

To **Story County Hazard Mitigation Planning Committee**
 Through **Keith Morgan, Coordinator**
Story County Emergency Management
 From **Susan Belt and Laurie Bestgen, AMEC Mitigation Planners**
 Tel / E-mail **785-272-6830 / susan.belt@amec.com and laurie.bestgen@amec.com**
 Date **2/14/2013**
 Subject **Minutes from Story County Hazard Mitigation Planning Meeting #2 held on 2/7/2013**

This document is a record of attendance and a summary of the issues discussed during the above meeting, including: a brief review of the purpose of a Hazard Mitigation Plan, the public survey for this effort, participation requirements and the status of each jurisdiction, review/validation of critical facilities to include in the risk assessment, plan update format, sample results of the risk assessment-top 5 hazards, development of mitigation goals, introduction to mitigation actions, and the next steps in this process.

Attendees

First Name	Last Name	Agency/Organization
Lindsey	Beecher	Gilbert Community School District (USD 2466)
Rob	Bowers	Iowa State University
Ryan	Clark	Iowa Department of Natural Resources
Brett	Comegys	City of Collins
Scott	DeYoung	City of Cambridge
Jason	Ellingson	Collins-Maxwell School District (USD 1350)
Marcus	Fricke	City of Maxwell
Dan	Gens	City of Gilbert
Kathy	Hanson	Ames Community School District (USD 225)
Craig	Henry	City of Huxley
Mike	Jensen	City of Story City
Angie	Jewett	Iowa State University
Kenneth	Kling	City of Kelley
Wallace	Loney	City of McCallsburg
Lysle	Macdonald	City of Story City
Michael	Manock	Ballard Community School District (USD 472)
Jodi	Meredith	City of Roland
Keith	Morgan	Story County
Deana	Neuendorf	City of Zearing
Brian	Phillips	City of Ames
Mark	Pote	City of Huxley
Robin	Pruisner	City of McCallsburg
Rick	Sanders	Story County
Doug	Schroeder	Ballard Community School District (USD 472)
Stephen	Simpson	Iowa State University
Teresa	Smith	City of Kelley
Melissa	Spencer	Story County
Jim	Verlengia	Colo-NESCO School District
Steve	Vollstedt	Gilbert Community School District (USD 2466)
James	Walker	Nevada Community School District (USD 4617)
Jerry	Weeks	City of Slater
John	Wilson	City of Colo
Dana	Wipperman	City of Nevada
Nathan	Young	University of Iowa
AMEC		
Susan	Belt	AMEC
Laurie	Bestgen	AMEC

Introductions

Mr. Keith Morgan, with Story County Emergency Management began the meeting by welcoming and thanking the attendees. Laurie Bestgen, with AMEC Environment & Infrastructure, Inc., the firm contracted to assist in the development of the Story County multi-jurisdictional hazard mitigation plan, began the formal portion of the presentation, beginning with having the attendees introduce themselves and state the jurisdiction they were representing.

Purpose/Public Survey/Participation Status

Ms. Bestgen provided a brief summary of the purpose of the Hazard Mitigation Plan and the Disaster Mitigation Act of 2000 that codified the requirement of local governments to adopt a hazard mitigation plan to maintain eligibility for FEMA Hazard Mitigation Assistance Grants. The twelve-step planning process was summarized and participants were informed that at the conclusion of the meeting, the planning committee will have completed at least portions of steps 1-8. Ms. Bestgen also provided a status update on the Public Survey that has been disseminated via survey monkey at <http://www.surveymonkey.com/s/2J7YGBN>.

In the next two weeks, Ms. Bestgen will coordinate a press release with Keith Morgan that will announce the availability of the survey online as well as hard copies in select public locations. The committee decided to make the hard copy surveys available as follows: City Halls, Public School Buildings Offices, and the ISU Environmental Health & Safety Services Building. Each jurisdiction in attendance was provided 10 copies of the survey to place at these locations. Additional copies may be made as needed. Planning Committee representatives were encouraged to continue to publicize the availability of the surveys and to notify Keith Morgan, Story County Emergency Manager of these efforts so that they can be described in the planning process section of the plan. Descriptions of a jurisdiction's effort to notify the public of the survey should be e-mailed to Mr. Morgan at kmorgan@storycounty.com.

Ms. Bestgen then provided a review of the requirements for jurisdictions to officially participate in the Multi-jurisdictional Hazard Mitigation Plan as well as a table summarizing each jurisdiction's participation to date (see attached PowerPoint Presentation).

Validation of Critical Facilities

Ms. Bestgen and Ms. Susan Belt, AMEC Project Manager, distributed hard copy inventories of critical and essential facilities for incorporated cities and the unincorporated areas of Story County for validation and/or correction by each jurisdiction. School buildings were included on the city/county lists, therefore the school districts did not receive separate lists to validate. However, school districts should coordinate with the county or city where their buildings are located to ensure accuracy of the data. The inventories were assembled from data provided by the Story County GIS Department and the critical facility database that is part of FEMA's loss estimation software, HAZUS. Planning committee members were instructed to carefully review the lists and make any corrections, deletions, or additions, as necessary and return to Ms. Bestgen by March 22, 2013. AMEC will provide the corrections to Story County GIS for incorporation in the GIS layer.

