

|   |   |                                      |
|---|---|--------------------------------------|
| <b>Jurisdiction:</b><br>Jackson County                              | <b>Title of Plan:</b><br>Jackson County Multi-Jurisdictional Multi-Hazard Mitigation Plan | <b>Date of Plan:</b><br>January 2012 |
| <b>Local Point of Contact:</b><br>Jennifer Walker                   | <b>Address:</b>   |                                      |
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| <b>Phone Number:</b><br>563-556-4166                                | jwalker@ecia.org  |                                      |
| <b>Funding Source:</b>  |   |                                      |
| <b>State Reviewer:</b>  | <b>Title:</b>   | <b>Date:</b>                         |

|   |   |  |
|---|---|--|
| <b>FEMA Reviewer:</b><br>Steve Greene<br>Michelle Wolfe | <b>Title:</b><br>Hazard Mitigation Community Planner<br>Hazard Mitigation Community Planner | <b>Date:</b><br>07/30/12<br>2 Aug 2012, 30 Oct 2012, 15 Feb 2013 |
| <b>Date Received in FEMA Region VII</b>                 | 2 July 2012, 18 October 2012, 13 February 2013  |  |
| <b>Plan Not Approved</b>                                |   |  |
| <b>Plan Approvable Pending Adoption</b>                 |   |  |
| <b>Plan Approved</b>                                    | 15 February 2013  |  |

| <b>Jurisdiction:</b>         | Adoption Resolution Date | NFIP Status* |           |
|------------------------------|--------------------------|--------------|-----------|
|                              |                          | <b>Y</b>     | <b>NP</b> |
| Jackson County               | 24 Jan 12                | ✓            |           |
| City of Andrew               | 10 Jan 12                |              | ✓         |
| City of Baldwin              | 3 Jan 12                 | ✓            |           |
| City of Bellevue             | 4 Jan 12                 | ✓            |           |
| City of LaMotte              |                          | ✓            |           |
| City of Maquoketa            | 6 Feb 12                 | ✓            |           |
| City of Miles                | 4 Jan 12                 | ✓            |           |
| City of Monmouth             | 11 Jan 12                | ✓            |           |
| City of Preston              | 9 Jan 12                 | ✓            |           |
| City of Sabula               | 23 Jan 12                | ✓            |           |
| City of Spragueville         | 5 Jan 12                 |              | ✓         |
| City of Springbrook          | 7 Feb 12                 |              | ✓         |
| City of St. Donatus          | 7 Feb 12                 |              | ✓         |
| City of Zwingle              | 14 Feb 12                | ✓            |           |
| Andrew School District       | 13 Feb 12                |              | ✓         |
| Bellevue School District     | 13 Feb 12                |              | ✓         |
| East-Central School District | 23 Jan 12                |              | ✓         |
| Maquoketa School District    | 13 Jan 12                |              | ✓         |
| Preston School District      | 19 Jan 12                |              | ✓         |

\* Notes: Y = Participating NP = Not Participating in NFIP S- Sanctioned R-Rescinded

**SECTION 1: REGULATION CHECKLIST**

| <b>1. REGULATION CHECKLIST</b>  |   | <b>Location in Plan</b><br>(section and/or<br>page number) | <b>Met</b> | <b>Not<br/>Met</b> |
|---|---|--|------------|--------------------|
| <b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>   |   |  |            |                    |
| <b>ELEMENT A. PLANNING PROCESS</b>  |   |  |            |                    |
| A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))  | <b>Prerequisite:</b><br>pg 6<br><br><b>Appendix A:</b><br>pg 90-99, | ✓  |            |                    |
| A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2)) | <b>Chapter 1:</b><br>pg 9   | ✓  |            |                    |
| A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))  | <b>Chapter 1:</b><br>pg 8-9<br><br><b>Appendix B:</b><br>pg 168-169 | ✓  |            |                    |
| A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))  | <b>Chapter 1:</b><br>pg 9-10  | ✓  |            |                    |
| A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))   | <b>Chapter 5:</b><br>pg 88  | ✓  |            |                    |
| A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))   | <b>Chapter 5:</b><br>pg 87-88                                       | ✓  |            |                    |
| <b><u>ELEMENT A: REQUIRED REVISIONS</u></b>   |   |  |            |                    |

**1. REGULATION CHECKLIST**

Regulation (44 CFR 201.6 Local Mitigation Plans)

Location in Plan  
(section and/or  
page number)

Met Not  
Met Met

**ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT**

|   |   |   |  |
|---|---|---|--|
| B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))                                | <b>Chapter 3:</b><br>pg 28-30, 35-36, 38-40, 44, 48-49  | ✓ |  |
| B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))                  | <b>Chapter 3:</b><br>pg 35, 39, 41, 42, 47 ,50<br><br><b>Appendix E:</b><br>pg 199-203, 208-220 | ✓ |  |
| B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii)) | <b>Chapter 3:</b><br>pg 55-62, 67-70  | ✓ |  |
| B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))   | <b>Chapter 3:</b><br>pg 72<br><br><b>Appendix:</b><br>pg 245-246                                | ✓ |  |

**ELEMENT B: REQUIRED REVISIONS**

| <b>ELEMENT C. MITIGATION STRATEGY</b>  |   |   |  |
|--|---|---|--|
| C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))  | <b>Chapter 2:</b><br>pg 14-25   | ✓ |  |
| C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))  | <b>Chapter 4:</b><br>pg 78-80, 83                                     | ✓ |  |
| C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))   | <b>Chapter 4:</b><br>pg 74-75   | ✓ |  |
| C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii)) | <b>Chapter 4:</b><br>pg 78, 79, 80, 84, 85                            | ✓ |  |
| C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))                      | <b>Chapter 4:</b><br>pg 77-85<br><br><b>Appendix C:</b><br>pg 171-178 | ✓ |  |
| C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))                      | <b>Chapter 4:</b><br>pg 88  | ✓ |  |
| <b><u>ELEMENT C: REQUIRED REVISIONS</u></b>  |   |   |  |
|  |   |   |  |

| <b>1. REGULATION CHECKLIST</b>  |   | <b>Location in Plan</b><br>(section and/or page number) | <b>Met</b> | <b>Not Met</b> |
|---|---|---|------------|----------------|
| <b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>   |   |   |            |                |
| <b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)   |   |   |            |                |
| D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))  | <b>Chapter 2:</b><br>14, 15, 16, 18, 21, 22 | ✓   |            |                |
| D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))  | <b>Appendix I:</b><br>pg 248-255            | ✓   |            |                |
| D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))   | <b>Chapter 4:</b><br>pg 77                  | ✓   |            |                |
| <b><u>ELEMENT D: REQUIRED REVISIONS</u></b>   |   |   |            |                |
| •   |   |   |            |                |
| <b>ELEMENT E. PLAN ADOPTION</b>   |   |   |            |                |
| E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))   | <b>Appendix D:</b><br>pg 179                | ✓   |            |                |
| E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))   | <b>Appendix D:</b><br>pg 179 - 197          | ✓   |            |                |
| <b><u>ELEMENT E: REQUIRED REVISIONS</u></b>   |   |   |            |                |
| <b>NOTE:</b>  |   |   |            |                |
| E2: There is no indication that the City of LaMotte has formally adopted the Jackson County Multi-Jurisdictional Hazard Mitigation Plan.  |   |   |            |                |
| <i>If the plan is not adopted by a participating jurisdiction, that jurisdiction would not be eligible for project grants under the following hazard mitigation assistance programs: HMGP, PDM, FMA, and SRL.</i> |   |   |            |                |

## SECTION 2: PLAN ASSESSMENT

### A. Plan Strengths and Opportunities for Improvement

#### Element A: Planning Process

##### *Plan Strengths*

The plan was supported by a significant number of meetings and offered ample opportunities for public participation. The extra effort that went into the public participation process is commendable.

##### *Opportunities for Improvement*

More detail regarding the nature of individual team members' participation would be appropriate. Meeting sign-in sheets offer an important means of substantiating participation and should be included whenever possible.

It is always appropriate to include documentation demonstrating that a jurisdiction (either a school district or a community) has appointed a representative to act on their behalf.

#### Element B: Hazard Identification and Risk Assessment

##### *Plan Strengths*

The plan author did an excellent job in creating maps that highlighted the local schools and locations of hazard areas (Appendix F & H).

Also, the Author did a good job in highlighting the top employers as well as the county's historical landmarks that are listed on the National Register of Historic Places. This information provided a good background of the planning area.

##### *Opportunities for Improvement*

#### Element C: Mitigation Strategy

##### *Plan Strengths*

The planning team did a good job in developing the plan's goals and objectives. Mitigation action tables are well organized and easy to follow.

##### *Opportunities for Improvement*

### B. Resources for Implementing Your Approved Plan

A variety of mitigation resources are available to communities. The Iowa Homeland Security & Emergency Management website: [http://www.iowahomelandsecurity.org/disasters/hazard\\_mitigation.html](http://www.iowahomelandsecurity.org/disasters/hazard_mitigation.html) provides planning and project related information as well as details on how major FEMA mitigation programs are implemented in the State.

HSEMD's training website provides information on upcoming training opportunities within the State: <http://homelandsecurity.iowa.gov/training/>.

Review of the FEMA HMA guidance (FY11 is the most current) is also encouraged as guidance provides information about application and eligibility requirements. This guidance is available from <http://www.iowahomelandsecurity.org/grants/HMA.html> or through FEMA's grant applicant resources page at [http://www.fema.gov/government/grant/hma/grant\\_resources.shtm](http://www.fema.gov/government/grant/hma/grant_resources.shtm).

The FEMA Hazard mitigation planning site <http://www.fema.gov/plan/mitplanning/index.shtm> contains the official guidance to meet the requirements of the Stafford Act, as well as other resources and procedures for the development of hazard mitigation plans.

Various funding programs are available from several state and federal agencies to assist local jurisdictions in accomplishing their mitigation activities and goals. A detailed listing of programs, information on each program, and contact information is also available from the 2010 State Hazard Mitigation Plan.

# Jackson County Multi-Jurisdictional Multi-Hazard Mitigation Plan 2013

Developed by ECIA, Dubuque, Iowa  
Homeland Security and Emergency Management Programs



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

**2012**

Developed by ECIA, Dubuque, Iowa

Homeland Security and Emergency Management Programs

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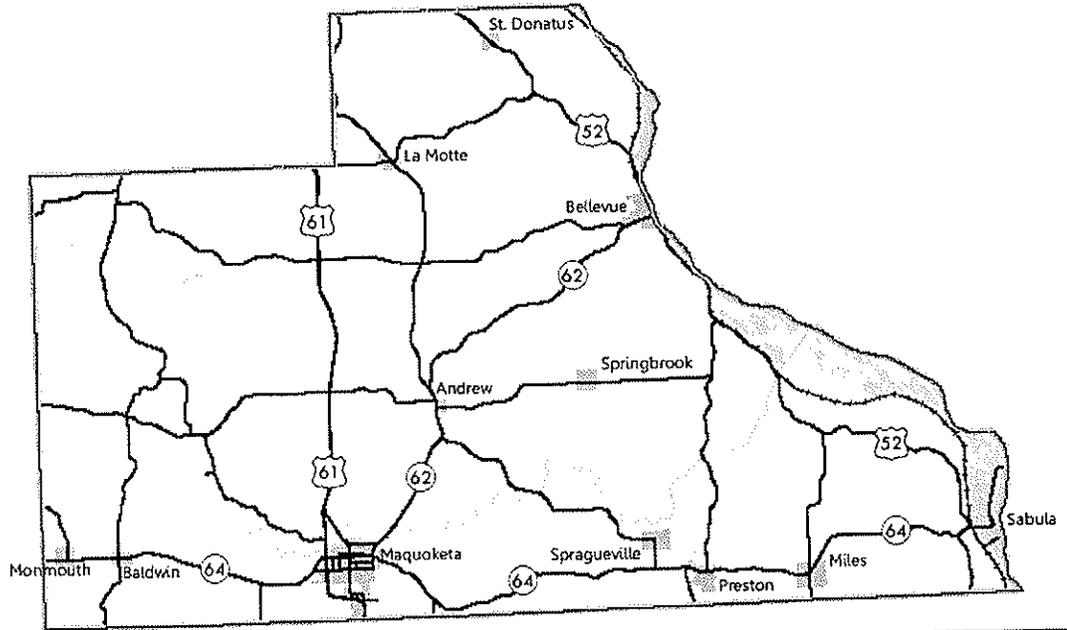
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- Appendix A: Planning Process Documentation
- Appendix B: Announcements of Meetings and Draft Posting
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- Appendix F: Critical Facilities Maps
- Appendix G: Jackson County Licensed Day Care Centers & Preschools
- Appendix H: HAZUS 100-Year Flood Plain Maps
- Appendix I: Mitigation Measures from Previous Hazard Mitigation Plans

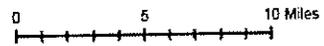
Jackson County Multi-Jurisdictional Hazard Mitigation Planning

Planning Area and Jurisdictions



Legend

Corporate Boundary



## Executive Summary

Each year, natural disasters in the United States take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars each year to help communities, organizations, businesses, and individuals recover from disasters. These losses only partially reflect the true cost of disasters, because additional expense to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Additionally, many natural disasters are predictable. Many more are repetitive, often with the same results. Many of the damages caused by these events can be alleviated or even eliminated.

FEMA, now a part of the US Department of Homeland Security, has made reducing losses from natural disasters one of its primary goals. Hazard mitigation planning and subsequent implementation of projects, measures, and policies developed through those plans, is the primary mechanism in achieving these goals. Mitigation planning has resulted in the implementation of projects that have successfully reduced disaster damages.

This plan was developed pursuant to the regulations of the Disaster Mitigation Act (DMA) of 2000. The DMA revises the Robert T. Stafford Disaster Relief and Emergency Assistance Act by adding Section 322, which provides new and revitalized emphasis on hazard mitigation, including a new requirement for local mitigation plans. These new local mitigation planning regulations are implemented through 44 CFR Part 201.6.

The DMA requires state and local governments to develop multi-hazard mitigation plans to maintain their eligibility for certain federal disaster assistance and hazard mitigation funding programs. Communities at risk from natural disasters cannot afford to jeopardize this funding.

More importantly, proactive mitigation planning at the local level can help reduce the cost of disaster response and recovery to property owners and government by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruption. Jackson County and its participating jurisdictions have been affected by several disasters in the past and are committed to reducing disaster impacts and maintaining eligibility for federal mitigation grant funding.

Natural hazards mitigation is defined as sustained action taken to reduce or eliminate long-term risk to human life and property from hazards. Natural hazards mitigation planning is the process through which natural hazards that threaten communities are identified, likely impacts of those impacts are determined, prioritized, and implemented. This plan documents the natural hazards mitigation planning process for Jackson County, identifies natural hazards and risks within the vulnerability and make the communities of Jackson County more disaster resistant and sustainable. Information in this plan can be used to help guide and coordinate mitigation activities and local land use decisions.

