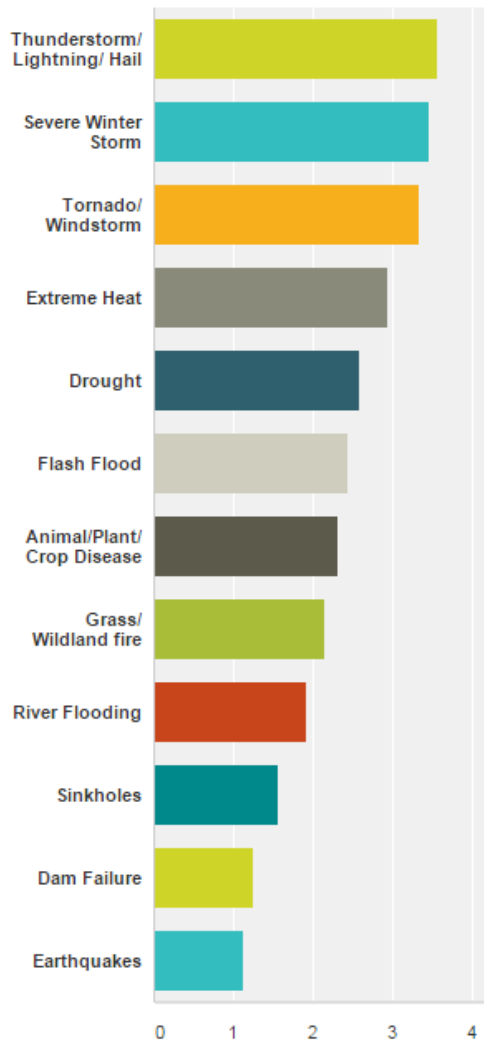
Feedback from the public will be incorporated into the draft plan, which will be available for public review and comment in December 2015. Upon approval by the Iowa Homeland Security and Emergency Management Division and FEMA, the plan will be presented to the Poweshiek County Board of Supervisors, City Councils, and School Boards of each participating jurisdiction for formal adoption. For more information on this project, contact the Poweshiek County Emergency Management Agency at 641-623-4357 or via e-mail at emag@poweshiekcoaheriff.com.

The public survey was developed specific to the Poweshiek County Mitigation Plan and provided a brief plan summary as well as a questionnaire to capture public and stakeholder input. The survey was made available online as well as in hard copy at each City Hall. A copy of the survey is provided in Appendix B.

In addition, to notification through the newspaper article, committee members distributed the survey to members of the public and key stakeholders in their own jurisdiction.

In all, 85 surveys were completed. The survey asked the public and stakeholders to indicate their opinion on the likelihood for each hazard to impact their jurisdiction. They were asked to rate the probability of each hazard profiled in this plan as 1-unlikely, 2-occasional, 3-likely, and 4-highly likely. The summary results of this question are provided in **Figure 1.2**.

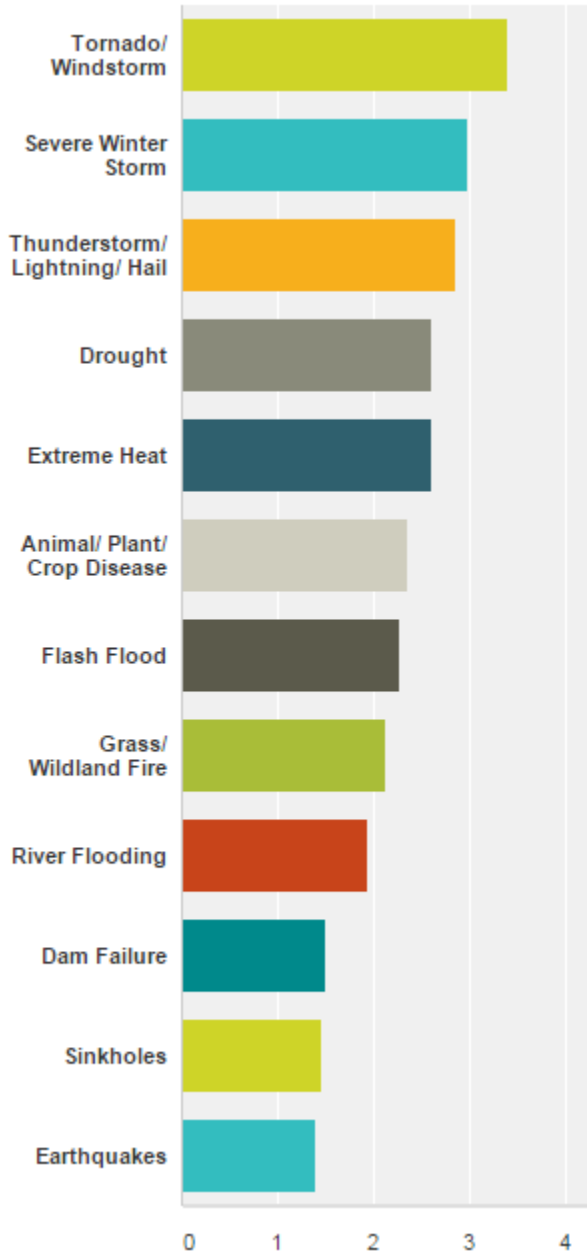
Figure 1.2. Survey Results—Probability of Hazards