Plan Format/Sample Results of Countywide Risk Assessment

Ms. Bestgen provided the overall format of the plan update document as follows:

- Executive Summary
- Chapter 1—Planning Process
- Chapter 2—Jurisdiction Profiles
- **Chapter 3—Risk Assessment**
- Chapter 4—Mitigation Strategy
- Chapter 5—Plan Maintenance
- Appendices

Several copies of the draft Risk Assessment, Chapter 3 of the plan update document, were passed around in hard copy for meeting participants to review briefly. Additionally, a PDF file has been uploaded to a File Transfer Protocol (FTP) site that has been established by AMEC for this project. Instructions for accessing the FTP site were provided on the back of the meeting agenda (attached to these minutes). Ms. Bestgen asked that the planning committee, along with other representatives from their jurisdiction review the risk assessment and provide comments and additional data by March 22, 2013. Ms. Bestgen specifically requested that each jurisdiction review the hazard ranking tables at the end of each hazard section to review/validate the ranking of each hazard for their jurisdiction. There are several areas in the draft risk assessment that are highlighted in yellow, indicating information is needed, or revision is needed after further analysis.

Several comments were received after the Kick-off Meeting regarding ranking elements for the overview hazard ranking for the entire planning area. The chart below provides the revised ranking levels for all hazards after discussion and consensus on the proposed changes.

Hazard	Probability	Magnitude	Warning Time	Duration	Weighted Score	Level
River Flood	4	3	1	4	3.25	High
Winter Storm	4	2	3	4	3.25	High
Drought	3	4 (from 2)	1	4	3.1	Moderate
Tornado	3	3	3	1	2.8	Moderate
Hazardous Materials Incident	4	1	4	1	2.8	Moderate
Windstorm	4	2	2	1	2.8	Moderate
Flash Flood	4	2	2 (from 1)	1	2.8	Moderate
Transportation Incident	3	2	4	1	2.65	Moderate
Hailstorm	4	1	3	1	2.65	Moderate
Terrorism	1	4	4	4	2.65	Moderate
Thunderstorms and Lightning	4	1	2	2	2.6	Moderate
Infrastructure Failure	2	2	4	4	2.5	Moderate
Human Disease	2	3	2	4	2.5	Moderate
Grass or Wildland Fire	3 (from 4)	1	4 (from 1)	1	2.35	Moderate
Terrorism	1	4	4	4	2.65	Moderate
Animal/Crop/Plant Disease	1	3	4	4	2.35	Moderate
Radiological Incident	1	2 (from 3)	4	4	2.05	Moderate
Dam Failure	1	2	4	4	2.05	Moderate
Levee Failure	1	1	4	4	1.75	Low
Extreme Heat	2	1	1	4	1.75	Low
Landslide	2	1	2	1	1.6	Low
Earthquake	1	1	4	1	1.45	Low
Expansive Soils	2	1	1	1	1.45	Low
Sinkholes	1	1	2	1	1.15	Low

Ms. Bestgen then provided an overview of 5 of the top ranked hazards. (See attached PowerPoint Presentation). Please note: With the hazard ranking revisions, Drought is now in the top 5 but was not included in the presentation. The overview presentation provided just some of the details that are included in the full Draft Risk Assessment. All 23 hazards are included in the Draft Risk Assessment.

Mitigation Goals

Following the discussion of the risk assessment, Ms. Belt facilitated a discussion of the mitigation goals. Since this planning effort is an update to existing hazard mitigation plans, the mitigation goals were reviewed from the previous plans. Ms. Belt discussed the previous plan goals as well as other sample goals included in other mitigation plans, dividing them into four main categories as follows:

- Public Education
- Policies/Planning/Training/Communication
- Reduce Risk to Life and Property
- Protection of Critical/Essential Facilities

After a brief review of the existing goals and sample goals from other local hazard mitigation plans, the committee completed a voting exercise to reach consensus on the updated goals for the Story County Multi-jurisdictional Hazard Mitigation Plan update. Four poster-sized sheets were hung on the walls with the existing and sample goals broken down by the four categories indicated above. Each planning committee member was given five voting dots and asked to select the sample goals that most clearly stated the mitigation goals for Story County. After the voting exercise, the committee discussed the goals that received the most votes and reached consensus on the updated plan goal statements.

The following goals statements were chosen for the Story County Multi-Jurisdictional Hazard Mitigation Plan. Additional text was added to goals 2 and 3 to incorporate ideas from other similar goals that received several votes. The additional text is indicated by brackets []:

1. Protect lives and reduce injury.
2. Minimize or reduce damage to property, including critical facilities [and infrastructure].
3. Develop and implement mitigation strategies [in plans, policies, and programs] that optimize public funds in an efficient and cost-effective way.
4. Reduce utility outages during times of severe weather.
5. Strengthen communication among agencies and between agencies and the public.

Mitigation Actions

The planning committee was provided an introduction to update and development of mitigation actions. The final planning meeting, scheduled for April 11, 2013, will continue this discussion and focus on update and development of mitigation actions for the plan.

Next Steps

The meeting concluded with a discussion of the remaining steps to complete the planning process as follows:

- **Critical Facilities spreadsheet will be emailed if requested**
- **March 22—Critical Facility Validation/Risk Assessment Comments Due**
- **April 11—Final Meeting (proposed)**
- **May—Mitigation Actions Due**
- **July—Final Draft of Plan Update Document Available to HMPC**
- **August—Final Public Comment Period**
- **September—Submit Plan to IA HS&EM**
- **December—Submit Plan to FEMA**
- **February—Anticipate FEMA’s Approval Pending Adoption**
- **February to May 14, 2014—Jurisdictions Adopt Plan**

The meeting concluded with a reminder to the planning committee to turn in soft match forms to Ms. Belt at least once a month. With the critical facility lists to review and validate and the risk assessment to review, all participating jurisdictions should be spending time on this effort and need to complete a soft match form to document that time.

Attachments: FTP Site Instructions
Power Point Presentation

FTP Site Instructions

The Draft Risk Assessment is available for your review/comment from the project File Transfer Protocol (FTP) site!