## PREREQUISITES – PARTICIPATION INFORMATION

44 CFR requirement 201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

The following jurisdictions and special districts that meet the FEMA definition of “local government” participated in the development of this plan and have adopted the multi-jurisdictional plan. Resolutions of Adoptions are included on the following pages. The plan was adopted and resolutions are included in Appendix B.

If a jurisdiction had a single-jurisdiction hazard mitigation plan the date the plan was approved is noted.

- Jackson County, Lead Agency
- City of Andrew 9/23/2009
- City of Baldwin
- City of Bellevue 9/3/2009
- City of LaMotte 8/15/2008
- City of Maquoketa 5/20/2004
- City of Miles
- City of Monmouth
- City of Preston 6/28/2005
- City of Sabula 4/27/2005
- City of Spragueville 8/31/2009
- City of Springbrook 5/26/2009
- City of St. Donatus 11/2/2009
- City of Zwingle
- Andrew Community School District
- Bellevue Community School District
- East-Central Community School District
- Maquoketa School District
- Preston School District

## CHAPTER 1: 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.

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.

The Disaster Mitigation Act of 2000 requires all local governments to assess their risks to natural hazards and identify actions that can be taken in advance to reduce future losses. The law requires all local governments and districts to have an approved Multi-Hazard Mitigation Plan after November 1, 2004, to be eligible for federal disaster assistance and hazard mitigation funding programs.

To assist Jackson County in the preparation of the mitigation plan, the State of Iowa Homeland Security and Emergency Management Division (IAHSEMD) (IDEM) awarded a contract to Jackson County who in turn contracted with East Central Intergovernmental Association (ECIA). ECIA's role is to assist Jackson County with the completion of a FEMA-approved multi-jurisdictional local hazard mitigation plan, meeting the requirements of the Disaster Mitigation Act of 2000.

The State of Iowa determined that county-wide multi-jurisdictional plans would be more effective tools than the single jurisdiction plans because several of the natural hazards are considered county-wide threats and affect more than one jurisdiction in a single event. Also, the uniformity of a multi-jurisdictional plan will allow for better management and consistency.

The Jackson County Emergency Management Agency was the point of contact in developing this plan and to assist participating jurisdictions. ECIA has assisted by facilitating the planning process, collecting the necessary data from planning committee members and other sources as indicated throughout the plan, and performing other technical services, including preparation of the risk management assessment and plan document.

ECIA and the Jackson County Emergency Management Agency worked together to establish the framework and process for this planning effort using FEMA's *Multi-Hazard Mitigation Planning Guidance under the Disaster Mitigation Act of 2000* (2004) and the *State and Local Mitigation Planning How-To Guides* (2001), which includes the *Multi-Jurisdictional Mitigation Planning How-To Guide* (2006). The plan is structured around a four-phase process:

- 1) Organize Resources
- 2) Assess Hazards and Risks
- 3) Develop a Mitigation Plan
- 4) Evaluate the Work

The remainder of this chapter provides a narrative description of the steps taken to prepare the hazard mitigation plan.

## 1.1 Phase 1: Organize Resources

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### Step 1: Get Organized

It was determined at the onset, that this plan would be a multi-jurisdictional plan with Jackson County Emergency Management Agency serving as the contact agency. ECIA, in conjunction with Jackson County EMA, sent out invitations for the kick-off meetings to all municipalities and special districts within the planning area as well as neighboring jurisdictions that could contribute to the planning process. Each jurisdiction that chose to participate in the planning process and development of the plan was required to meet strict plan participation requirements defined at the beginning of the process, which included the following:

- Designate a representative to serve on the Jackson County Hazard Mitigation Planning Team (HMPT)
- Participate in HMPT meetings including reviewing all existing Hazard Mitigation single-jurisdictions in place and determining which content was still accurate and what needed to be updated or omitted. Every existing segment of current plans was reviewed and appropriately updated by the HMPT. For those plans written within the past 12 months, if the rankings and mitigation actions remained the same, they were update and incorporated into the multi-jurisdictional plan. If new data or information, such as population changed, the new data was incorporated. See Appendix I for complete information on which sections were changed.
- For jurisdictions where no plan existed, the HMPT used the template of a single jurisdiction plan to collect data and to incorporate into the new plan.
- Provide data and information to complete the plan, identify at least one mitigation action and complete action implementation worksheets
- Review and comment on plan drafts
- Inform the public, local officials, and other interested parties about the planning process and provide an opportunity for them to comment on the plan
- Formally adopt the mitigation plan

See Appendix A for the attendance of representatives at each HMPT meeting, sign-in sheets and agendas. In the case of the cities of St. Donatus and Spragueville, Lyn Medinger, the Jackson County Emergency Management Coordinator served as the designated representative. The school districts of Andrew, Bellevue and Preston also had designated representatives and they are noted in Appendix A as well. EMC Medinger and Project Coordinator Jennifer Walker communicated information regularly following planning meetings to all jurisdictions and input was solicited and changes were made as appropriate.

### Step 2: Plan for Public Involvement

**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 state and prior to plan approval.**

During the drafting of the plan, HMPT members provided their constituents with information about the plan's progress including goals and objectives and the hazard ranking by posting information on local websites, by discussing and fire and EMT meetings, but having drafts available for review and input at local meetings, school board meetings, and town events.

The public was also given an opportunity to provide input on a draft of the complete plan prior to its submittal to the State and FEMA. Jackson County placed the draft on the County's website, as well as placed an announcement in the Maquoketa Sentinel Press that notified area residents that the plan draft was available for review and comment at the Jackson County Emergency Management Agency office from January 8, 2012 to February 8, 2012. The announcements are provided in Appendix B.

### **Step 3: Coordinate with Other Departments and Agencies**

**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 nonprofit interests to be involved in the planning process. (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.**

### **Involvement of Key Stakeholders**

Key federal, state, and local stakeholders were involved from the beginning of the process. Federal FEMA officials and State Agency Representatives were invited to HMPT meetings and offered the opportunity to provide input. Representatives from the surrounding Iowa counties of Dubuque, Jones, and Clinton were invited to attend the kickoff meetings as well as leaders from the public school districts.

### **Existing Plans, Studies, Reports and Technical Information**

At each of the local meetings of the HMPT, members reviewed information of the local area, including dams, bridges, utility infrastructure and floodplain. Each community also reviewed previous Hazard Mitigation Plans, NCDC Data, Jackson County Tax Assessor Records, and US Census Data as well as the State of Iowa Hazard Mitigation Plan. Information from these plans and studies has been incorporated in the plan where appropriate. The HMPT had representation from each community and the planning team reviewed each single-jurisdiction hazard mitigation plan for accuracy. The team determined which portions of the plan were still required and pertinent. Once selections were deemed pertinent, the information was taken to a meeting in the said jurisdiction and the group either confirmed the information was still accurate or they updated using the tools noted above. Every jurisdiction had the opportunity to review all sections of the plan and to provide input.

## 1.2 Phase 2: Assess Hazards and Risk

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### Step 4: Identify the Hazards

ECIA assisted the HMPT in a process to identify the natural hazards that have or could impact communities in Jackson County. The HMPT reviewed the 16 natural hazards that can occur in Iowa as indicated in the August 2007 State of Iowa Hazard Mitigation Plan. Several factors, including The Great Flood of 2008 and several state disaster declarations influenced the creation of the parameters for multi-jurisdictional plans that included focusing on 16 natural hazards rather than trying to cover too much information (such as man-made hazards that were sometimes assessed in previous plans and are often covered in community disaster plans). During the kickoff meetings, participants identified which hazards *have occurred, potentially could occur* or are *unlikely to occur* within Jackson County. Once the lists were compared and found equal, the HMPT determined that only those hazards that have occurred or potentially could occur would be further profiled and rated in the HM plan.

### Step 5: Profile the Hazards

At the kickoff meetings, ECIA distributed data collection worksheets to be completed and shared by each member of the HMPT. This allowed for collection of information on historic hazard events that have impacted the planning area. In addition, the information provided by the HMPT, research was completed using the internet, existing reports and plans, and existing geographic information systems (GIS) layers to research past hazard events and determine the location, extent, magnitude, and future probability of all hazards identified in step 4 above. The individual hazard profiles can be found in Section 3.

### Step 6: Inventory of Assets

Participating jurisdictions inventoried their assets at risk to natural hazards – overall and in identified hazard areas. During meetings with individual jurisdictions, the communities were asked to identify inventory of their specific assets. After profiling the hazards that could affect Jackson County, the HMPT collected information to describe the likely impacts of future hazard events on the participating jurisdictions. This step included two parts: a vulnerability assessment and a capability assessment.

Vulnerability Assessment – Participating jurisdictions inventoried their assets at risk to natural hazards – overall and in identified hazard areas. These assets included total number and value of structures; critical facilities and infrastructure; historic and cultural assets; economic assets; and vulnerable populations. The HMPT also analyzed development trends in hazard areas. FEMA's loss estimation computer software, HAZUS-MH was used to estimate potential losses due to a 100-year flood in Jackson County streams that receive drainage from 10 square miles or more.

Capability Assessment – 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 to disasters. Participating jurisdictions collected information on their regulatory, personnel, fiscal, and technical capabilities, as well as ongoing initiatives related to interagency coordination and public outreach. This information is included in Chapter 3.

### **Step 7: Estimate Losses**

Where sufficient information was available, a variety of methods was used to estimate losses for each profiled hazard that received a Priority 1 or Priority 2. For the flood hazard, FEMA's loss estimation computer software, HAZUS-MH was utilized to estimate losses in the planning area as a result of a 100-year flood event. The methodology is described in detail for each hazard analysis that included a loss estimate. This information can be found in Section 3.2.

Results of the risk assessment were presented and comments discussed at the meeting of the HMPT on November 15, 2011.

## **1.3 Phase 3: Develop the Mitigation Plan**

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### **Step 8: Identify Goals and Objectives**

Once the HMPT had completed the tasks of profiling hazards and estimating their potential losses, goals were developed. During each meeting, the committee reviewed the results of the risk assessment, focusing on the key issues identified in Section 3.2 that focused on specific problems and trends and patterns identified through the review of previous hazard events. With the profiles hazards and their potential impacts in mind, the committee began a brainstorming session to identify the goals and objectives of the mitigation strategy for the planning area. After sharing ideas among the group, consensus was achieved on four goals. Detailed information on these goals and the associated objectives that were selected to steer the committee toward appropriate mitigation actions can be found in Section 4.3.

### **Step 9: Develop Potential Mitigation Actions**

During the Goals and Objectives meeting of the HMPT, committee members were provided with example mitigation actions and asked to complete mitigation project worksheets at the meeting. Each committee member was encouraged to take the forms back to their constituents to discuss ongoing mitigation projects and future needs. At the final HMPT meeting, participants reviewed all the proposed projects and held a discussion regarding additional projects that might benefit Jackson County. The potential projects were sorted into the appropriate goal and objective to ensure that each was covered by appropriate mitigation actions. The group utilized the STAPLEE criteria (Socially, Technically, Administratively, Politically, Legally, Economically and Environmentally rated benefits of a goal) to evaluate and rank each potential mitigation project. Each participating jurisdiction provided at least one, unique mitigation activity. There is at least one mitigation activity to support each goal and objective. The modified STAPLEE criteria form and a table showing the results of the STAPLEE analysis for each project can be found in Appendix C.

## **1.4 Phase 4: Evaluate the Work**

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### **Step 10: Draft of the Mitigation Plan**

A complete draft of the plan was made available on the Jackson County website and in hard copy for review and comment by the public and other agencies and interested stakeholders at the Jackson County Emergency Management Agency offices from January 8, 2012 to February 8, 2012. Methods for inviting interested parties and the public to review and comment on the plan were discussed in Steps 2 and 3. Comments were integrated into a final draft for submittal to the Iowa Homeland Security and Emergency Management Division (IAHSEMD) and FEMA Region VII.

### **Step 11: Adopt the Plan**

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.

### **Step 12: Implement and Maintain the Plan**

The HMPT developed and agreed upon an overall strategy for plan implementation and for monitoring and maintaining the plan over time during the November 15, 2011 meeting. This strategy is described in Chapter 5.

## CHAPTER 2: PLANNING AREA DESCRIPTIONS & CAPABILITIES

### 2.1 Jackson County Planning Area

#### History

The City of Maquoketa is the county seat of Jackson County, Iowa. Jackson County was named after Andrew Jackson, the seventh President of the United States.

#### Geography

According to the U.S. Census Bureau, the county has a total land area of 656 square miles. Located in northeastern Iowa, Jackson County is surrounded by the counties of Dubuque, Jones, and Clinton.

#### Major highways

US Highway 61 crosses the county north to south, while US Highway 52 follows the eastern edge of the county and runs, generally, along the Mississippi River. State Highways 62 and 64 meander east to west through Jackson County, meeting in the city of Maquoketa. Numerous paved county roads connect all of the incorporated cities and unincorporated villages throughout the county.

#### Demographics

Jackson County, as a whole, saw moderate growth from the 1950 census until the farm crisis of the 1980s. By the 1990 Census, the county saw a loss of 11.3% of its population. However from 1950 to 2010, the largest population growth, from its smallest to its largest, was only a variation of 3,881 people. In 2010, the population fell back to 19,848, which is below the 60 year average population of Jackson County. Reflective of the State of Iowa, the population of Jackson County is an aging, rural population, which makes hazard mitigation planning more important in having plans in place for agrarian, elderly populations that may need extra help in both preparing for natural hazards, as well as recovering from them.

**TABLE 2.1**

#### **JACKSON COUNTY AND STATE OF IOWA POPULATION COMPARISON**

| Year | Jackson County | % of Change | State of Iowa | % of Change | County as % of State |
|------|----------------|-------------|---------------|-------------|----------------------|
| 1950 | 18,622         | --          | 2,621,073     | --          | .7                   |
| 1960 | 20,724         | 11.3        | 2,757,537     | 5.2         | .7                   |
| 1970 | 20,839         | 0.6         | 2,824,376     | 2.4         | .7                   |
| 1980 | 22,503         | 8.0         | 2,913,808     | 3.1         | .7                   |
| 1990 | 19,950         | -11.3       | 2,776,831     | -4.7        | .7                   |
| 2000 | 20,296         | 1.7         | 2,926,324     | 5.3         | .7                   |
| 2010 | 19,848         | -0.9        | 3,046,355     | 4.1         | .6                   |

## **Major Rivers and Watersheds**

The Mississippi River provides the eastern boundary for Jackson County. The Maquoketa River flows diagonally through Jackson County from the Northwest to the Southeast, emptying into the Mississippi River. Numerous small creeks, branches of rivers, and streams flow through the County.

The two major watersheds in Jackson County are Apple-Plum and Maquoketa.

## **2.2 Jurisdictional Descriptions and Capabilities**

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### **Unincorporated Jackson County**

#### **Description of community**

The unincorporated areas of Jackson County are primarily agricultural based. The topography varies through the County and the associated land capabilities drive the type of farm-based enterprises that operate in a given location. The Mississippi River runs from north to south on the eastern boundary of the County, while the Maquoketa River runs from northwest to the southeast. Both rivers provide recreational opportunities such as boating, canoeing, fishing and skiing, depending on the segment of the river.