Source: SurveyMonkey Results

The survey also asked the public and stakeholders to indicate their opinion on the potential magnitude of each hazard on their jurisdiction. They were asked to rate the probability of each hazard profiled in this plan as 1-negligible, 2-limited, 3-critical, and 4-catastrophic. The summary results of this question are provided in **Figure 1.3**.

Figure 1.3. Survey Results—Magnitude of Hazards



Source: SurveyMonkey Results

In the survey, the public was also asked to review 11 types of mitigation actions considered by the Iowa Homeland Security and Emergency Management Division for FEMA funding. The Poweshiek County HMPC also considered these types of projects in the Poweshiek County Multi-jurisdictional Hazard Mitigation Plan. The survey asked the public to place a check next to the mitigation project types that they felt could benefit their community. **Figure 1.4** provides the compiled results of this question.

Figure 1.4. Survey Results—Types of Projects

Answer Choices	Responses
Structural Retrofitting of Existing Buildings to Add a Tornado Saferoom	72.29% 60
New Tornado Safe Room Construction	68.67% 57
Electrical Utilities Infrastructure Retrofit	57.83% 48
Minor Localized Flood Reduction Projects (stormwater management or other localized flood control projects)	48.19% 40
Soil Erosion Stabilization	46.99% 39
Non-structural Retrofitting of Existing Buildings and Facilities from Wind Damage	40.96% 34
Dry Floodproofing of Flood-prone Structures	21.69% 18
Flood-prone Structure Elevation	20.48% 17
Flood-prone Property Acquisition & Structure Demolition or Relocation	19.28% 16
Wildfire Mitigation	13.25% 11

Source: SurveyMonkey Results

The public was also asked to comment on any other issues that the Poweshiek County HMPC should consider in developing a strategy to reduce future losses caused by natural hazard events. Some of the additional issues the public indicated in need of attention are provided below:

“Safe rooms at Nursing Home facilities.”

“If the county could somehow figure out a way to train the population on storm spotting or what to look for in the severity of a storm.” There are trainings once a year by the national weather service to be an actual storm spotter. I believe if Poweshiek County could put an informal program together to assist with peoples understanding of what to look for in a storm. Maybe that would help to mitigate wide spread panic when a severe storm is headed for them and the cable or satellite TV goes out.”

“Perhaps more, and frequent, public education on these subjects.” Multiple venues for disseminating information, other than just newspapers. E.g. social media, County text alerts, fliers at convenience stores and grocery stores.”

The public was also given an opportunity to provide input on the final draft of the complete plan. The entire plan draft was made available on the County’s website as a PDF document. In addition, a hard copy of the final draft plan was made available at the County Courthouse.

Poweshiek County announced the availability of the entire final draft plan and the two-week final public comment period in the *Grinnell Herald* as well as the County Emergency Management website. Copies of the newspaper announcement and website screenshot are provided in Appendix B. The final public comment period was from December 2-15, 2015.

The HMPC invited other targeted stakeholders to comment on the draft plan via an e-mail letter, which is described in greater detail in Step 3: Coordinate with Other Departments and Agencies. Minor comments were received and incorporated.

Step 3: Coordinate with Other Departments and Agencies and Incorporate Existing Information (Handbook Task 3)

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process. (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

There are numerous organizations whose goals and interests interface with hazard mitigation in Poweshiek County. Coordination with these organizations and other community planning efforts is vital to the success of this plan. Poweshiek County invited neighboring counties, other local, state, and federal departments and agencies as well as institutions of higher learning to the planning meetings to learn about the hazard mitigation plan update initiative. In addition, the HMPC developed a list of additional stakeholders involved in hazard mitigation activities, to invite by e-mail letter to review and comment on the draft of the Poweshiek County Multi-jurisdictional Hazard Mitigation Plan prior to submittal to the State and FEMA. Those agencies were invited to meetings and/or comment on the plan draft included emergency management officials of adjacent counties, members of academic organizations such as the University of Iowa Flood Center, various state agencies such as the Iowa Department of Natural Resources, as well as various federal agencies, including FEMA. Appendix B includes a complete list of those organizations invited to participate in the planning meetings as well as a copy of the e-mail letter that was sent providing a link to the draft plan during the final public comment period.