<ftp://LocalHMP:lowa2013@amftp.amec.com>

Use the following steps for quick and easy access...

1. Right-click on the My Computer icon on your desktop and select Explore

or

Right-click the start/Windows button in the lower left corner of the screen and select Explore

or

Using your keyboard, press and hold the Windows key and tap the letter E to display My Computer / Windows Explorer

2. Type the link above into the Address box and click Go or press Enter.
3. Double Click on the folder titled "Draft Risk Assessment".
4. Save a copy of the PDF of the Draft Risk Assessment to your computer or removable storage for review/comment and future reference. A free copy of Adobe Reader is available at <http://www.adobe.com/products/reader.html>
5. Provide Comments to Laurie Bestgen via one of the following methods:
 - a. Mark comments on paper copy and scan and e-mail or fax.
 - b. Send e-mail or fax with written comments referencing page # and paragraph, table, figure, etc.
 - c. Use the comment tool in Adobe Reader or Adobe Professional and e-mail file with comments.

If you are using a Mac Operating System, contact Laurie Bestgen for specific instructions.

PowerPoint Presentation

Story County 

Multi-Jurisdictional Hazard Mitigation Plan

**Meeting 2:
Risk Assessment Results
Developing Mitigation Goals
February 7, 2013**

Project Manager: Susan Belt

Project Planners: Kari Valentine & Laurie Bestgen
AMEC Environment & Infrastructure, Inc.




Story County
Multi-Jurisdictional Hazard Mitigation Plan

Meeting Purpose

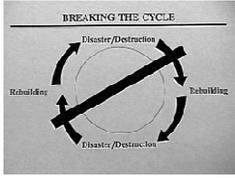
- Brief Review
- Public Survey
- Discuss Participation Requirements/Status
- Review/Validate Critical Facilities
- Plan Update Format
- Sample Results of Countywide Risk Assessment
- Update Mitigation Goals
- Discuss Mitigation Actions
- Next Steps



Story County
Multi-Jurisdictional Hazard Mitigation Plan

Disaster Mitigation Act of 2000

- Requires local governments to adopt a natural hazard mitigation plan to maintain eligibility for FEMA Hazard Mitigation Assistance funds
- This Plan Update is for a Multi-jurisdictional Hazard Mitigation Plan covering the Unincorporated County, Iowa State University, and participating Incorporated Cities and Public School Districts




Story County
Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Planning Steps

Phase 1	<ul style="list-style-type: none"> • 1. Organize Resources • 2. <u>Plan for Public Involvement</u> • 3. Coordinate with Other Departments and Agencies
Phase 2	<ul style="list-style-type: none"> • 4. Identify the Hazards • 5. Profile the Hazards • 6. Identify Assets • 7. Estimate Losses
Phase 3	<ul style="list-style-type: none"> • 8. Identify Plan Goals
Phase 4	<ul style="list-style-type: none"> • 9. Develop Potential Mitigation Actions • 10. Draft the Mitigation Plan • 11. Adopt the Plan • 12. Implement and Maintain the Plan



Story County
Multi-Jurisdictional Hazard Mitigation Plan

Public Survey Update

- Survey Monkey—notify public, provide link in newsletters, on websites, in utility mailers, via social media, etc.
 - <http://www.surveymonkey.com/s/2J7YGBN>
- Hard Copy Surveys
- Press Release will be issued with link and locations of hard copies.
 - City Halls???
 - Public School Building Offices???
 - Public Libraries????
 - ISU Environmental Health & Safety Services Building



Story County
Multi-Jurisdictional Hazard Mitigation Plan

Efforts to Promote Survey

- Cambridge added to City Facebook page and posted at City Hall.
- Zearing Telephone Co. ISP sent e-mail to customers.
- Nevada Schools put in Newsletter.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Initial Survey Results

- 11 Responses: 3 Uninc. County, 2 Cambridge, 1 Maxwell, 1 Story City, 3 Zearing, 1 Colo-Nesco USD
- Probability Rankings: Winter Storm, Windstorm, Thunderstorm & Lightning, Drought, Extreme Heat, Tornado, Hailstorm
- Magnitude Rankings: Tornado, Winter Storm, Thunderstorm & Lightning, Windstorm, Drought, Extreme Heat, Hailstorm

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Participating Jurisdictions—Review Requirements

- **Meeting Participation** —Designate a representative to serve on the Story County Hazard Mitigation Planning Committee, which will meet three times during the planning process,
- **Data Collection Guides** —Provide data and comment on plan drafts as requested,
- **Mitigation Actions**— Assist in the development of a risk assessment and mitigation actions (at least one) specific to the jurisdiction,
- **Disseminate Information** —Inform the public, local officials, and other interested parties about the planning process and provide opportunity for them to comment on the plan, and
- **Formally adopt the mitigation plan**

Jurisdiction	Kick-off Meeting	Data Collection Guide	Soft-Match Forms Rcvd
Story County	X	X	X
Ames	X	X	X
Cambridge	X	X	X
Collins		X	
Colo	X	X	X
Gilbert	X	X	X
Huxley	X	X	X
Kelley	X	X	X
Maxwell	X	X	X
McCallsburg	X	X	
Nevada	X	X	X
Roland	X	X	X
Sheldahl			
Slater		X	X
Story City	X	X	X
Zearing	X	X	X
Iowa State University	X	X	X
Ames USD 225	X	X	
Ballard USD 472	X	X	
Collins-Maxwell USD 1350	X	X	
Colo-Nesco USD 1359	X	X	
Gilbert USD 2466	X	X	X
Nevada USD 4617	X	X	
Roland-Story USD 5643	X	X	X