Jackson County is located in northeastern Iowa, approximately 30 miles from the larger communities of Dubuque and Clinton. Maquoketa is the county seat for Jackson County. Population decreased slightly in the past 10 years, which is in accord with many Iowa Counties.

#### **Land Use and Development Trends**

The land in Jackson County is primarily used for agricultural purposes, including but not limited to corn, soybeans, and pasture ground for grazing livestock. However, in contrast to other counties located further west of the Mississippi River, Jackson County does not have the abundance of land suitable for widespread crop production. The closer one travels to the Mississippi River, the more variation in elevation one sees. This proves less advantageous for crop production and more advantageous for pastures and timber, as the land undulates and becomes rockier the further eastward one travels, often terminating in limestone bluffs overlooking the Mississippi River.

Residential development in Jackson County has increased in many of the scenic areas of Jackson County. Rural areas around Bellevue and Sabula are seen as desirable for large tract residential uses, due to the amount of scenic views and timbered areas that provide both uninhibited views of the landscape and seclusion respectively. The major concentrations of rural residential development in Jackson County are rural areas around the incorporated communities, in particular Maquoketa, Bellevue, and Preston. Unique to Jackson County is Leisure Lake, an unincorporated subdivision in northwest Jackson County that is residential in nature. Designed around a small lake, Leisure Lake was intended to provide weekend and vacation housing opportunities for people, but has since provided more permanent housing for many people.

Jackson County does not have a Comprehensive Land Use Plan in place. Jackson County relies on a Land Use Policy Statement to guide development countywide. Jackson County has adopted a Zoning Ordinance and Zoning Map, and also regulates the division of land through a Platting Ordinance. Jackson County also has adopted a Floodplain Management Ordinance based on minimum requirements mandated by the Federal Emergency Management Agency (FEMA).

### **Technical and Fiscal Resources**

Jackson County has 101 employees, including full-time, part-time and elected officials. Revenues for governmental uses flow primarily from Property Taxes collected. There is a local one cent Sales Tax that generates revenues for road and street departments. Government services are organized by the followed elected officials: Board of Supervisors (3); Sheriff, Recorder, Treasurer, Auditor and County Attorney (1 each). There is a Recreation Tax District that currently has three Trustees.

Jackson County's roads are developed and maintained by the County Engineers Office and staff. Other recreation facilities and opportunities are organized and provided by the Jackson County Conservation Department and staff.

### **Existing Plans and Policies**

- The County has an Emergency Service Functions plan in process and the Jackson County Board of Supervisors contracts with Jackson County Regional Health Center for Public Health for a Community Risk Plan from 2002.
  
- The County also has current plans for the following:
  - Emergency Management Plan
  - Emergency Response Plan
  - Jackson County Public Health Clinic Environmental Mental Health Plan
  - Jackson County Emergency Health Plan

## **Andrew**

### **Description of community**

The City of Andrew is an incorporated city supporting a population of 434 persons. The City of Andrew is a small rural community located in center of Jackson County located on State Highway 62, seven miles north of Maquoketa.

### **Land Use and Development Trends**

The City of Andrew has no subdivisions and has had no land annexations and does expect substantial changes in the near future. There are no rivers or creeks in Andrew and there is not history of riverine flooding.

### **Technical and Fiscal Resources**

The City has a small workforce, including four part-time employees. There is also a volunteer fire department and volunteer ambulance department. Revenues are provided through property

taxes, local option sales tax, and user fees. The City has the ability to issue general obligation and revenue debt.

### **Existing Plans and Policies**

The City of Andrew's most recent Hazard Mitigation plan was approved by FEMA in 2009.

### **Other Mitigation Activities**

The City has two outdoor weather sirens for alerting citizens of a tornado. They are located on East and West Emmett Streets, with one on the Lutheran Church and the other on the Presbyterian Church.

The City of Andrew has their own snow removal equipment for removing snow from their streets.

Culverts, that were a problem in the one incident of flash flooding in the past 25 years, have been replaced.

During severe winter storms and other cold temperature extremes, the fire station is used as a warm house.

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## **Baldwin**

### **Description of community**

The City of Baldwin is an incorporated municipality supporting a population of 109. The City is located in the southwest corner of the County on State Highway 64, just a few miles west of Highway 61 and the City of Maquoketa.

### **Land Use and Development Trends**

The City of Baldwin does not have zoning ordinances or a building code, nor does it have a comprehensive plan. The City has experienced some flooding in the floodplain south of highway 64 on the east side of town. Damage has been minimal and there are no substantial changes expected in the size of the town in the near future.

### **Technical and Fiscal Resources**

The City of Baldwin is a small city with two part-time employees. The City has the authority to levy taxes for specific purposes and can incur debt through general obligation bonds.

### **Existing Plans and Policies**

The City's most recent Hazard Mitigation Plan is from 2001. The City of Baldwin is a participant in the National Flood Insurance Program; however, there are no structures in this designated area.

### **Other Mitigation Activities**

The City of Baldwin is enforcing its floodplain ordinances.

The City contracts with private contractors on an annual basis for removing snow from its streets.

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## **Bellevue**

### **Description of community**

The City of Bellevue is located in extreme eastern Jackson County on the banks of the Mississippi River. Intersected by US Highway 52 and Iowa State Highway 62, Bellevue is 20 miles from both Maquoketa (to the southwest) and Dubuque (to the north), and less than 1 hour from the Quad Cities (to the south). The population of the City of Bellevue is 2,191.

The Mississippi River flows southeast at Jackson County and forms the eastern boundary of the City. Mill Creek, a tributary flowing east to the Mississippi River runs through the southern portion of the City.

### **Land Use and Development Trends**

The City of Bellevue has had numerous annexations since 1966. The City has two major subdivisions with approximately 90 lots available, as well as some minor subdivisions with approximately 15 lots available. There are also approximately 20 condominiums available for sale and approximately ten assisted living units available for rent in addition to normal rental units.

The City of Bellevue does have a comprehensive plan that was updated most recently in 2008.

The City of Bellevue has approved zoning ordinances with the last update being 2007. The City does issue building permits for new construction and additions.

### **Technical and Fiscal Resources**

The City of Bellevue has 24 employees. The Public Works Director oversees the public works operations, including roads, parks, and water and sewer utilities. The City also has a volunteer fire department and volunteer First Responders team. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation and revenue debt.

### **Existing Plans and Policies**

The City had Pre-Disaster and Hazard Mitigation Plans in 2009 and 2001 respectively.

### **Other Mitigation Activities**

The City of Bellevue has three radio-controlled outdoor weather sirens for alerting citizens of a tornado. The sirens are located at Cole Park, the intersection of Riverview and High Streets, and the intersection of Vine and 4<sup>th</sup> Streets. The sirens are activated through the Jackson County Law Enforcement 911 Center. The outdoor weather siren covers the entire community. In addition, the City has a list of shelter spaces for emergency evacuations.

The City of Bellevue also invested in a new TV/cable system that was installed in 2008 and customers began receiving service in September 2008. The system provides internet and video services, and provides the emergency alert system.

City Hall has a backup generator, as do the City's water pumps.

The City of Bellevue performs their own snow removal for removing snow from their city streets.

In the event of extreme temperature conditions during the summer, the Bellevue City Hall, including the Bellevue Fire Department, have space available for those residents who suffer from extreme heat conditions. The Bellevue Community Center and the Bellevue Library also provide space for residents.

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## **LaMotte**

### **Description of community**

The City of LaMotte is located three miles east of Zwingle, 13 miles west of Bellevue, and 18 miles north of Maquoketa in Jackson County. The population of LaMotte is 260.

### **Land Use and Development Trends**

The City of LaMotte has no current subdivision developments and has had no land annexations, nor is there any substantial change anticipated in the near future.

### **Technical and Fiscal Resources**

The City has a small workforce of five part-time employees. There is also a volunteer fire department and volunteer first responder team. Engineering services are contract. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation and revenue debt.

### **Existing Plans and Policies**

The City of LaMotte's most recent Hazard Mitigation plan was approved by FEMA in 2008.

### **Other Mitigation Activities**

The City has one outdoor warning siren for alerting citizens of a tornado; it is located at the fire station.

The City performs its own snow removal from city streets.

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## **Maquoketa**

### **Description of community**

The City of Maquoketa is located along US Highway 61, mid way between Dubuque to the north and Davenport to the south. Maquoketa has the largest population in Jackson County and it is the County Seat. As of 2010, the population of Maquoketa was 6,141.

### **Land Use and Development Trends**

Maquoketa has zoning ordinances and they were last updated in 1987 and are re-codified every five years.

The City does have a comprehensive land use plan that was last updated in 2005. The plan's purposes is to guide and accomplish a coordinated, adjusted and harmonious development of the City and its environs which will, in accordance with the present and future needs, best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development.

### **Technical and Fiscal Resources**

The City of Maquoketa has 31 full-time, nine part-time, and approximately 35 volunteer firefighters. The City is able to contract for planners/engineers to manage land development and management issues. The City's funding sources are property taxes and fees for city services. The City has the authority to levy taxes for specific purposes. The City can incur debt through obligation bonds, and special tax bonds and has the authority to withhold spending in special hazard prone areas.

### **Existing Plans and Policies**

The City has adopted a planning and zoning commission and has subdivision ordinances, but does not have a building code.

The City of Maquoketa's most recent hazard mitigation plan is from 2004.

### **Other Mitigation Activities**

The City of Maquoketa has three warning sirens that are radio controlled alarms and are activated by the Jackson County Law Enforcement Center. The alarms are activated throughout Jackson County to all of the schools, Maquoketa Fire Department, and Law Enforcement Center.

Jackson County Public Hospital is used as a site for treating persons suffering from extreme heat.

Maquoketa does have a snow removal policy that allows the city's snow removal equipment to remove snow from the streets without obstacles such as parked vehicles in the streets.

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## **Miles**

### **Description of Community**

The City of Miles is located 19 miles east of Maquoketa on Highway 64 in Jackson County and supports a population of 445. The population of Miles is 445.

### **Land Use and Development Trends**

The City of Miles has no subdivisions and has had no land annexations. The City does have restricted residence district ordinances and the City does issue building permits. The City of Miles does not have a comprehensive plan. No substantial changes are anticipated in the near future.

### **Technical and Fiscal Resources**

The City of Miles employs two full-time employees. The City has a volunteer fire department and ambulance service. The Public Works Director oversees the public works operations, including roads, parks, and water and sewer utilities. Engineering services are contracted out and the City has reserved funds for equipment replacement and maintains reasonable levels of reserve funds. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation and revenue debt.

### **Existing Plans and Policies**

The City of Miles's most recent Hazard Mitigation Plan dates from mid-2001. The City of Miles is a NOAA Storm Ready Community.

### **Other Mitigation Activities**

Weather spotter training is offered by the National Weather Service and facilitated by the Jackson County Emergency Management on an annual basis. The City is served by two all-hazard outdoor warning sirens.

Miles provides its own snow removal equipment.

The City of Miles is considering designating the fire station as an emergency shelter until city hall has its own generator.

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## **Monmouth**

### **Description of community**

The City of Monmouth is located along US Highway 64, eleven miles west of Maquoketa and seven miles east of Wyoming in Jackson County. As of the 2010 Census, the population of the City was 153.

### **Land Use and Development Trends**

The City of Monmouth has no subdivisions and has had no land annexations. In addition, the City of Monmouth has no zoning ordinances and does not anticipate any substantial changes in the near future.

### **Technical and Fiscal Resources**

The City of Monmouth has three part-time staff members. The City is able to contract for planners/engineers to manage land development and management issues. Snow removal is contracted out. A part-time certified person is responsible for oversight of day-to-day operations of the sewer and water departments. The City's funding sources are property taxes and fees for city services. The City has authority to levy taxes for specific purposes. The City can incur debt through obligation bonds and special tax bonds and has the authority to withhold spending in special hazard prone areas.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan was approved in 2001. The City does not have a comprehensive plan or zoning and building ordinances.

### **Other Mitigation Activities**

The City of Monmouth does not have an outdoor warning siren to alert citizens of a tornado.

The City of Monmouth contracts out their snow removal.

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## **Preston**

### **Description of community**

The City of Preston is located 15 miles east of Maquoketa on highway 64 in Jackson County. County Road Z-34 also bisects the town running north and south. As of the 2010 Census, the population of the City was 1,012.

### **Land Use and Development Trends**

The City of Preston does not have a Comprehensive Land Use Plan and no substantial changes are anticipated in the near future.

### **Technical and Fiscal Resources**

The City of Preston employs eight full-time employees and six part-time employees. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation and revenue debt.

### **Existing Plans and Policies**

The City's most recent Hazard Mitigation Plan dates to 2005.

### **Other Mitigation Activities**

The City of Preston currently has two outdoor weather sirens for alerting citizens of a tornado and has plans to add another in the St. Joseph's Addition and East of town.

The City of Preston performs its own snow removal. And in the event of extreme heat, there are two rooms available at Jackson County Public Hospital in Maquoketa.

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## **Sabula**

### **Description of community**

The City of Sabula is located along State Highway 64, 28 miles east of Maquoketa. US Highway 52 intersects State Highway 64 from the north end of the community and US Highway 67 intersects highway 64 on the west end of the community. As of the 2010 Census the population of the City was 576.

### **Land Use and Development Trends**

The City of Sabula has no subdivisions and has no land annexations. The main channel of the Mississippi River flows along the east side of the City. The Sabula Lakes are located on the west side of the City. There are sloughs, marshes, and other aquatic bodies of water in a two-mile radius of the City. Development is heavily restricted based on the natural landscape of the area.

### **Technical and Fiscal Resources**

The City of Sabula has seven full-time and six part-time employees. The City is able to contract for planners/engineers to manage land development and management issues as well as oversight of construction projects. The community has access to capital improvements project funding, fees for city services, and has the authority to levy taxes for specific purposes. The City can incur debt through general obligation bonds, and special tax bonds and has the authority to withhold spending in special hazard prone areas.

### **Existing Plans and Policies**

Sabula's most recent Hazard Mitigation Plan was approved in 2005.

### **Other Mitigation Activities**

The City of Sabula has two outdoor weather sirens that are radio controlled alarms. The alarms are heard at the schools, Sabula Fire Department, and Sabula Police Department.

Sabula does have a snow removal policy that allows the city's snow removal equipment to remove snow from the streets without obstacles such as parked vehicles.

In 2006, the city purchased a new flood pump to help flood abatement.

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## **St. Donatus**

### **Description of Community**

The City of St. Donatus is located along US Highway 52, eleven miles south of Dubuque and ten miles north of Bellevue in Jackson County. As of the 2010 Census, the population of the City was 135.

### **Land Use and Development Trends**

The City of St. Donatus does not have a comprehensive land use plan and there is no new building anticipated in the near future. There are no zoning ordinances, but the city does have building codes and no substantial changes are anticipated in the near future.