Integration of Other Data, Reports, Studies, and Plans

In addition, input was solicited from many other agencies and organizations that provided information but were not able to attend planning meetings. As part of the coordination with other agencies, the HMPC collected and reviewed existing technical data, reports, and plans. These included:

- Iowa Hazard Mitigation Plan (September 2013);
- Poweshiek County Hazard Mitigation Plan (February 2011);
- National Flood Insurance Program's Community Information System Reports;
- Digital Flood Insurance Rate Map for all of Poweshiek County;

-
- Iowa Department of Natural Resources, Dam Safety Program Inventory of Dams for Poweshiek County;
 - Available Dam Inundation maps from the Iowa Department of Natural Resources Dam Safety Program for High and Significant Hazard Dams;
 - Fire Incidents from the Iowa Fire Marshal's Office as reported to the National Fire Incident Reporting System;
 - Wildland/Urban Interface and Intermix areas from the SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin;
 - Various local plans such as Comprehensive Plans, Economic Development Plans, Capital Improvement Plans, etc. For a complete list of local plans that were reviewed and incorporated, see Chapter 2;
 - US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics;

This information was used in the development of the hazard identification, vulnerability assessment, and capability assessment and in the formation of goals, objectives, and mitigation actions. These sources, as well as additional sources of information are documented throughout the plan and in Appendix A, References.

Phase 2 Assess Risk (Handbook Task 5)

Step 4: Assess the Hazard: Identify and Profile Hazards

Amec Foster Wheeler assisted the HMPC in a process to identify the hazards that have impacted or could impact communities in Poweshiek County. At the kick-off meeting, the HMPC examined the history of disaster declarations in Poweshiek County, the list of hazards considered in the 2013 Iowa State Hazard Mitigation Plan, and the hazards identified in the previous hazard mitigation plan. The committee then worked through this list of all potential hazards that could affect the planning area. They discussed past hazard events, types of damage, and where additional information might be found. The committee identified 12 natural hazards that have the potential to impact the planning area. Additional information on the hazard identification process and which hazards were identified for each jurisdiction is provided in Chapter 3.

During the kick-off meeting, the HMPC refined the list of hazards, discussed past events and impacts and came to consensus on the preliminary probability, magnitude, warning time, and duration levels on a county-wide basis to contribute to the hazard ranking methodology utilized by the State. In addition, each jurisdiction completed a Data Collection Guide, including information on previous hazard events in their community. Utilizing the information from the Data Collection Guides as well as existing plans, studies, reports, and technical information as well as information available through internet research and GIS analysis, a profile was developed for each hazard identified. More information on the methodology and resources used to identify and profile the hazards can be found in Chapter 3.

Step 5: Assess the Problem: Identify Assets and Estimate Losses

Assets for each jurisdiction were identified through a combination of several resources. The Poweshiek County GIS Department provided access to datasets with parcel and building data as well as corporate boundaries. Population data was obtained from the U.S. Census Bureau.

At Meeting #2, the critical facility inventory compiled from data available from the Iowa Department of Natural Resources and HAZUS was provided to each jurisdiction for the facilities that fall within their jurisdictional boundaries for correction and validation. Methodologies and results of the analyses are provided in Chapter 3 and Appendix E.

Additional assets such as historic, cultural, and economic assets as well as specific vulnerable populations and structures were obtained from a variety of sources as described in Chapter 3.

The HMPC also analyzed development since the last plan update and future development trends from data available from the U.S. Census Bureau as well as information obtained from each jurisdiction such as Comprehensive Plans and Future Development Plans as well as information reported on the Data Collection Guides.

After profiling the hazards that could affect Poweshiek County and identifying assets, the HMPC collected information to describe the likely impacts of future hazard events on the participating jurisdictions. For each hazard, there is a discussion regarding future development as well as climate change impacts regarding how vulnerability to that specific hazard might be impacted in the future.

Existing mitigation capabilities were also considered in developing loss estimates. This assessment consisted of identifying the existing mitigation capabilities of participating jurisdictions. This involved collecting information about existing government programs, policies, regulations, ordinances, and plans that mitigate or could be used to mitigate risk from hazards. Participating jurisdictions collected information on their regulatory, personnel, fiscal, and technical capabilities, as well as previous and ongoing mitigation initiatives. This information is included in Chapter 2 Planning Area Profile and Capabilities.

Specific capabilities such as participation in the National Flood Insurance Program as well as placement of storm sirens are incorporated in the vulnerability analysis discussions, where applicable.