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Critical Facilities

- Critical Facility—essential in providing utility or direction either during the response to an emergency or during the recovery operation.
 - Essential Facility—if damaged would have devastating impacts on disaster response and/or recovery.
 - High Potential Loss Facility—if damaged would have a high loss or impact on the community.
 - Transportation/Lifeline Facility—assets critical for transport and provision of necessary utilities

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Critical Facility Examples

Essential Facilities	High Potential Loss Facilities	Transportation and Lifeline
<ul style="list-style-type: none"> •Hospitals and other medical facilities •Police stations •Fire station •Emergency Operations Centers 	<ul style="list-style-type: none"> •Power plants •Dams/levees •Military installations •Hazardous material sites •Schools •Shelters •Day care centers •Nursing homes •Main government buildings 	<ul style="list-style-type: none"> •Highways, bridges, and tunnels •Railroads and facilities •Bus facilities •Airports •Water treatment facilities •Natural gas facilities and pipelines •Oil facilities and pipelines •Communications facilities

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Validate Critical Facilities (handouts)

- Impacts of some hazards will be considered for critical facilities
 - River Flood—critical facilities in floodplain
 - Hazardous Materials Incidents—critical facilities in ½ mile Initial Isolation Zone of Tier II Facilities
- GIS Data Sources for Critical Facilities
 - Story County GIS Dept.
 - HAZUS Database (FEMA's Loss Estimation Software)
 - Iowa State University
- Story County GIS will maintain validated critical facility inventory
- Validate and Return to Laurie Bestgen by 3/22
- Inventory/Maps and Hazard Analysis Results will be FOUO Appendix

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Plan Update Format

- Executive Summary
- Chapter 1—Planning Process
- Chapter 2—Jurisdiction Profiles
- **Chapter 3—Risk Assessment**
- Chapter 4—Mitigation Strategy
- Chapter 5—Plan Maintenance
- Appendices

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Story County DRAFT Risk Assessment—Chapter 3

- Available on project FTP site (instructions on back of agenda)
- Review and Comment—Comments Due 3/22 (proposed)
 - Hyperlinked Table of Contents and references throughout
 - Utilize PDF search function for key words/name of jurisdiction
 - Yellow Highlight Indicates Information Needed/Revision Needed
- Presentation is Overview of Top 5 Ranked Hazards
- Please Review Hazard Rankings
 - Overview for entire planning area—at the beginning of each hazard section.
 - Each Jurisdiction—provided at the end of each hazard section. Please review/validate.

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Hazard	Probability	Magnitude	Warning Time	Duration	Weighted Score	Level
River Flood	4	3	1	4	3.25	High
Winter Storm	4	2	3	4	3.25	High
Tornado	3	3	3	1	2.8	Moderate
Windstorm	4	2	2	1	2.8	Moderate
Hazardous Materials Incident	4	1	4	1	2.8	Moderate
Transportation Incident	3	2	4	1	2.65	Moderate
Flash Flood	4	2	1	1	2.65	Moderate
Hailstorm	4	1	3	1	2.65	Moderate
Terrorism	1	4	4	4	2.65	Moderate
Thunderstorms and Lightning	4	1	2	2	2.6	Moderate
Drought	3	2	1	4	2.5	Moderate
Infrastructure Failure	2	2	4	4	2.5	Moderate
Human Disease	2	3	2	4	2.5	Moderate
Grass or Wildland Fire	3	1	4	1	2.35	Moderate
Radiological Incident	1	3	4	4	2.35	Moderate
Animal/Crop/Plant Disease	1	3	4	4	2.35	Moderate
Dam Failure	1	2	4	4	2.05	Moderate
Levee Failure	1	1	4	4	1.75	Low
Extreme Heat	2	1	1	4	1.75	Low
Landslide	2	1	1	2	1.6	Low
Earthquake	2	1	1	4	1.45	Low
Expansive Soils	2	1	1	1	1.45	Low
Sinkholes	1	1	2	1	1.15	Low

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Proposed Ranking Changes

Hazard	Probability	Magnitude	Warning Time	Duration	Weighted Score	Level
River Flood	4	3	1	4	3.25	High
Winter Storm	4	2	3	4	3.25	High
Drought	3	4 (from 2)	1	4	3.1	Moderate
Tornado	3	3	3	1	2.8	Moderate
Hazardous Materials Incident	4	1	4	1	2.8	Moderate
Windstorm	4	2	2	1	2.8	Moderate
Flash Flood	4	2	2 (from 1)	1	2.8	Moderate
Transportation Incident	3	2	4	1	2.65	Moderate
Hailstorm	4	1	3	1	2.65	Moderate
Thunderstorms and Lightning	4	1	2	2	2.6	Moderate
Infrastructure Failure	2	2	4	4	2.5	Moderate
Human Disease	2	3	2	4	2.5	Moderate
Grass or Wildland Fire	3 (from 4)	1	4 (from 1)	1	2.35	Moderate
Terrorism	1	3 (from 4)	4	4	2.35	Moderate
Animal/Crop/Plant Disease	1	3	4	4	2.35	Moderate
Radiological Incident	1	2 (from 3)	4	4	2.05	Moderate
Dam Failure	1	2	4	4	2.05	Moderate
Levee Failure	1	1	4	4	1.75	Low
Extreme Heat	2	1	1	4	1.75	Low
Landslide	2	1	2	1	1.6	Low
Earthquake	2	1	4	1	1.45	Low
Expansive Soils	2	1	1	1	1.45	Low
Sinkholes	1	1	2	1	1.15	Low

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Example Hazard Ranking Tables

3.4.1.1 Dam Failure

Hazard Score Calculation						
Probability	Magnitude/Severity	Warning Time	Duration	Weighted Score	Level	
1	2	4	4	2.35	Moderate	