### **Technical and Fiscal Resources**

The City of St. Donatus has four part-time staff members: the city clerk, two wastewater treatment facility workers, and a person who does public maintenance. The City is able to contract for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is contracted. The City's funding sources are property taxes and fees for city services. The City has authority to levy taxes for specific purposes. The City can incur

debt through obligation bonds and special tax bonds and has the authority to withhold spending in special hazard prone areas.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan was approved in 2010 and currently, the City of St. Donatus is not a participant in the National Flood Insurance Program but is considering membership.

### **Other Mitigation Activities**

None identified.

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## **Spragueville**

### **Description of community**

The City of Spragueville is an incorporated municipality located in Jackson County, one mile north of Highway 64 on Division Street. As of the 2010 Census, the population of the City was 81.

### **Land Use and Development Trends**

The City of Spragueville has no subdivisions and has had no land annexations. In addition, the city has no zoning ordinances and no housing developments underway and does not anticipate any in the near future.

### **Technical and Fiscal Resources**

The City of Spragueville has three part-time staff members. The City is able to contract for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is a 28E agreement with Jackson County. A part-time certified person is responsible for oversight of day-to-day operations of the sewer, but water is all residents have their own wells. The City's funding sources are property taxes and fees for city services.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan dates from 2009 and the city does not have a comprehensive plan.

### **Other Mitigation Activities**

The City relies on local radio stations and the National Weather Service to provide weather related information to the community. Alliant Energy is contacted in the event of downed power lines from a severe windstorm or thunderstorm.

The Preston Fire and Police Departments are under contract to assist the City of Spragueville and its residents.

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## Springbrook

### **Description of community**

The City of Springbrook is located seven miles southeast of Bellevue and 15 miles northeast of Maquoketa in Jackson County. As of the 2010 Census, the population of the City was 144.

### **Land Use and Development Trends**

There are no subdivisions or land annexations and no significant growth anticipated in the near future.

### **Technical and Fiscal Resources**

The City of Springbrook has three part-time staff members. The City is able to contract for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is contracted. A part-time certified person is responsible for oversight of day-to-day operations of the sewer and water departments. The City's funding sources are property taxes and fees for city services. The City has authority to levy taxes for specific purposes. The City can incur debt through obligation bonds and special tax bonds and has the authority to withhold spending in special hazard prone areas.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan dates from 2009.

### **Other Mitigation Activities**

The City of Springbrook has one outdoor warning siren. Springbrook has their own, independent all volunteer fire and rescue, EMTs and ambulances.

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## Zwingle

### **Description of community**

The City of Zwingle is located off of US Highway 61 and is situated in both Jackson and Dubuque counties. As of the 2010 Census the population of the City was 91.

### **Land Use and Development Trends**

There are no subdivisions or land annexations and no significant growth is anticipated in the near future.

### **Technical and Fiscal Resources**

The City of Zwingle has no employees and relies solely on the service of volunteers. The City is able to contract for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is contracted. Also contracted out is the oversight of day-to-day operations of the sewer and well water. The City's funding sources are property taxes and fees for city services. The City has authority to levy taxes for specific purposes. The City can incur debt through obligation bonds and special tax bonds and has the authority to withhold spending in special hazard prone areas.

## Existing Plans and Policies

The previous Hazard Mitigation Plan dates from 2002.

## Other Mitigation Activities

The City of Zwingle has one outdoor warning siren. The City provides snow removal on all municipal roads and street with city-owned equipment.

Table 2.2 summarizes existing mitigation-related plans and policies in Jackson County and participating incorporated cities:

**Table 2.2 Summary of Existing Mitigation-Related Plans and Policies in Jackson County**

| Capability                                   | Jackson County                         |
|--|--|
| Master/Comprehensive Plan                    | No                                     |
| Emergency Operations Plan                    | No                                     |
| Capital Improvements Plan                    | None, other than Secondary Roads Plan. |
| Building Code                                | Follow state codes                     |
| Building Code Year                           | No                                     |
| Fire Department ISO Rating                   | No, Individual jurisdictions have      |
| Storm Water Management Ordinance             | Partial                                |
| Floodplain Management Ordinance              | Yes, Updated in January 2010           |
| Zoning Ordinance                             | No                                     |
| Subdivision Ordinance                        | No                                     |
| Erosion Management Ordinance                 | No                                     |
| National Flood Insurance Program Participant | Yes                                    |
| Flood Insurance Rate Map Delineation Date    | August 2009                            |
| Letter of Map Adjustments (LOMA)             | Yes                                    |

## Jackson County School Districts

There are five Unified School Districts that serve Jackson County. They are Andrew, Bellevue, East Central (Miles), Maquoketa and Preston School Districts. All chose to participate in this multi-jurisdictional hazard mitigation plan and provided additional data. All school districts had representation at a planning session, reviewed a draft of the plan, and signed a resolution adopting the county-wide plan. None of the school districts identified any hazards unique to their campuses and agreed that their rankings are reflected in the individual jurisdictional assessments. Reflective of the county ranking, Severe Winter Storm and transportation concerns during storms is one of the greatest concerns. The school districts in Jackson County are fairly small in size but large in square miles and therefore, travel safety becomes a principal concern for district officials throughout the county. Marquette Parochial School system is located in Bellevue and Western Dubuque School District dips into Jackson County in the northwest corner of the county, but has no structures in the county. See [Appendix J](#) for an overlay of Jackson County School System's structures and the respective HAZUS flood maps. There are no school structures located in any flood zones. Furthermore, structures are not located in places where dam or levee failure would

be a concern. Information on capabilities with the public school districts as well as population served and district square miles is provided below in Table 2.3:

**Table 2.3 School District Capabilities**

| District                               | Student Population/<br>Employees* | District<br>Square Miles* | Regulatory Tools | Public<br>Safety<br>Officer on<br>Site | Financial<br>Resources | Current Education &<br>Mitigation Activities   |
|--|-----------------------------------|---------------------------|------------------|--|------------------------|--|
| Andrew                                 | 276                               | 98                        | Crisis Plan      | No                                     | PPEL, Sales<br>Tax     | Evacuation Plan for<br>students in all buildings.<br>Routine fire, tornado and<br>intruder drills.   |
| Bellevue                               | 599                               | 127                       | Crisis Plan      | No                                     | PPEL, Sales<br>Tax     | Evacuation Plan for<br>students in all buildings.<br>Routine fire, tornado and<br>intruder drills.   |
| East<br>Central<br>(Miles &<br>Sabula) | 370                               | 116                       | Crisis Plan      | No                                     | PPEL, SILO             | Evacuation Plan for<br>students/staff in all<br>facilities. Four fire and<br>tornado drills and routine<br>practice of lockdowns<br>and evacuations. |
| Maquoketa                              | 1,420                             | 172                       | Crisis Plan      | No                                     | PPEL, Sales<br>Tax     | Evacuation Plan for all<br>students in buildings.<br>Routine fire, tornado and<br>intruder drills.   |
| Preston                                | 336                               | 67                        | Crisis Plan      | No                                     | PPEL, Sales<br>Tax     | Evacuation Plan for all<br>students in buildings.<br>Routine fire, tornado and<br>intruder drills.   |

\*State of Iowa Education 2010-2011 Annual Transportation Data for Iowa Public Schools.

## 3 Risk Assessment

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**44 CFR Requirement §201.6 (c )(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.**

Risk to natural hazards is a combination of hazard, vulnerability, and capability. This chapter examines hazards and vulnerability. Jurisdictional annexes to the plan discuss the capabilities for each of the participating jurisdictions as well as the hazards and vulnerability particular to their area.

The risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The goal of the risk assessment is to estimate the potential loss for Jackson County, including loss of life, personal injury, property damage, and economic loss, from a hazard event. The risk assessment process allows communities in Jackson County to better understand their potential risk to natural hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

The risk assessment for Jackson County and its jurisdictions followed the methodology described in the FEMA publication 386-2, *Understanding Your Risks: Identifying Hazards and Estimating Losses* (2002), which included a four-step process:

1. Identifying Hazards
2. Profile Hazard Events
3. Inventory Assets
4. Estimate Losses

This chapter is divided into three parts: hazard identification, hazard profiles, and vulnerability assessment:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten the planning area and describes why some hazards have been omitted from further consideration.
- **Section 3.2 Hazard Profiles** discusses the threat to the planning area and describes previous occurrences of hazard events and the probability of future occurrence.
- **Section 3.3 Vulnerability Assessment** assesses the County's total exposure to natural hazards, considering critical facilities and other community assets at risk, and assessing growth and development trends. Hazards that vary

geographically across the planning area are addressed in greater detail. This section includes steps 3 and 4 from above.

### 3.1 Hazard Identification

**Requirement §201.6(c)(i): [The risk assessment shall include a description of the type...of all natural hazards that can affect the jurisdiction.**

#### 3.1.1. Methodology

The Hazard Mitigation Planning Team (HMPT) reviewed hazard specific data from a variety of sources, and discussed the impacts of each of the hazards required by FEMA for consideration, which are listed alphabetically below:

1. Dam Failure
2. Drought
3. Earthquake
4. Expansive Soil
5. Extreme Heat
6. Flash Flood
7. Grass or Wild Land Fire
8. Hailstorm
9. Landslide
10. Levee Failure
11. River Flood
12. Severe Winter Storm
13. Sinkhole
14. Thunderstorm & Lightning
15. Tornado
16. Windstorm

Data on the past impacts and future probability of these hazards in the Jackson County planning area was collected from the following sources:

- State of Iowa Hazard Mitigation Plan (2010)
- Information on past extreme weather and climate events from the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC)
- Federal Disaster Declarations from the Federal Emergency Management Agency (FEMA)
- USDA Farm Service Agency Disaster Declarations
- Various articles and publications available on the internet (sources are indicated where data is cited) and information obtained from HMPT members and their constituents.
- Existing single jurisdiction hazard mitigation plans.

The HMPT eliminated some hazards from further profiling because they do not occur in the planning area or their impacts were not considered significant in relation to other hazards. Table 3.1A lists these hazards and provides a brief explanation for their elimination.

**Table 3.1A Hazards Not Profiled in the Plan**

| Hazard          | Reason Eliminated             |
|-----------------|-------------------------------|
| Expansive Soils | Area not conducive to hazard. |

The HMPT identified 15 hazards that significantly affect the planning area and organized these hazards to be consistent with the Iowa Hazard Mitigation Plan (2007). Nine of the 15 hazards are considered to be, by the Jackson County HMPT, county-wide concerns and were rated as “Has Occurred” or “Could Occur”. They are:

1. Drought
2. Earthquake
3. Extreme Heat
4. Grass or Wild Fire
5. Hailstorm
6. Severe Winter Storms
7. Thunderstorm & Lightning
8. Tornado
9. Windstorm

The remaining six of the 15 hazards are considered to be location-specific hazards and will be discussed later. These hazards are profiled in further detail in the next section. All other man-made hazards are addressed in the Jackson County Emergency Operations Plan and appropriate annexes. Table 3.1B lists the six hazards that are addressed by each jurisdiction in the plan and indicate the hazard identified for the unincorporated county as well as each incorporated city as having occurred or could occur. This analysis method ensures that all of the land area in the planning area is considered. For the school districts, colleges, and other special districts, their boundaries, assets, and facilities overlap city and county boundaries. To determine the hazards that impact specific assets within these other jurisdictional boundaries, refer to the county or city in which the assets are located.

**Table 3.1B Additional Hazards Addressed in the Jackson County Hazard Mitigation Plan Specific to Jurisdiction**

The HMPT also ranked the six hazards that were considered to be site specific, using the same resources available to them. When a jurisdiction had a plan that was less than a year old, the HMPT agreed to use the previous scores and incorporate them into the multi-jurisdiction plan. Andrew, Baldwin, Springbrook and Zwingle

did not identify any of the six hazards below as having or likely to occur in their jurisdictions.

| Hazard           | Unincorp. Jackson Co. | Andrew | Baldwin | Bellevue | LaMotte | Maquoketa | Miles | Monmouth | Preston | Sabula | St. Donatus | Spragueville | Springbrook | Zwingle |
|------------------|-----------------------|--------|---------|----------|---------|-----------|-------|----------|---------|--------|-------------|--------------|-------------|---------|
| 1. Dam Failure   | X                     |        |         | X        |         |           |       |          |         |        |             |              |             |         |
| 2. Flash Flood   | X                     |        |         | X        | X       |           | X     | X        | X       |        | X           | X            |             |         |
| 3. Landslide     |                       |        |         | X        |         |           |       |          |         | X      |             |              |             |         |
| 4. Levee Failure | X                     |        |         |          |         | X         |       |          |         | X      |             |              |             |         |
| 5. River Flood   | X                     |        |         | X        | X       | X         |       | X        | X       | X      | X           | X            |             |         |
| 6. Sinkholes     |                       |        |         |          |         |           |       |          |         | X      |             |              |             |         |

### 3.1.2 Disaster Declaration History

One method used by the HMPT to identify hazards was to examine events that triggered federal and/or state disaster declarations. Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. Should the disaster be so severe that both the local and state governments' capacities are exceeded a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

The federal government may issue a disaster declaration through FEMA, the US Department of Agriculture (USDA), and/or the Small Business Administration (SBA). FEMA also issues emergency declarations, which are more limited in scope and without the long-term federal recovery programs of major disaster declarations. The quantity and types of damage are the determining factors.

A USDA disaster declaration certifies that the affected county has suffered at least a 30 percent loss in one or more crop or livestock areas and provides affected producers with access to low-interest loans and other programs to help mitigate the impact of the disaster. In accordance with the Consolidate Farm and Rural Development Act, all counties neighboring those receiving disaster declarations are named as contiguous disaster counties and, as such, are eligible for the same assistance.

Table 3.1.2 lists federal disaster and USDA declarations received by Jackson County in the past 12 years. Many of the disaster events were regional or statewide; therefore, reported costs are not accurate reflections of losses to Jackson County and are not included.

**Table 3.1.2 Disaster Declaration History in Jackson County, 2000 – 2011**

| Declaration Number                          | Declaration Date | Description   |
|---|------------------|---|
| <b>Major Disaster Declarations</b>          |                  |   |
| 4018  | 08/30/2011       | Severe Storms and Flooding  |
| 1930  | 07/29/2010       | Flood, Severe Storms, Tornadoes   |
| 1763  | 05/27/2008       | Flooding  |
| 1688  | 03/14/2007       | Severe Winter Storms  |
| 1518  | 05/26/2004       | Severe Storms, Tornadoes, Flooding  |
| 1367  | 05/02/2001       | Severe Storms, Tornadoes, Flooding  |
| <b>Emergency Declarations</b>               |                  |   |
| 3239  | 09/10/2005       | Hurricane Katrina Evacuation  |
| <b>USDA Declarations for Jackson County</b> |                  |   |
| S093  | 9/19/2011        | Severe storms with excessive rain, flooding, flash flooding, hail, high winds, and tornadoes. |

Sources: Federal Emergency Management Agency, [www.fema.gov](http://www.fema.gov); United State Department of Agriculture, [www.rurdev.usda.gov/rd/disasters/](http://www.rurdev.usda.gov/rd/disasters/); and Public Entity Risk Institute, [www.peripresdecusa.org](http://www.peripresdecusa.org)

## 3.2 Hazard Profiles

**Requirement §201.6(c)(2)(i): [the risk assessment shall include a] description of the...location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.**

### 3.2.1 Methodology

Each hazard identified in Section 3.1 Hazard Identification is profiled individually in this section. The level of information presented in the profiles varies by hazard based on the information available. With each update of this plan, new information will be incorporated to provide for better evaluation and prioritization of the hazards that affect Jackson County.