Taking into consideration the vulnerability and capability assessments, and where sufficient information was available, a variety of methods was used to estimate losses for each profiled hazard. For geographic hazards such as river flooding, specific assets/areas at risk and loss estimates were determined through GIS analysis. For other hazards such as weather-related hazards, loss estimates were developed based on statistical analysis of historic events. For hazards such as dam failure of state-regulated dams, GIS data was not available to identify specific geographic boundaries at risk. Therefore, the risk assessment provides descriptions of the types of improvements located in approximated risk areas. The methodologies for each loss estimate are described in detail in Chapter 3. Within each hazard section, the text provides details on how the hazard varies by jurisdiction, where applicable. In addition, at the conclusion of each hazard section, a summary table indicates the specific probability, magnitude, warning time, and duration rating of the hazard for each jurisdiction is provided to show how the hazard varies. Where applicable, introductory text preceding the table highlights noted variables.

Results of the preliminary risk assessment were presented at Meeting #2 and the Draft Risk Assessment (Chapter 3) was provided to the HMPC for review and comment. Several

comments, corrections, and suggestions were provided to Amec Foster Wheeler and incorporated into the risk assessment as appropriate.

Phase 3 Develop the Mitigation Plan (Handbook Task 6)

Step 6: Set Goals

Amec Foster Wheeler facilitated a discussion session with the HMPC during the kickoff meeting to review and update goals. Common categories of mitigation goals were presented as well as the 2013 State Hazard Mitigation Plan goals.

This planning effort is an update to an existing hazard mitigation plan. As a result, the goals from the *2011 Poweshiek County Hazard Mitigation Plan* were reviewed.

The revised goals for this plan update are provided below:

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

Step 7: Review Possible Activities

At the kickoff meeting, a handout of previous actions was provided to all jurisdictions with instructions to provide updates for each action. Jurisdictions were encouraged to maintain a focused approach and continue forward only those actions that are aimed at implementing long-term solutions to prevent losses from hazards. The focus of Meeting #2 was to update the mitigation strategy by discussing relevant new actions considered necessary as a result of the updated risk assessment. The HMPC reviewed the following: plan goals, previous actions from the 2011 plan, key issues from the risk assessment, Iowa Emergency Management and Homeland Security Division's HMA funding priorities, public opinion survey results on types of actions desired, and FEMA's *Mitigation Action Ideas* publication.

The group discussed the types of mitigation actions/projects that could be done by the jurisdictions in Poweshiek County. Consideration was given to the analysis results provided in the risk assessment and the anticipated success for each project type. Projects relating to emergency response were discussed, but participants were encouraged to focus on long-term mitigation solutions since response-related mitigation actions occur on a routine basis as requirements of other plans. Complex projects that would necessitate use of large numbers of county resources were also discussed. This opportunity to discuss a broad range of mitigation alternatives allowed the jurisdictions to understand the overall priorities of the committee and to allow for discussion of the types of project most beneficial to each jurisdiction. As part of this discussion, consideration was given to the potential cost of each project in relation to the anticipated future cost savings.

The jurisdictions were also provided instructions for completing the Mitigation Action Plan for each continuing and newly developed action. A modified form of the STAPLEE prioritization tool was also provided to assist jurisdictions in determining the prioritization that should be assigned to each action. Each participating jurisdiction prioritized the projects they submitted by indicating high, moderate, or low local priority. The details from the Action Plan for each

Continuing and New action are provided in Chapter 4. The completed and deleted actions are provided in Appendix C. Chapter 4 provides additional details regarding the process undertaken to refine the mitigation strategy to make Poweshiek County and its jurisdictions more disaster resistant.

Step 8: Draft an Action Plan

A complete draft of the plan was made available online and in hard copy for review and comment by the public, other agencies and interested stakeholders. This review period was from December 2-15, 2015. Methods for inviting interested parties and the public to review and comment on the plan were discussed in Steps 2 and 3, and materials are provided in Appendix B. Comments were integrated into a final draft for submittal to the Iowa Homeland Security and Emergency Management Division and FEMA.

Phase 4 Implement the Plan and Monitor Progress

Step 9: Adopt the Plan (Handbook Task 8)

To secure buy-in and officially implement the plan, the governing bodies of each participating jurisdiction adopted the plan. Scanned copies of resolutions of adoption are included in Appendix D of this plan.

Step 10: Implement, Evaluate, and Revise the Plan (Handbook Tasks 7 & 9)

The HMPC developed and agreed upon an overall strategy for plan implementation and for monitoring and maintaining the plan over time during Meeting #3. This strategy is described in Chapter 5, Plan Maintenance Process.