Jurisdiction	Probability	Magnitude	Warning Time	Duration	Score	Level
Ames	1	3	4	4	2.35	Moderate
Cambridge	N/A	N/A	N/A	N/A	N/A	N/A
Castro	N/A	N/A	N/A	N/A	N/A	N/A
Colo	N/A	N/A	N/A	N/A	N/A	N/A
Clifton	N/A	N/A	N/A	N/A	N/A	N/A
Clute	N/A	N/A	N/A	N/A	N/A	N/A
Elmore	N/A	N/A	N/A	N/A	N/A	N/A
Harvey	1	2	4	4	2.05	Moderate
McCall Burg	N/A	N/A	N/A	N/A	N/A	N/A
North	N/A	N/A	N/A	N/A	N/A	N/A
Polk	N/A	N/A	N/A	N/A	N/A	N/A
Sheldahl	N/A	N/A	N/A	N/A	N/A	N/A
Shelton	N/A	N/A	N/A	N/A	N/A	N/A
Story City	N/A	N/A	N/A	N/A	N/A	N/A
Wentworth	1	2	4	4	2.05	Moderate
University/School Districts						
Boone State University	N/A	N/A	N/A	N/A	N/A	N/A
Ames USD 225	N/A	N/A	N/A	N/A	N/A	N/A
Estimote USD 472	N/A	N/A	N/A	N/A	N/A	N/A
Corning-Moscow USD 1243	N/A	N/A	N/A	N/A	N/A	N/A
Colo-NECSD School Dist. 504	N/A	N/A	N/A	N/A	N/A	N/A
Clute USD 2486	N/A	N/A	N/A	N/A	N/A	N/A
Clifton USD 2486	N/A	N/A	N/A	N/A	N/A	N/A
Harvey USD 4187	N/A	N/A	N/A	N/A	N/A	N/A
Estimote USD 1243	N/A	N/A	N/A	N/A	N/A	N/A

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Plan Includes the Following for EACH Hazard

- Hazard Profile
 - Hazard Description
 - Geographic Location/Extent
 - Previous Occurrences
 - Probability of Future Occurrence
- Vulnerability Assessment
 - Vulnerability Overview
 - Potential Losses to Existing Development
 - Future Development
 - Hazard Summary by Jurisdiction

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Sample Risk Assessment Results—Top 5 Hazards



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

River Flood

- 12 Presidential Disaster Declarations including Story County since 1969 included flooding
- Some Critical Facilities in the 100-year floodplain
 - 9 from un-validated list
- Insurance Coverage is less than damage estimates in some areas
- Loss estimates developed for 1-percent annual chance flood
 - Effective Digital Flood Insurance Rate Maps
 - County Assessor's Office Parcel Layer/Data
 - ISU Building Inventory



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Estimated Losses: 100-Year Flood Event

Jurisdiction	Floodplain Building Count	Building Exposure (\$)	Content Exposure (\$)	Total Exposure (\$)	Potential Loss at 20%
Ames	286	\$70,492,000	\$63,476,750	\$133,968,750	\$26,793,750
Cambridge	8	\$392,000	\$213,800	\$605,800	\$121,160
Collins	16	\$1,131,700	\$565,850	\$1,697,550	\$339,510
Colo	0	\$0	\$0	\$0	\$0
Gilbert	12	\$1,171,300	\$772,550	\$1,943,850	\$388,770
Huxley	14	\$3,263,900	\$1,631,950	\$4,895,850	\$979,170
Kelley	0	\$0	\$0	\$0	\$0
Maxwell	27	\$2,041,000	\$1,025,350	\$3,066,350	\$613,270
McCallsburg	0	\$0	\$0	\$0	\$0
Nevada	15	\$1,177,900	\$1,016,050	\$2,193,950	\$438,790
Roland	38	\$2,537,600	\$1,383,550	\$3,921,150	\$784,230
Sheldahl	0	\$0	\$0	\$0	\$0
Slater	36	\$5,603,300	\$2,802,950	\$8,406,250	\$1,681,250
Story City	31	\$2,255,500	\$1,231,650	\$3,487,150	\$697,430
Uninc. County	219	\$36,281,500	\$29,102,000	\$65,383,500	\$13,076,700
Zearing	23	\$306,300	\$222,650	\$528,950	\$105,790
Iowa State University	14	\$257,407,763	\$257,407,763	\$514,815,525	\$102,963,105
Total	739	\$384,061,763	\$360,852,863	\$744,914,625	\$148,982,925

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Estimated Losses: Loss Ratio (100-yr flood losses compared to exposure value)

Jurisdiction	Jurisdiction Total Exposure (\$)	100-Yr Flood Potential Loss at 20%	Loss Ratio
Ames	\$4,273,829,966	\$26,793,750	0.63%
Cambridge	\$42,600,100	\$121,160	0.28%
Collins	\$22,743,750	\$339,510	1.49%
Colo	\$39,831,268	\$0	0.00%
Gilbert	\$63,064,268	\$388,770	0.62%
Huxley	\$206,283,000	\$979,170	0.47%
Kelley	\$14,827,750	\$0	0.00%
Maxwell	\$44,191,205	\$613,270	1.39%
McCallsburg	\$14,114,200	\$0	0.00%
Nevada	\$350,489,525	\$438,790	0.13%
Roland	\$77,066,450	\$784,230	1.02%
Sheldahl	\$6,446,150	\$0	0.00%
Slater	\$90,713,200	\$1,681,250	1.85%
Story City	\$305,929,230	\$697,430	0.23%
Uninc. County	\$936,304,450	\$13,076,700	1.39%
Zearing	\$24,036,900	\$105,790	0.44%
Iowa State University	\$2,644,423,734	\$102,963,105	3.89%
Total	\$9,158,895,146	\$148,982,925	1.63%