The sources used to collect information for these profiles include those mentioned in Section 3.1.1 as well as those cited individually in each hazard section. This plan includes detailed profiles for each of the identified hazards which are categorized into sections, as shown below.

### Hazard Description

A Hazard Description is a general description of the hazard and the type of impact it may have on a community. It includes a ranking to indicate typical warning times

and duration of hazard events. Definitions for these rankings are included in Table 3.4

### **Geographic Location**

This section offers a description of the geographic extent of location of the hazard in the planning area. Where available, maps are utilized to indicate the areas of the planning area that are vulnerable to the subject hazard.

### **Historical Occurrences**

Information on historic incidents and their impacts based upon the sources described in Section 3.1 Hazard identification, and the information provided by the HMPT.

### **Probability of Future Occurrence**

The frequency of past events used to gauge the likelihood of future occurrences. Where possible, the probability or chance of occurrence was calculated based on historical data. Probability was determined by dividing the number of events observed by the number of years and multiplying by 100. This gives the percent chance of the event happening in any given year. However, due to general inconsistencies in local event reporting to the National Climatic Data Center, the final probability was determined by the HMPT based on local data and their expertise and familiarity with the planning area.

### **Vulnerability**

Vulnerability measures the percentage of people that will be adversely affected by the occurrence of the hazard.

### **Maximum Threat**

Maximum threat rates the potential spatial extent of the impacted area. Rankings were based on historic data and HMPT expertise.

### **Severity of Impact**

The magnitude of the impact of a hazard event (past and perceived) is related directly to the vulnerability of the people, property, and the environment it affects. This is a function of when the event occurs, the location impacted, the resilience of the community, and the effectiveness of the overall emergency response and disaster recovery efforts.

## Speed of Onset

Speed of Onset is calculated by the rating of the amount of warning time that is available before the hazard occurs.

## Hazard Profile Worksheet Total

This final category is the sum of the previous six and helped the HMPT to determine and overall ranking of hazards of concern in the county. The highest total equates to the hazard of most concern, while the lowest total would be applied to the hazard of the least concern for Jackson County.

**Table 3.2A Hazard Analysis/Risk Assessment Worksheet**

| Historical Occurrence: the number of times that a hazard has occurred in the past 25 years |   |  |
|--|---|--|
| Score  | Description                                   |  |
| 1  | Less than 4 occurrences in the past 25 years  |  |
| 2  | 4 to 7 occurrences in the past 25 years       |  |
| 3  | 8-12 occurrences in the past 25 years         |  |
| 4  | More than 12 occurrences in the past 25 years |  |

| Probability: reflects the likelihood of the hazard's occurring again in the future |               |   |
|--|---------------|---|
| Score  | Description   |   |
| 1  | Unlikely      | Less than 1% probability in the next 100 years  |
| 2  | Possible      | Between 1% and 10% probability in the next year, or at least one chance in the next 100 years |
| 3  | Likely        | Between 11% and 99% probability in the next year, or at least one chance in the next 10 years |
| 4  | Highly Likely | Nearly 100% chance in the next year   |

| Vulnerability: measure of the percentage of people that will be adversely affected by the occurrence of the hazard |              |   |
|--|--------------|---|
| Score  | Description  |   |
| 1  | Negligible   | Less than 10% of the total population of the jurisdiction<br>No risk to response personnel, or no response needed |
| 2  | Limited      | 11% to 25% of the total population of the jurisdiction<br>Minimal risk to response personnel                      |
| 3  | Critical     | 26% to 50% of the total population of the jurisdiction<br>Moderate risk to response personnel                     |
| 4  | Catastrophic | More than 50% of the total population of the jurisdiction<br>High risk to response personnel                      |

| <b>Maximum Threat:</b> the potential spatial extent of the impacted area |              |                                   |
|--|--------------|-----------------------------------|
| Score  | Description  |                                   |
| 1  | Negligible   | Less than 10% of the jurisdiction |
| 2  | Limited      | 11% to 25% of the jurisdiction    |
| 3  | Critical     | 26% to 50% of the jurisdiction    |
| 4  | Catastrophic | More than 50% of the jurisdiction |

| <b>Severity of Impact:</b> assessment of severity in terms of injuries and fatalities, personal property, and infrastructure. |              |   |
|---|--------------|---|
| Score   | Description  |   |
| 1   | Negligible   | <ul style="list-style-type: none"> <li>• Few if any injuries</li> <li>• Minor quality of life lost with little or no property damage</li> <li>• Brief interruption of essential facilities for less than 4 hours</li> <li>• No environmental impact</li> <li>• No impact to reputation of the jurisdiction</li> </ul>                             |
| 2   | Limited      | <ul style="list-style-type: none"> <li>• Minor injuries and illness</li> <li>• Minor property damage not threatening structural stability</li> <li>• Shutdown of essential facilities and services for 4 to 24 hours</li> <li>• Minor short-term environmental impact</li> <li>• Very limited impact to reputation of the jurisdiction</li> </ul> |
| 3   | Critical     | <ul style="list-style-type: none"> <li>• Serious injury and illness</li> <li>• Major property damage which threatens structural stability</li> <li>• Shutdown of essential facilities and services for 24-72 hours</li> <li>• Minor long-term environmental impact</li> <li>• Moderate impact to reputation of the jurisdiction</li> </ul>        |
| 4   | Catastrophic | <ul style="list-style-type: none"> <li>• <u>Multiple deaths</u></li> <li>• Property destroyed or damaged beyond repair</li> <li>• Complete shutdown of essential facilities for 3 days or more</li> <li>• Major long-term environmental impact</li> <li>• Severe impacts to the reputation of the jurisdiction</li> </ul>                         |

| <b>Speed of Onset:</b> rating of the potential amount of warning time that is available before the hazard occurs |                                 |
|--|---------------------------------|
| Score  | Description                     |
| 1  | More than 24 hours warning time |
| 2  | 12 to 24 hours warning time     |
| 3  | 6 to 12 hours warning time      |
| 4  | Minimal or no warning           |

Table 3.2B summarizes the results of the completed Hazard Risk Assessment Worksheet for those hazards discussed as county-wide threats.

**Table 3.2B County-wide Hazard Profile Summary for Jackson County**

| Hazard                   | Historical Occurrence | Probability | Vulnerability | Maximum Geographic Extent | Severity | Speed of Onset | Total | Ranking |
|--------------------------|-----------------------|-------------|---------------|---------------------------|----------|----------------|-------|---------|
| Drought                  | 1                     | 3           | 2             | 3                         | 2        | 1              | 12    | 9       |
| Earthquake               | 1                     | 2           | 2             | 2                         | 2        | 4              | 13    | 8       |
| Extreme Heat             | 4                     | 4           | 2             | 4                         | 2        | 1              | 17    | 4       |
| Grass or Wild Fire       | 4                     | 3           | 2             | 1                         | 2        | 4              | 16    | 7       |
| Hailstorm                | 4                     | 4           | 1             | 2                         | 2        | 4              | 17    | 6       |
| Severe Winter Storm      | 4                     | 4           | 4             | 4                         | 3        | 1              | 20    | 1       |
| Thunderstorm & Lightning | 4                     | 4           | 2             | 3                         | 2        | 4              | 19    | 3       |
| Tornado                  | 4                     | 4           | 2             | 1                         | 2        | 4              | 17    | 5       |
| Windstorm                | 4                     | 4           | 3             | 3                         | 2        | 4              | 20    | 2       |

The scores were all determined by the Jackson County Planning Team.

Table 3.2C below illustrates the resulting scores for each of the nine hazards chosen by the Planning Team.

**Table 3.2C: Hazard Analysis Risk Assessment Results:**

| Rank | Hazard                   |
|------|--------------------------|
| 1    | Severe Winter Storm      |
| 2    | Windstorm                |
| 3    | Thunderstorm & Lightning |
| 4    | Extreme Heat             |
| 5    | Tornado                  |
| 6    | Hailstorm                |
| 7    | Grass or Wild Fire       |
| 8    | Earthquake               |
| 9    | Drought                  |

In the table above, extreme heat, hailstorm, and tornado had the same score. When this occurred, the Planning Team consulted NCDC data and local memories, and decided which hazard should be placed higher in priority. In this situation, the Planning Team ranked the hazards in the following order: extreme heat, tornado and hail storm. Once each of the nine identified hazards had been assessed, scored and ranked, the next step for the Jackson County Planning Team was to prioritize the

nine hazards into one of three categories to provide guidance in the establishment of goals, objectives, timetables and mitigation alternatives.

**Table 3.2D: Hazard Priority Lists for Countywide Hazards**

| Priority Group 1         | Priority Group 2 | Priority Group 3   |
|--------------------------|------------------|--------------------|
| Severe Winter Storm      | Extreme Heat     | Earthquake         |
| Windstorm                |                  | Drought            |
| Thunderstorm & Lightning |                  | Grass or Wild Fire |
| Tornado                  |                  | Hailstorm          |

The Priority Group 1 Hazards are candidates for immediate focus in the emergency plan because of their high risk. Priority Group 2 hazards are those that have a known risk, but their focus in the plan will have mitigation activities in the next 1-3 years. **Those noted in Priority Group 3 have an acceptable level of risk and will not be addressed further. No action items were formulated to address Group 3 hazards.**

Each participating jurisdiction independently ranked the six hazards that are considered to vary from city to city. The six hazards are: dam failure, flash flood, landslide, levee failure, river flood and sinkholes. In Table 3.2E below, the six hazards are identified as having occurred or having the potential to occur, along with their risk analysis score on a scale of 6 – 24 (using the same Hazard Profile Worksheet found on page 33), or with a UNL for unlikely to occur. Some cities found their risk are only to county-wide hazards and not to the six hazards considered to be site-specific. The hazards were ranked as either “unlikely to occur” (UNL) or given numerical scores using the Hazard Risk Analysis Ranking system.

**Table 3.2E Community-Specific Hazard Rankings**

| Hazard       | Dam Failure | Flash Flood | Landslide | Levee Failure | River Flood | Sinkholes |
|--------------|-------------|-------------|-----------|---------------|-------------|-----------|
| City         |             |             |           |               |             |           |
| Uninc. Co.   | 7           | 11          | UNL       | 8             | 12          | UNL       |
| Andrew       | UNL         | 9           | UNL       | UNL           | UNL         | UNL       |
| Baldwin      | UNL         | UNL         | UNL       | UNL           | UNL         | UNL       |
| Bellevue     | 9           | 12          | 11        | UNL           | 11          | UNL       |
| LaMotte      | UNL         | 7           | UNL       | UNL           | 7           | UNL       |
| Maquoketa    | UNL         | UNL         | UNL       | 12            | 12          | UNL       |
| Miles        | UNL         | 13          | UNL       | UNL           | UNL         | UNL       |
| Monmouth     | UNL         | 14          | UNL       | UNL           | 14          | UNL       |
| Preston      | UNL         | 11          | UNL       | UNL           | 11          | UNL       |
| Sabula       | UNL         | UNL         | 10        | 19            | 19          | 10        |
| St. Donatus  | UNL         | 17          | UNL       | UNL           | 16          | UNL       |
| Spragueville | UNL         | 10          | UNL       | UNL           | UNL         | UNL       |
| Springbrook  | UNL         | UNL         | UNL       | UNL           | UNL         | UNL       |

| Hazard  | Dam Failure | Flash Flood | Landslide | Levee Failure | River Flood | Sinkholes |
|---------|-------------|-------------|-----------|---------------|-------------|-----------|
| City    |             |             |           |               |             |           |
| Zwingle | UNL         | UNL         | UNL       | UNL           | UNL         | UNL       |

From this point forward, the Jackson County Multi-Jurisdictional Hazard Mitigation Plan will only discuss those hazards identified in the Priority Groups 1 and 2 of county-wide hazards (Severe Winter Storms, Windstorms, Thunderstorm and Lightning, Tornado, and Extreme Heat) and the hazards that were identified as specific to a city. While Bellevue and Sabula noted there have been occurrences of Landslide and Sinkholes, the HPT noted that it was on rural land where no development would be considered. Other than to prohibit development in those areas, no further discussion will be discussed. In total, the following hazards have been eliminated from further discussion in the Jackson County Hazard Mitigation Plan: Drought, Earthquake, Expansive Soil, Grass or Wild Fire, Hailstorm, Landslide or Sinkholes.

### 3.2.2 Dam and Levee Failure

#### Description

The failure of dams or levees could result in injuries, loss of life, or damage to property, the environment and the economy. While levees are built solely for flood protection, dams often serve multiple purposes, one of which may be flood control. Severe flooding and other storms can increase the potential that dams and levees will be damaged and fail as a result of the physical force of the flood waters or overtopping.

Dams and levees are usually engineered to withstand a flood with a computed risk of occurrence. If a larger flood occurs, then that structure will likely be overtopped. If during the overtopping, the dam or levee fails or is washed out, the water behind is released as a flash flood and with levee failure, the area of residual risk may be inundated. Failed dams or levees can create floods that are catastrophic to life and property, in part because of the tremendous energy of the released water.

- High Hazard Dam: (also known as a Class C dam) a dam located in an area where failure could result in any of the following: extensive loss of life, damage to more than one home, damage to industrial or commercial facilities, interruption of a public utility serving a large number of customers, damage to traffic on high-volume roads that meet the requirements for hazard class C dams or a high-volume railroad line, inundation of a frequently used recreation facility serving a relatively large number of persons, or two or more individual hazards described for significant hazard dams (hazard class B dams).

- Medium Hazard Dam: (also known as a Class B dam) a dam located in an area where failure could endanger a few lives, damage an isolated home, damage traffic on moderate volume roads that meet certain requirements, damage low-volume railroad tracks, interrupt the use or service of a utility serving a small number of customers, or inundate recreation facilities, including campground areas intermittently used for sleeping and serving a relatively small number of persons.
- Low Hazard Dam: (also known as a Class A dam) a dam located in an area where failure could damage only farm or other uninhabited buildings, agricultural or undeveloped land including hiking trails, or traffic on low-volume roads that meet the requirements for low hazard dams.