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Estimated Losses: Residential Population Displaced

Jurisdiction	Residential Buildings in the 100-yr Floodplain	Estimated Persons Displaced
Ames	73	171
Cambridge	4	9
Collins	16	37
Colo	0	0
Gilbert	7	16
Huxley	14	33
Kelley	0	0
Maxwell	27	63
McCallsburg	0	0
Nevada	4	9
Roland	28	66
Sheldahl	0	0
Slater	33	77
Story City	19	44
Story County	84	197
Zearing	3	7
Iowa State University	No Residential in Floodplain	No Residential in Floodplain
Total	312	730



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Flood Insurance Coverage

Jurisdiction	Policies in Force	Insurance In Force	Closed Losses*	Total payments
Unincorporated				
Story County	29	\$5,139,400	9	\$163,231
Ames	223	\$51,602,200	166	\$12,100,927
Cambridge	1	\$28,000	5	\$29,034
Collins	5	\$511,100	1	\$8,049
Colo		Not Participating		
Gilbert	3	\$773,000	0	\$51,811
Huxley	0	0	0	0
Kelley	0	0	0	0
Maxwell	21	\$2,162,900	11	\$140,441
McCallsburg	0	0	0	0
Nevada	4	\$392,000	15	\$245,712
Roland	16	\$2,543,300	7	\$33,898
Sheldahl		Not Participating		
Slater	3	\$497,000	0	0
Story City	12	\$2,391,000	6	\$97,032
Zearing	3	\$218,300	2	\$6,867
Total	320	\$66,258,200	222	\$12,877,002



Story County Multi-Jurisdictional Hazard Mitigation Plan							
Repetitive Loss Properties							
41 Total Repetitive Loss properties in Story County—2 or more payments of \$5,000 or more in 10 yrs.							
Claims History:							
Jurisdiction	# of Properties	# Mitigated	Building Payments	Contents Payments	Total Payments	Average Payment	# of Losses
Ames	31	10	\$5,355,066	\$990,078	\$6,345,144	\$1,957,124	88
Gilbert	1	0	\$38,436	\$13,375	\$51,811	\$25,905	2
Maxwell	2	0	\$70,578	\$20,810	\$91,388	\$29,894	6
Nevada	3	2	\$155,666	\$33,772	\$189,438	\$43,599	9
Roland	1	0	\$9,053	\$0	\$9,053	\$4,526	2
Story City	1	0	\$21,380	\$0	\$21,380	\$10,690	2
Unincorporated Story County	1	1	\$79,014	\$3,743	\$82,757	\$41,378	2
Zearing	1	0	\$6,391	\$476	\$6,867	\$3,434	2
Total	41	13	\$5,735,584	\$1,062,253	\$6,797,838	\$2,116,551	113

Story County Multi-Jurisdictional Hazard Mitigation Plan		
Winter Storm		
Disaster Number	Description	Declaration Date (Incident Period)
DR-1880	Severe Winter Storms	3/2/2010 (1/19 to 1/26-2010)
DR-1688	Severe Winter Storms	03/14/2007 (2/23 to 3/2/2007)
At least one Winter Storm or Ice Storm every year in last 20 yrs. (NCDC)		
# of Daily Snowfall Events 2 inches and more, Ames Weather Station (1950-2012)		
Inches	# of Days	
12 or more	2	
10-10.9	1	
9-9.9	6	
8-8.9	9	
7-7.9	17	
6-6.9	22	
5-5.9	29	
4-4.9	51	
3	85	
2	157	



1999 Blizzard

Story County Multi-Jurisdictional Hazard Mitigation Plan			
Power Loss=Economic Losses FEMA Loss of Use Estimates			
Jurisdiction	Population (2010)	Estimated Affected Population (10%)	Electric Loss of Use Estimate (\$126 per person per day)
Ames	58,965	5896.50	\$742,959
Cambridge	827	82.70	\$10,420
Collins	495	49.50	\$6,237
Colo	876	87.60	\$11,038
Gilbert	1,082	108.20	\$13,633
Huxley	3,317	331.70	\$41,794
Kelley	309	30.90	\$3,893
Maxwell	333	33.30	\$4,196
McCallsburg	920	92.00	\$11,592
Nevada	6,798	679.80	\$85,655
Roland	1,284	128.40	\$16,178
Sheldahl	319	31.90	\$4,019
Slater	1,489	148.90	\$18,761
Story City	3,431	343.10	\$43,231
Uninc. County	8,543	854.30	\$107,642
Zearing	554	55.40	\$6,980

Story County Multi-Jurisdictional Hazard Mitigation Plan		
Vulnerable Populations		
Jurisdiction	Population 65 yrs and over	Percent population 65 yrs and over
Story County	8,945	10
Ames	4,774	8
Cambridge	91	11
Collins	81	16
Colo	130	15
Gilbert	69	6
Huxley	297	9
Kelley	29	9
McCallsburg	40	12
Maxwell	111	12
Nevada	951	14
Roland	128	10
Sheldahl	52	16
Slater	183	12
Story City	788	23
Zearing	112	20



Story County Multi-Jurisdictional Hazard Mitigation Plan	
Tornado	
<ul style="list-style-type: none"> NCDC estimate for past property damages from 1950-2012 is \$8,998,800. This translates to \$145,142 in annualized losses over the 62-year period. 49 Tornadoes <ul style="list-style-type: none"> – 3 unrated, 1 F5, 1 Fr, 4 F#, 10 F2, 14 F1, 16 F0 	 <p>Nov. 12, 2005 Tornado Path</p>