Dam failures can result from any one or a combination of the following causes:

- Prolonged periods of rainfall and flooding, which causes most failures;
- Inadequate spillway capacity, resulting in excess overtopping of flows;
- Internal erosion caused by embankment or foundation leakage or piping;
- Improper maintenance, including failure to remove trees, repair internal seepage problems, replace lost material from the cross section of the dam and abutments;
- Improper design, including the use of improper construction materials and construction practices;
- Negligent operation, including failure to remove or open gates or valves during high flow periods;
- Failure of upstream dams on the same waterway;
- Landslides into reservoirs, which cause surges that result in overtopping;
- High winds, which can cause significant wave action and result in substantial erosion; and
- Earthquakes, which typically cause longitudinal cracks at the tops of embankments and weaken entire structures.

In general, warning time depends on the causal factors. Dam failure can occur in as little as a few minutes, or more slowly over the course of many months. In the event of a catastrophic failure of a large dam, evacuation time for locations directly downstream would be extremely brief. Floodplain characteristics largely determine the available warning time for locations further downstream. Duration of high water conditions that result from dam failure depends on the capacity and stage of the reservoir at time of breach as well as the severity of the breach. Warning time and duration of levee failure is generally shorter than dam failure.

## **Geographic Location**

### **Dams & Levees**

Jackson County does not own any of the dams or levees located in the county and none of dams are considered to be High Hazard or Class C dams. According to the National Inventory of Dams, there are ten dams in Jackson County:

- **Mississippi River Dam 12 on the Mississippi River**

Mississippi River Lock and Dam Number 12 are adjacent to the City of Bellevue in Jackson County. The Planning Team recognizes the potential for dam failure; however, they have no recollection of any type of dam failure in the City of Bellevue's history, nor were any historical records or documents found regarding such an incident. Additionally, there have been no documented dam failures in Jackson County that resulted in death or severe property damage. It is important to consider that by 2020, 85% of the dams in the United States will be more than 50 years old (the design life of a dam). Neither the City of Bellevue nor Jackson County has maps illustrating what would happen if there were a dam failure. According to the Jackson County Emergency Management Agency, the only low-lying area that would be affected by dam failure is a campground located south of the City of Bellevue. Estimated at approximately 30 campsites, dam failure could result in up to \$300,000 in property damage. The City of Bellevue sits on high enough ground that it would not incur damage.

- **Maquoketa Mill Dam on the Maquoketa River**

The City of Maquoketa has an earthen levee that runs along the Maquoketa River. According to the HMPT, the Maquoketa River and Prairie Creek floods a minimum of four times annually. While the levee has not yet failed, it has been topped and the potential for failure exists. In 2010 when the Lake Delhi Dam, upriver from Maquoketa and located in Delaware County, failed, there was also significant flooding in the City of Maquoketa. As a result, the City administrative team, along with the HMPT, has worked extensively on flood mitigation. However, it is also noted that because of the dam being eliminated at Lake Delhi, there is less risk and less problems for the City of Maquoketa. On the south side of S. Main Street, between the sewage plant and Hurstville Road, the City extended the levee to prevent back flow.

- **Leisure Lake Dam on Lytle Creek**

Leisure Lake dam is owned by a private association and is used to make a small recreational lake. According to the Jackson County engineer there is no danger to structures in the area because of its size.

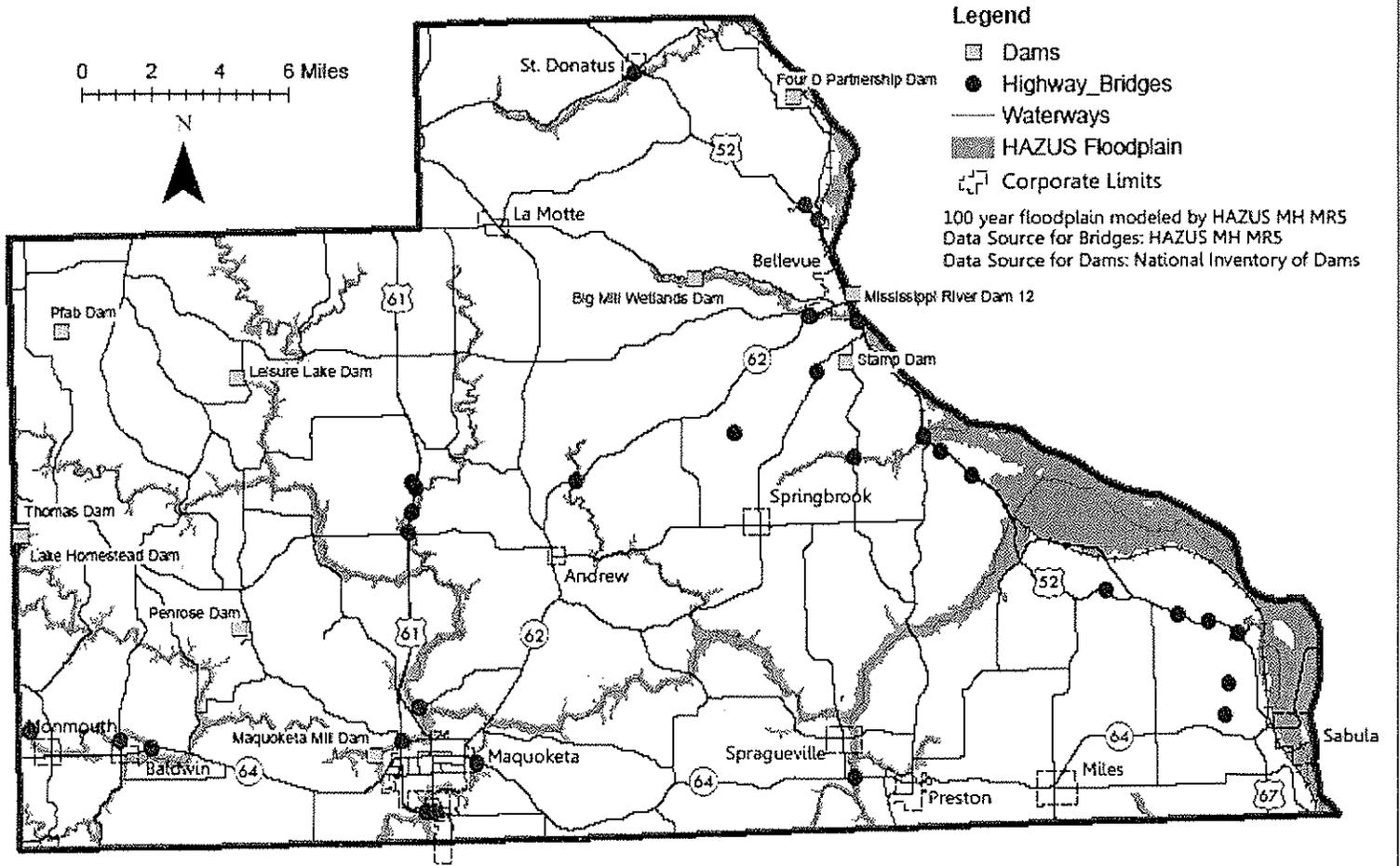
The following are all privately owned earthen dams that are used for stock, fire protection, fishing or recreation as classified by the National Inventory of Dams. There is no great concern to structures should any of the dams fail or be breached:

- **Penrose Dam on the TR-Raccoon Creek**
  - **Lake Homestead Dam on the TR-Maquoketa River**
  - **Stamp Dam on the TR-Duck Creek**
  - **Big Mill Wetlands Dam on the TR-Mill Creek**
  - **Pfab Dam on the TR-Farm Creek**
  - **Four D Partnership Dam on the TR-Mississippi River**
  - **Thomas Dam on the TR-South Fork Maquoketa River**
- There is an earthen levee in Green Island that was breached by floodwaters from Lake Delhi dam collapse in July 2010. The earthen levee at Green Island is more than 70 miles from Lake Delhi, but suffered the effects of the Maquoketa River flooding when Lake Delhi was drained after the dam breach there.

The 39 landowners in the Green Island Levee District who are responsible for the levee do not have the money to fix it. The Army Corps of Engineers, who has paid for repairs in the past, refuses to do so at this time because the cost of the repairs out-weighs the benefit gained from the land it protects. As this plan is being written, landowners are in litigation. No repairs have been made.

- The City of Sabula is in the process of updating its levee certification. A permanent dike was built around the city in the 1950s to protect it from flood waters. Recently, when FEMA redrew the flood maps for the area, a requirement was that the community needed to re-certify its levee. The City of Sabula will elevate the low areas of the levee so that the dike will be 3' above the 100-year flood zone. The project is estimated to cost nearly three-quarters of a million dollars and is scheduled to be completed by the end of 2011.

# Jackson County Dams and Highway Bridges



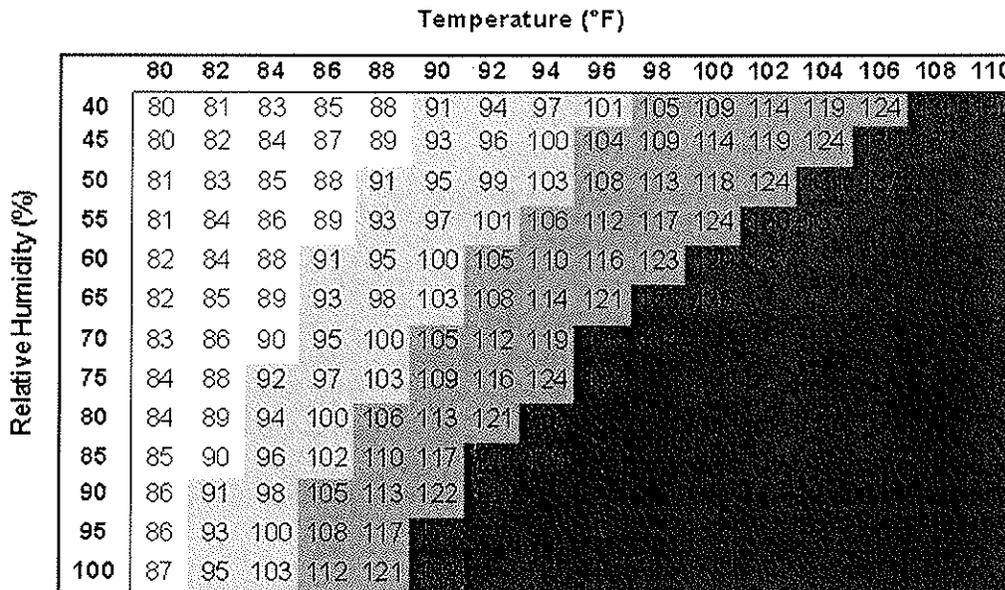
### 3.2.3 Extreme Heat

Extreme heat is classified by temperatures (including heat index) in excess of 100° F or 3 successive days of higher than 90° F. A heat advisory is issued when temperatures reach 105° F and a warning is issued at 115° F. The heat index is a number in degrees Fahrenheit that tells how hot it really feels when relative humidity is added to the actual air temperature. Exposure to full sunshine can increase the heat index by at least 15°. Extreme heat can impose stress on humans and animals.

Heatstroke, sunstroke, cramps, exhaustion, and fatigue are possible with prolonged exposure and/or physical activity due to the body's inability to dissipate the heat. Extreme heat can also result in distortion and failure of structures and surfaces such as streets and buildings.

Extreme heat can be considered a county-wide concern, as NCDC cites one recorded event for all of Iowa, plus an additional two events in Jackson County between January 1, 1950 and April 30, 2011. The all-Iowa event Heat Wave event on July 12, 1995 claimed \$3.8 million in property damages. All structures are vulnerable to extreme heat. Furthermore, it is noted that there are NCDC data limitations regarding extreme heat events. NCDC data does not match up with the Planning Team's recollection of extreme heat events and other than NCDC, there are no tools to estimate structural damages due to extreme heat events.

**Figure 3.2C NOAA'S NATIONAL WEATHER SERVICE HEAT INDEX**



**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

Caution    Extreme Caution    Danger    Extreme Danger

### 3.2.4 Flash Flood & River Flood

#### Description

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. Certainly, Eastern Iowa has experienced numerous flood events and loss of millions of dollars in property and crop damage over the past 25 years.

There are several different types of potential flood events in Jackson County including riverine, flash flooding and urban storm water. Flash flooding can best be characterized as an event occurring with little or no warning time where water levels rise at an extremely fast rate. Flash flooding results from intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding also occurs in areas that are not necessarily adjacent to bodies of water, but instead are lower-lying areas in which precipitation runs off and/or accumulates. Flash flooding is an extremely dangerous form of flooding which can reach full peak in only a few minutes and allows little or no time for protective measures to be taken by those in its path. Flash flood waters move at very fast speeds and can roll boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding often results in higher loss of life, both human and animal, than slower developing river and stream flooding. Floods are the most common and widespread of all-natural disasters except fire. The National Climatic Data Center lists 42 flood events in Jackson County from January 1, 1950 through April 30, 2011. NCDC cites more than \$149 million in damages in Jackson County in that same 61 year span. See [Appendix E](#) for further information on NCDC data regarding flooding in Jackson County.

In the extensive flooding of July 2011, which has not yet been captured by NCDC databases, many secondary roads, bridges and campgrounds were inundated and destroyed. The County does not yet have final costs and bid estimates on repairs are in process. It is estimated that there will be at least \$300,000 in bridge repair and rip rap. The City of Bellevue experienced \$10,000 in damages to transformer boxes on telephone poles from this event. North of the City of Bellevue, the Spruce Creek campground documented between \$75,000 - \$100,000 in damages, while the City of St. Donatus suffered damages in the same range as the road to the sewer lagoon was washed out and manhole covers damaged. Flooding remains a significant issue for several jurisdictions in Jackson County.

Flash Flood was identified by several participating communities in Jackson County, as well as the unincorporated areas, as being a hazard of concern. Baldwin, Bellevue, Maquoketa, Monmouth and St. Donatus all cited flash flood in low lying areas within city limits.

Riverine Flooding caused by rivers, creeks and other tributaries overtopping their banks due to large amounts of precipitation, was also identified as being a risk to several of the

Jackson County jurisdictions. See information specific to each city in sections for the city.

The summer floods result from above normal precipitation over an extended period of time and/or extremely heavy rainfall. Those occurring over the extended wet weather allow for several days to possibly two weeks notice of floods. Those occurring after extremely heavy rainfalls typically result in advance warning of less than 24 hours. Damages from summer floods may include any property as heavy rains of this magnitude create heavy ground saturation and commonly flood basements. Depending on the month and maturity of crops, they may cause significant crop damages as well.

Spring floods typically result from the rapidly melting of snow and rain, and typically are forecast well in advance. The National Weather Service provides advance flood estimates as much as a month in advance. However, these forecasts may be revised with unanticipated temperatures and/or rainfall. Spring floods typically result in “repeat” property damages, which are properties that receive similar damage from every flood of significance, and delay the planting of crops, or damage early crops.

In the event of future significant damage due to flash flooding, Jackson County and/or its municipalities would engage in the appropriate mitigation actions: (1) elevation of structures in the hazard path, (2) acquisition of structures in the hazard path, (3) raising, grading, or resurfacing roads, (4) reinforcing culverts to counteract washouts, or (5) adding lift stations.

The best available data for flood modeling in Jackson County was generated by HAZUS-MH MR3, FEMA’s software program for estimating potential losses from disasters. HAZUS was used to model a flood inundation zone with one percent annual probability for major rivers and creeks in the County. The inundation zone, or flood depth grid, estimates flooding depth based on location and elevation relative to the creek or river. While not as accurate as official flood maps, these floodplain boundaries are useful for GIS-based loss estimation. Note that HAZUS floodplain modeling occurred only on streams with a minimum drainage area of 10 square miles. Thus, flooding on smaller basins, including urban runoff, may not be represented. HAZUS also used 30m resolution DEM for terrain data, which normally does not have sufficient detail to show levee features, thus existing levee protection could be ignored by this analysis. Figure 3.2D shows the HAZUS flood depth grid for Jackson County. No HAZUS flood plain maps registered for the communities of Andrew, LaMotte, Miles, Springbrook or Zwingle. Meanwhile, the communities of Miles and Baldwin appear on one map as do Preston and Spragueville.

Jackson County Multi-Jurisdictional Hazard Mitigation Planning

# Jackson County HAZUS Floodplain

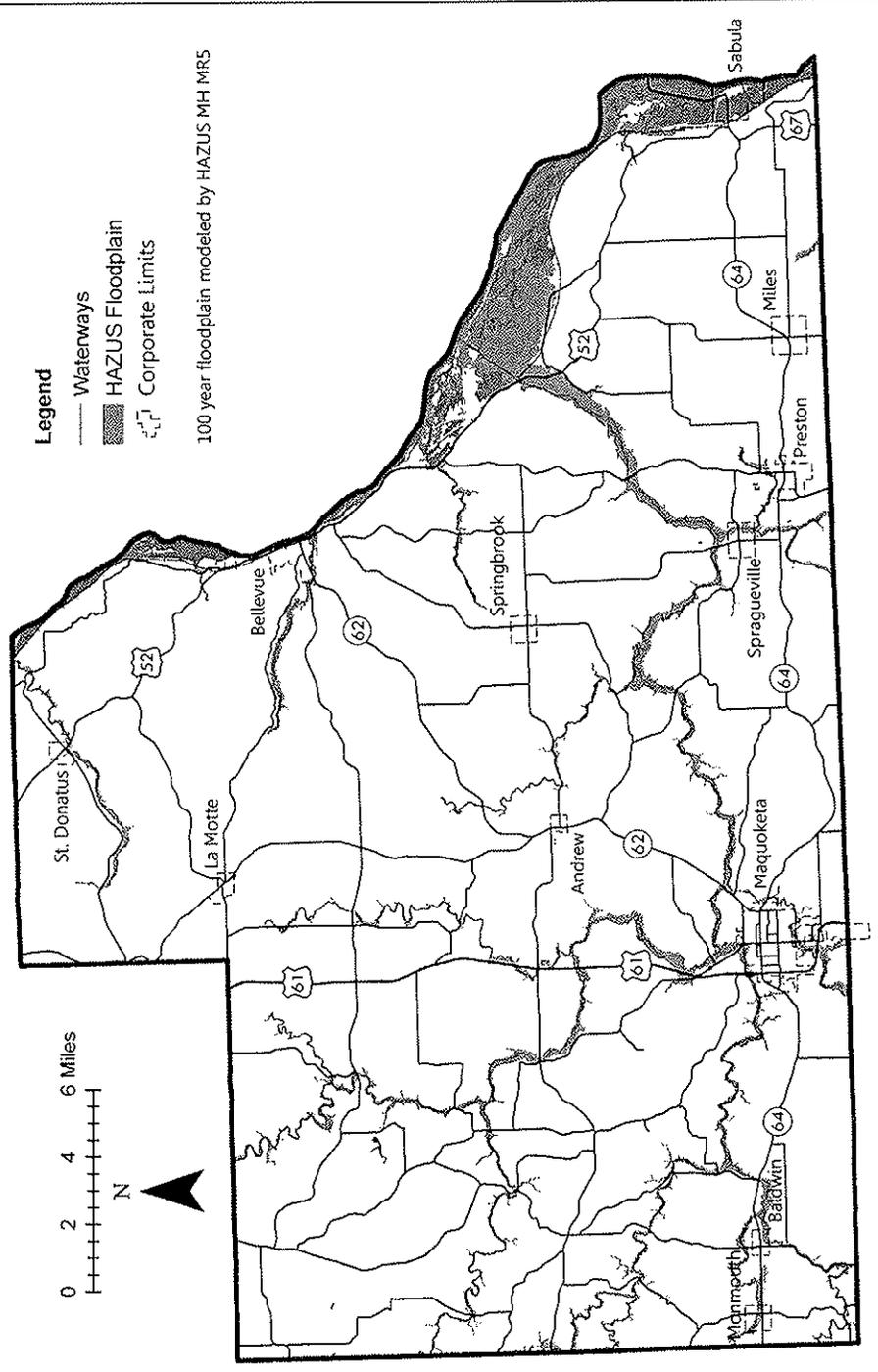


Table 3.2A identifies which jurisdictions in Jackson County are currently participants in the National Flood Insurance Program. Those that are not presently members will meet all requirements once mapping is completed. FEMA/DNR has draft maps for all incorporated communities in Jackson County and NFIP participation will follow once maps are finalized.

**Table 3.2A Jackson County National Flood Insurance Participants**

| City                          | NFIP Participant |    |
|-------------------------------|------------------|----|
|                               | YES              | NO |
| Andrew                        |                  | X  |
| Baldwin                       | X                |    |
| Bellevue                      | X                |    |
| LaMotte                       | X                |    |
| Maquoketa                     | X                |    |
| Miles                         | X                |    |
| Monmouth                      | X                |    |
| Preston                       | X                |    |
| Sabula                        | X                |    |
| Spragueville                  |                  | X  |
| Springbrook                   |                  | X  |
| St. Donatus                   |                  | X  |
| Zwingle                       | X                |    |
| Unincorporated Jackson County | X                |    |

The Cities of Andrew, Spragueville, and Springbrook have selected to not participate in the NFIP at this time and have not reported problems with flooding and have no waterways or low-lying areas of concern in the jurisdictions at this time. St. Donatus has had problems with flooding and is exploring NFIP membership at this time. All other participating jurisdictions in Jackson County are NFIP members and will continue to meet requirements of membership.

### 3.2.5 Severe Winter Storm

#### Description

Severe winter weather conditions that can affect day-to-day activities include blizzard conditions, heavy snow, blowing snow, freezing rain, heavy sleet, and/or extreme cold. Winter storms are common during the months of October through April. The various types of extreme winter weather cause considerable damage. Blizzard conditions are winter storms which last at least three hours with sustained wind speeds of 35 mph or

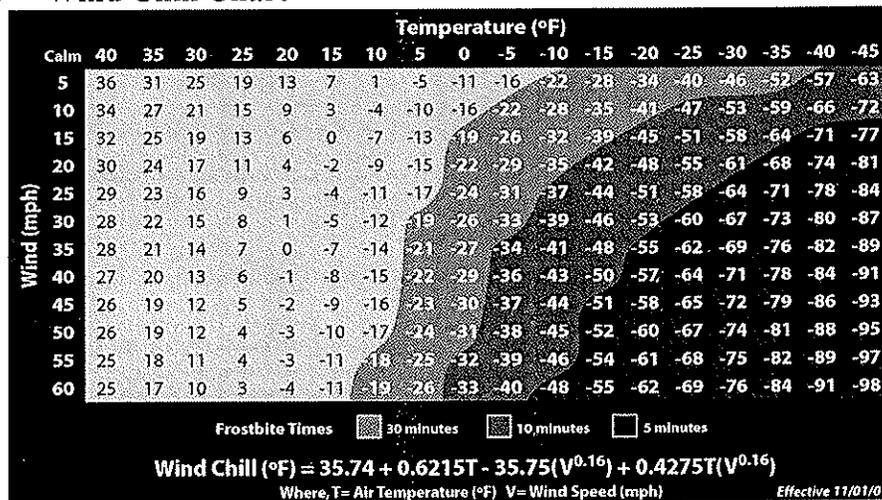
more, reduced visibility of 1/4 mile or less, and white out conditions. Heavy snows of more than 6 inches in a 12 hour period or freezing rain greater than 1/4 inch accumulation causing hazardous conditions in the community. Loose snow begins to drift when the wind speed reaches a critical speed of 9 to 10 mph under freezing conditions. Ice storms result in fallen trees, broken tree limbs, downed power lines and utility poles, fallen communications towers, and impassable transportation routes. Severe ice storms have caused total electric power losses over large areas and rendered assistance unavailable to those in need due to impassable roads. Frigid temperatures and wind chills are dangerous.

Jackson County receives large amounts of snow, freezing rain, sleet and extreme wind chills each year. Heavy snowfall and extreme cold can immobilize an entire region.

Figure 3.2E



Wind Chill Chart



Even areas that normally experience mild winters can be hit with a major snowstorm or extreme cold. Winter storms can result in flooding, closed highways, blocked roads, downed power lines.

The Planning Team recognized that severe winter storms have the potential to impact the entire jurisdiction equally; therefore the hazard boundary can be depicted as jurisdiction-wide. Furthermore, NCDC cited 127 snow and ice storms in Jackson County between January 1, 1950 and April 30, 2011, with dozens of severe cold temperatures during that same period.

### 3.2.6 Thunderstorm & Lightning

#### Description

The National Weather Service (NWS) states that a "severe" thunderstorm is any storm that produces one or more of the following elements:

- A tornado
- Damaging winds, or winds measured 58 miles per hour or more
- Hail one inch in diameter or larger.

Most thunderstorms do not result in a tornado, damaging winds or hail.

All thunderstorms are dangerous, according to FEMA. Associated dangers of thunderstorms include tornadoes, strong winds, hail, and flash flooding. Flash flooding is responsible for more fatalities than any other thunderstorm-associated hazard.

Thunderstorms are common in Iowa and can occur singly, in clusters, or in lines. They are formed from a combination of moisture, rapidly rising warm air, and a lifting mechanism such as clashing warm and cold air masses. Most thunderstorms produce only thunder, lightning, and rain. Severe storms however, can produce tornadoes, straight-line winds above 58 mph, microbursts, lightning, hailstorms, and flooding. Straight-line winds can often exceed 60 mph and are common occurrences, and are often mistaken for tornadoes.

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. Every thunderstorm produces lightning. In the United States, an average of 300 persons is injured and 80 people are killed every year by lightning. Although most lightning victims survive, people struck by lightning often report a variety of long-term, debilitating symptoms. When the buildup becomes strong enough, lightning appears as a "bolt." This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches temperatures approaching 50,000 degrees F in a split second.

According to the NCDC, 111 Thunderstorm and Wind events were recorded in Jackson County between January 1, 1950 and April 30, 2011. While NCDC does not provide full and comprehensive data, it is one tool used to track frequency of storms. Additionally, the NCDC cites one lightning event in Jackson County during the same time period and also cites approximately \$2 million in property and crop damages from thunder, wind and lightning storms during the same period.

The Planning Committee recognized that Thunderstorm and Lightning events have the potential to impact the entire jurisdiction equally; therefore the hazard boundary can be depicted as jurisdiction-wide. Figures 3.2.10a and 3.2.10b show Jackson County located in an area with an average of 30-50 days with thunderstorms per year per 10,000 square miles and two to eight lightning strikes per square kilometer per year.

Figure 3.2F Distribution and Frequency of Thunderstorms

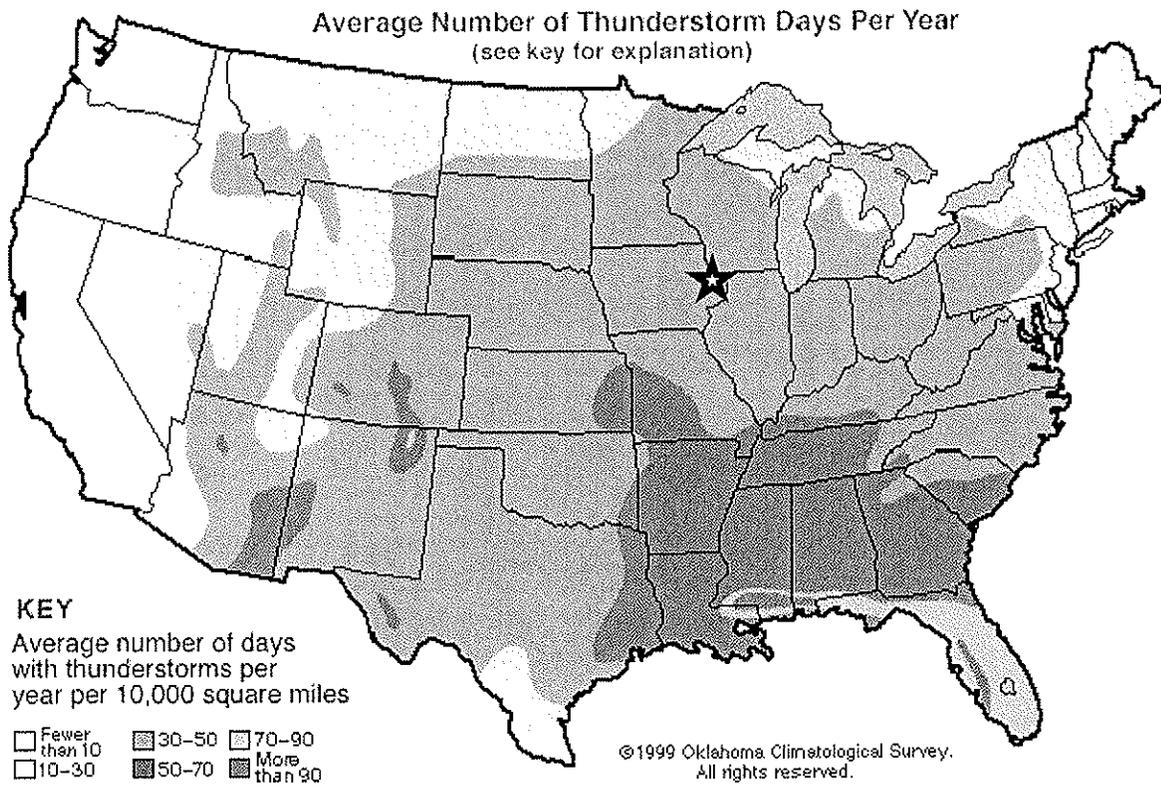
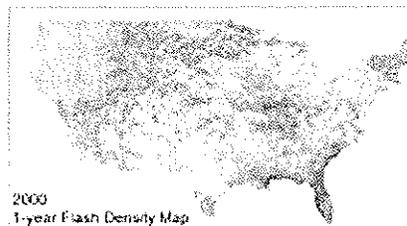
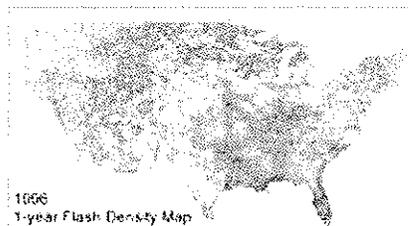
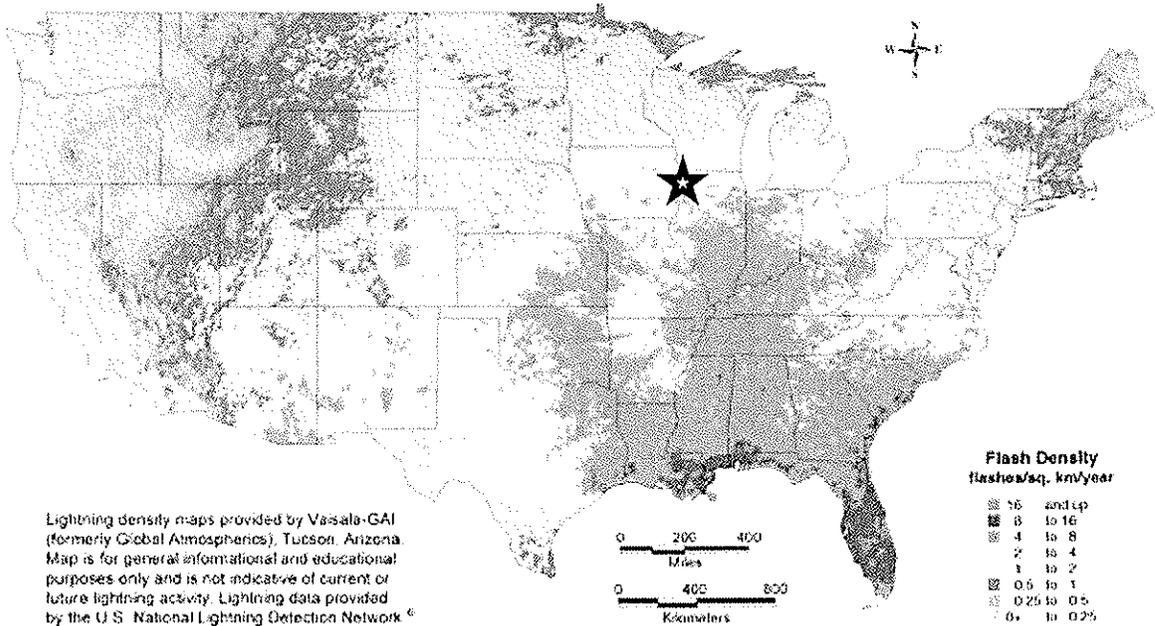