Story County Multi-Jurisdictional Hazard Mitigation Plan			
Tornado Damage Scenarios F2/EF2, 130 mph, 155yds X 5 mile path, 45 degree angle			
Jurisdiction	# of Buildings in Path	Total Value of Buildings in Path	30% Loss Estimate
Ames	607	\$78,495,900	\$23,548,770
Cambridge	72	\$5,402,900	\$1,620,870
Collins	121	\$8,140,100	\$2,442,030
Colo	145	\$8,169,600	\$2,450,880
Gilbert	49	\$4,090,200	\$1,227,060
Huxley	59	\$8,055,500	\$2,416,650
Kelley	67	\$4,459,800	\$1,337,940
Maxwell	123	\$11,086,910	\$3,326,073
McCallsburg	76	\$3,265,700	\$979,710
Nevada	330	\$22,791,700	\$6,837,510
Roland	156	\$11,294,600	\$3,388,380
Sheldahl	35	\$1,962,500	\$588,750
Slater	175	\$14,853,000	\$4,455,900
Story City	161	\$12,298,490	\$3,689,547
Zearing	72	\$2,738,100	\$821,430
Iowa State University	59	\$1,039,636,405	\$311,890,922



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Windstorm

- 10 Story County Presidential Declarations since 1974 included Sever Storms/Severe Weather
- Annual Avg. of Crop Insurance Paid--\$225,850

NCDC Events—reported Wind Speeds

Wind Speed (Knots)	# of Events
87	1
85	1
80	3
74	3
72	1
71	1
70	3
69	1
65	14
64	2
63	1
62	1
61	24
60	1



Sept. 2001 Windstorm

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Mobile Homes in Planning Area

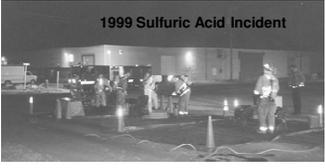
Jurisdiction	Number of Mobile Homes
Ames	817
Cambridge	30
Collins	6
Colo	10
Gilbert	0
Huxley	206
Kelley	4
Maxwell	2
McCallsburg	5
Nevada	334
Roland	6
Sheldahl	22
Slater	58
Story City	42
Uninc. County	401
Zearing	2
Total	1,945



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Hazardous Materials

- Fixed Facilities
- Transportation Incidents
- Pipeline Incidents



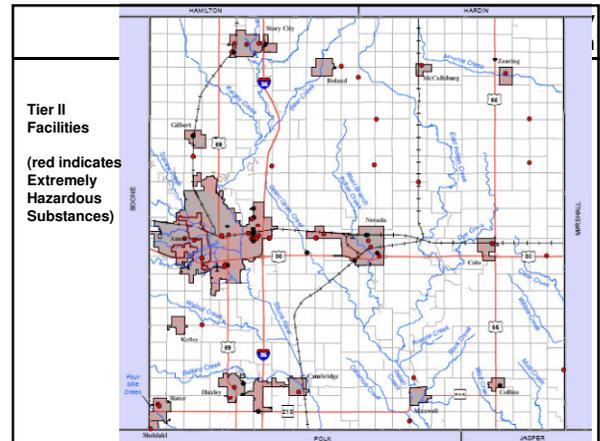
1999 Sulfuric Acid Incident



1997 Anhydrous Ammonia Spill



1999 Anhydrous Ammonia Leak-Heartland Co-op



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

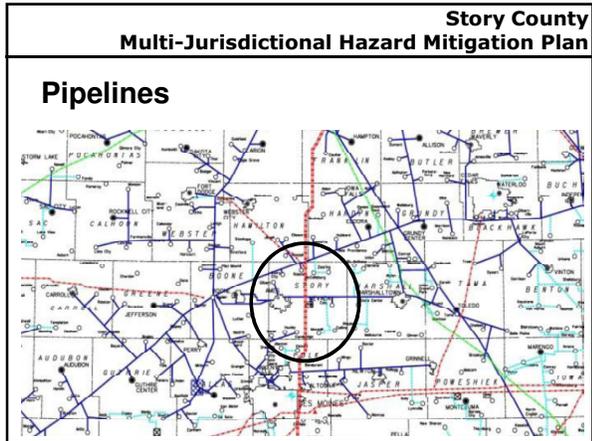
Jurisdiction	# of Tier 2 Facilities	Summary # of Chemicals Reported	# of Tier II Facilities with EHS	Summary # EHS Chemicals Reported
Uninc. County	22	63	15	15
Ames	31	186	20	25
Cambridge	1	1	1	1
Collins	1	1	0	0
Colo	2	6	2	2
Gilbert	2	5	1	1
Huxley	4	9	2	2
Kelley	0	0	0	0
Maxwell	0	0	0	0
McCallsburg	1	1	1	1
Nevada	8	60	6	8
Roland	0	0	0	0
Sheldahl	1	1	1	1
Slater	2	29	2	7
Story City	4	50	3	5
Zearing	1	6	1	1
Total	80	418	55	69

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Transportation Incidents

- 2001 Commodity Flow Analysis Summary
- Highway Observations—4 various locations along I-35 and Highway 30
- Union Pacific Railroad—80 trains/day through Ames





**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Hazardous Materials Spills Reported to DNR 1995-2012

Jurisdiction	# of Spills Reported
Ames	198
Cambridge	8
Collins	4
Colo	14
Gilbert	1
Grimes	1
Huxley	5
Kelley	2
Maxwell	5
McCallsburg	3
Nevada	41
Roland	9
Slaters	4
Story City	25
Zearing	4
Uninc. County	6
Total	330

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Hazardous Materials Incident Cost Estimate

- \$1,270 per gallon response cost for crude oil, gasoline, and other fuels (Pipelines and Hazardous Materials Safety Administration)
- Average size of this type of spill in Story County was 66 gallons (1995-2012)
- \$75,600 per spill
- Average 4.3 spills of this type per year
- \$325,080 response costs per year for this type of spill.

amec

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Review Draft Risk Assessment For Additional Details and Remaining Hazards

amec

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Risk Assessment Comments due 3/22

- **Mail to:**
AMEC
Attn: Laurie Bestgen
1129 SW Wanamaker, Suite 101
Topeka, KS 66604
- **E-mail to:**
laurie.bestgen@amec.com

amec

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Update Collective Goals for the Story County Multi-jurisdictional Hazard Mitigation Plan

amec

**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

**Mitigation Strategy:
Goals and Actions**

- **Goals:** Describe the overall direction of the plan
- **Actions:** Describe specific activities or projects designed to achieve goals



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Ames/ISU 2007 Plan Goals

- G-1: Protect lives and reduce injury.
- G-2: Promote hazard mitigation as an integrated policy.
- G-3: Protect the continuity of local government and university operations to ensure no significant disruption of services during or due to a disaster.
- G-4: Improve community emergency management preparedness, collaboration, and outreach.
- G-5: Minimize or reduce damage to property, including critical facilities.
- G-6: Develop and implement mitigation strategies that optimize public funds in an efficient and cost-effective way.
- G-7: Maintain, utilize, and restore the natural environment's capacity to deal with the impacts of disasters.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Story County 2009 Plan Goals

- Developed 1 Goal for Each Hazard
- "Reduce losses to... *hazard name*"



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Common Categories of Mitigation Goals

- **Public Education**
- **Policies/Planning/Training/Communication**
- **Reduce Risk to Life and Property**
- **Protection of Critical/Essential Facilities**



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

**Public Education/Communication
Sample Goals**

- Increase citizen awareness and preparedness by providing educational materials on hazards.
- Improve public understanding of hazards and risk by providing public awareness, preparedness, and mitigation information through various channels of communication.
- Strengthen communication among agencies and between agencies and the public.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

**Policies/Planning/Training
Sample Goals**

- Promote Hazard Mitigation as an integrated Policy. (Ames/ISU 2007 G-2)
- Improve community emergency management preparedness's collaboration, and outreach. (Ames/ISU 2007 G-4)
- Develop and implement mitigation strategies that optimize public funds in an efficient and cost-effective way. (Ames/ISU 2007 G-6)
- Create a disaster resistant community by involving individuals in the private and public sector to participate in hazard mitigation planning and training activities geared toward reducing the impact of disasters in Story County.
- Improve capabilities to mitigate hazards by incorporating mitigation strategies in plans, policies, and programs.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Reduce Risk to Life and Property
Sample Goals

- Reduce losses to *all hazards*. (Story Co. 2009)
- Protect lives and reduce injury. (Ames/ISU 2007 G-1)
- Minimize or reduce damage to property, including critical facilities. (Ames/ISU 2007 G-5)
- Maintain, utilize, and restore the natural environment's capacity to deal with the impacts of disasters. (Ames/ISU 2007 G-7)
- Minimize the vulnerability of the people, property, environment, and economy of Story County to the impacts of hazards.
- Prevent or reduce the impact of hazards for the residents, businesses and municipalities of Story County.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Protection Of Critical/Essential Facilities
Sample Goals

- Protect the continuity of local government and university operations to ensure no significant disruption of services during or due to a disaster. (Ames/ISU 2007 G-3)
- Reduce utility outages during times of severe weather.
- Protect critical facilities and infrastructure from hazards.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Voting Exercise

- Everyone please take 5 Blue Dots
- Please vote for sample goals that you prefer on each large piece of paper.
 - You may vote for one goal more than once.
 - You may vote for more than one goal in each category
- It is not mandatory to have a goal in each category.
- Then as a group we will reach consensus on the goals and refine wording, if necessary.
- As you think ahead about your possible action ideas for this plan, do they fit under one of these goals?



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Mitigation Actions

- Final Meeting will focus on development of Mitigation Actions.
- As you review the risk assessment, consider what mitigation actions could reduce/eliminate damages.
- Discuss with other representatives from your jurisdiction.
- Mitigation Strategy should be comprehensive.....not just those that IA HS&EM / FEMA will fund.
- Each jurisdiction must have AT LEAST one action.
- Communities that participate in NFIP must have an ADDITIONAL action that relates to continued compliance.



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

**State Mitigation Project Types
From State Hazard Mitigation Plan**

- Flood-prone Property Acquisition & Structure Demolition /Relocation
- Flood-Prone Structure Elevation
- Dry Floodproofing of Historical Residential Structures
- Dry Floodproofing of Non-residential Structures
- Minor Localized Flood Reduction Projects (storm water management or localized flood control projects)
- Structural Retrofitting of Existing Buildings (adding a tornado safe room)
- Non-structural Retrofitting of Existing Buildings, and Facilities from wind damage.
- New Tornado Safe Room Construction
- Electrical Utilities Infrastructure Retrofit
- Soil Erosion Stabilization
- Wildfire Mitigation



**Story County
Multi-Jurisdictional Hazard Mitigation Plan**

Next Steps

- Critical Facilities spreadsheet will be emailed if requested
- March 22—Critical Facility Validation/Risk Assessment Comments Due
- April 11—Final Meeting (proposed)
- May—Mitigation Actions Due
- July—Final Draft of Plan Update Document Available to HMPC
- August—Final Public Comment Period
- September—Submit Plan to IA HS&EM
- December—Submit Plan to FEMA
- February—Anticipate FEMA's Approval Pending Adoption
- February to May 14, 2014—Jurisdictions Adopt Plan

- Turn in Soft Match Forms at least once/month ☺