Figure 3.2G Location and Frequency of Lightning in Iowa



5-year Flash Density Map — U.S.  
(1996–2000)



The 5-year Flash Density Map shows the average amount of lightning recorded in 1996–2000. The average amount of lightning that occurs in any given area varies significantly from year to year, as shown in the annual maps for 1996 and 2000.

Source: [http://www.lightningsafety.noaa.gov/lightning\\_map.htm](http://www.lightningsafety.noaa.gov/lightning_map.htm)

### 3.2.7 Tornado

#### Description

Tornadoes are relatively common in Iowa, including Jackson County, particularly in spring and summer. The conditions that produce a "tornadic thunderstorm" (a storm that produces a tornado) exist when warm, moist air gets trapped beneath a stable layer of cold, dry air by an intervening layer of warm, dry air. This stratified sandwich of air is called an inversion.

Tornadoes have been known to lift and move huge objects, destroy or move whole buildings long distances, and siphon large volumes from bodies of water. People living in manufactured or mobile homes are most exposed to damage from tornadoes. Even if

anchored, mobile homes do not withstand high wind speeds as well as permanent, site built structures.

The potential for tornadoes to occur is county-wide and Iowa is known to have a long history of having a higher rate of tornadoes per square mile than any other state. In Jackson County, the NCDC cited 14 tornadoes between January 1, 1950 and April 30, 2011. For more information on NCDC listings of tornadoes in Jackson County see [Appendix E](#).

The Enhanced Fujita Tornado Scale measures tornado severity. The Enhanced Fujita Scale assigns a numerical value based on wind speeds and categorizes tornadoes from 0 to 5. The letters “EF” often precedes the numerical value. The Enhanced Fujita Scale lists the wind speeds associated with tornadoes using the Enhanced Fujita Scale.

**Figure 3.2H The Enhanced Fujita Tornado Scale**

| FUJITA SCALE |                        |                     | OPERATIONAL EF-SCALE |                     |
|--------------|------------------------|---------------------|----------------------|---------------------|
| F Number     | Fastest 1/4-mile (mph) | 3 Second Gust (mph) | EF Number            | 3 Second Gust (mph) |
| 0            | 40-72                  | 45-78               | 0                    | 65-85               |
| 1            | 73-112                 | 79-117              | 1                    | 86-110              |
| 2            | 113-157                | 118-161             | 2                    | 111-135             |
| 3            | 158-207                | 162-209             | 3                    | 136-165             |
| 4            | 208-260                | 210-261             | 4                    | 166-200             |
| 5            | 261-318                | 262-317             | 5                    | Over 200            |

### 3.2.8 Windstorm

#### Description

Windstorms are created when extreme winds, typically associated with thunderstorms or downbursts, generate damaging and destructive wind speeds and can be responsible for structural and property damage. Unlike tornadoes, windstorms may have a destructive path that is several miles wide, similar to that of a thunderstorm. Large hail, strong straight-line winds, heavy rains, flash flooding, and lightning are also associated with severe storms and may cause significant damage to a wider area. Large-scale extreme wind phenomena are experienced over every region of the United States.

**Figure 3.2I Beaufort Wind Scale**

| Force | Wind (Knots) | WMO Classification | Appearance of Wind Effects   |  |
|-------|--------------|--------------------|--|--|
|       |              |                    | On the Water   | On Land  |
| 0     | Less than 1  | Calm               | Sea surface smooth and mirror-like   | Calm, smoke rises vertically   |
| 1     | 1-3          | Light Air          | Scaly ripples, no foam crests  | Smoke drift indicates wind direction, still wind vanes                 |
| 2     | 4-6          | Light Breeze       | Small wavelets, crests glassy, no breaking   | Wind determined that on face, leaves rustle, vanes begin to move       |
| 3     | 7-10         | Gentle Breeze      | Large wavelets, crests begin to break, scattered whitecaps   | Leaves and small twigs constantly moving, light flags extended         |
| 4     | 11-16        | Moderate Breeze    | Small waves 1-4 ft. becoming longer, numerous whitecaps  | Dust, leaves, and loose paper lifted, small tree branches move         |
| 5     | 17-21        | Fresh Breeze       | Moderate waves 4-8 ft taking longer form, many whitecaps, some spray   | Small trees in leaf begin to sway                                      |
| 6     | 22-27        | Strong Breeze      | Larger waves 8-13 ft, whitecaps common, more spray   | Larger tree branches moving, whistling in wires                        |
| 7     | 28-33        | Near Gale          | Sea heaps up, waves 13-20 ft, white foam streaks off breakers  | Whole trees moving, resistance determined that walking against wind    |
| 8     | 34-40        | Gale               | Moderately high (13-20 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks | Whole trees in motion, resistance determined that walking against wind |
| 9     | 41-47        | Strong Gale        | High waves (20 ft), sea begins to roll, dense streaks of foam, spray   | Slight structural damage   |

|    |       |               |  |  |
|----|-------|---------------|--|--|
|    |       |               | may reduce visibility  | occurs, slate blows off roofs  |
| 10 | 48-55 | Storm         | Very high waves (20-30 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility | Seldom experienced on land, trees broken or uprooted, "considerable structural damage" |
| 11 | 56-63 | Violent Storm | Exceptionally high (30-45 ft) waves, foam patches cover sea, visibility more reduced                                     |  |
| 12 | 64+   | Hurricane     | Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced              |  |

The Planning Committee recognized that Windstorms have the potential to impact the entire jurisdiction equally; therefore the hazard boundary can be depicted as jurisdiction-wide. NCDC classifies windstorm tracking in the same category as Thunderstorms. See the previous section for NCDC data as well as [Appendix E](#).

### 3.3 Vulnerability Assessment

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

#### 3.3.1 Methodology

The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk to natural hazards. The vulnerability assessment for this plan followed the methodology described in the FEMA publication *Understanding Your Risks – Identifying Hazards and Estimating Losses* (2002).

The vulnerability assessment was conducted based on the best available data and the significance of the hazard. Data to support the vulnerability assessment was collected from the following sources:

- County and jurisdictional data (hazards and appraiser’s data)
- Statewide GIS datasets compiled by state and federal agencies
- FEMA’s HAZUS-MH loss estimation software
- Written descriptions of assets and risks provided by participating jurisdictions
- Existing plans and reports
- Personal interviews with HMPT members and other stakeholders

The vulnerability assessment first describes the assets at risk in Jackson County, including the total exposure of people and property; critical facilities and infrastructure; natural, cultural, and historic resources; and economic assets. Second, the assessment considers the social vulnerability of the County to hazards, including characteristics of gender, age, race/ethnicity, and wealth and poverty. Third, hazards of high and medium significance are evaluated in greater detail and potential losses are estimated where data is available. Development trends, including population growth, housing demand, and land use patterns, are analyzed in relation to hazard-prone areas. The end of the chapter summarizes the key issues and conclusions identified in the risk assessment process.

### 3.3.2 Assets at Risk

This section assesses the population, structures, critical facilities and infrastructure, and other important assets in Jackson County at risk to identified hazards.

#### Total Exposure of Population and Structures

Table 3.3.2 shows the estimated values for key building occupancies and number of structures. Land values have been purposefully excluded because land remains following disasters, and subsequent market devaluations are frequently short term and difficult to quantify. Additionally, state and federal disaster assistance programs generally do not address loss of land or its associated value.

**Table 3.3A Estimated Values for the Key Building Occupancies (Uses) for Jackson County (2010 Valuations)\***

| Residential   | Commercial    | Industrial   | Agriculture (outbuildings) | Total         |
|---------------|---------------|--------------|----------------------------|---------------|
| \$609,797,900 | \$122,741,650 | \$16,111,300 | \$19,756,600               | \$768,402,450 |

\*Data from the Jackson County Assessor Records

**Table 3.3B Maximum Population and Building Exposure by Jurisdiction**

| <b>Community</b>                    | <b>Population<br/>(from 2010<br/>Census)</b> | <b>Total<br/>Structure<br/>Value (\$)</b> |
|-------------------------------------|--|---|
| Andrew                              | 434  | 8,367,100                                 |
| Baldwin                             | 109  | 2,354,700                                 |
| Bellevue                            | 2,191  | 70,825,100                                |
| LaMotte                             | 260  | 7,253,600                                 |
| Maquoketa                           | 6,141  | 134,463,400                               |
| Miles                               | 445  | 11,297,700                                |
| Monmouth                            | 153  | 2,097,000                                 |
| Preston                             | 1,012  | 28,157,600                                |
| Sabula                              | 576  | 16,421,200                                |
| Spragueville                        | 81   | 1,589,300                                 |
| Springbrook                         | 144  | 4,748,700                                 |
| St. Donatus                         | 135  | 4,179,700                                 |
| Zwingle                             | 91   | 562,700                                   |
| Unincorporated<br>Jackson<br>County | 8,141  | 317,475,100                               |
| <b>Total</b>                        | <b>19,848</b>                                | <b>609,792,900</b>                        |

\*The City of Zwingle is in both Dubuque and Jackson counties and mitigation actions, etc. will all be included in both the Jackson County and the Dubuque County Multi-Jurisdictional Multi-Hazard Mitigation Plans.

### **Critical Facilities and Infrastructure**

Critical facilities are structures and infrastructures that the community places a priority on protecting. A critical facility is defined by FEMA as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve welfare and quality of life in the City and fulfills important public safety, emergency response, and/or disaster recovery functions. These facilities include such things as hospitals and lifeline utility systems. Damage to these facilities can impact the delivery of vital services, cause greater damages to other sections of the community and/or put special, vulnerable populations at risk in the case of a major hazard event. The Jackson County Hazard Mitigation Planning Team determined the following facilities are critical facilities and sites located in Jackson County, along with their estimated replacement valuations, if known:

The following alphabetically-ordered tables indicate the critical facilities and their replacement values by jurisdiction. See [Appendix F](#) for maps of each jurisdiction's critical facilities.

**Andrew****Critical Facilities**

| Name of Asset              | Address                                     | Replacement Value if Known |
|----------------------------|---|----------------------------|
| 1. Andrew Gas Station      | 201 N Jefferson St.                         |                            |
| 2. Wells (2)               | City Park (Block 37) & 5 Main St.           | \$500,000                  |
| 3. Lift Stations (2)       | E. Cass St. & S. Johnson St.                | \$408,000                  |
| 4. Cell Lagoons (2)        | Elm St.                                     | \$200,000                  |
| 5. Water Tower             | City Park (Corner of Clahoun & Marion Sts.) | \$750,000                  |
| 6. Andrew Community School | 13 S. Marion St.                            | \$15,000,000               |
| 7. Fire Station            | 17 N. Marion St.                            | \$3,000,000                |

**Baldwin****Critical Facilities**

| Name of Asset                  | Address                   | Replacement Value if Known |
|--------------------------------|---------------------------|----------------------------|
| 1. Water Tower                 | 4951 50 <sup>th</sup> Ave | \$750,000                  |
| 2. Fire Station                | 4658 51 <sup>st</sup> Ave | \$250,000                  |
| 3. Water Building & Pump       | 4905 51 <sup>st</sup> Ave | \$75,000                   |
| 4. Pump/Lift Station           | 4240 50 <sup>th</sup> Ave | \$16,892                   |
| 5. Sentry Siren & Pole         | 4240 50 <sup>th</sup> Ave | \$10,000                   |
| 6. Sentry Siren & Pole         | 4791 50 <sup>th</sup> Ave | \$10,000                   |
| 7. Storage & Water Pump #1     | 4791 50 <sup>th</sup> Ave | \$10,793                   |
| 8. City Hall                   | 4746 50 <sup>th</sup> Ave | \$69,197                   |
| 9. Baldwin-Nashville Telephone | 5075 Highway 64           | \$40,000                   |
| 10. D&T Super Stop & Shop      | 5358 Highway 64           | \$75,000                   |

**Bellevue****Critical Facilities**

| Name of Asset                      | Address              | Estimated Replacement Value in \$ |
|------------------------------------|----------------------|-----------------------------------|
| 1. Waster Water Treatment Facility | Highway 52 South     | \$3,000,000                       |
| 2. Fire Station                    | 301 State St.        | \$500,000                         |
| 3. Water Tower                     | Sixth & Spring St.   | \$800,000                         |
| 4. Substation 1                    | Seventh & Spring St. | \$750,000                         |
| 5. Substation 2                    | 900 North Riverview  | \$750,000                         |
| 6. Lift Station 1                  | 1600 State St.       | \$35,000                          |
| 7. Lift Station 2                  | 204 Elm St.          | \$574,000                         |

|                        |                     |             |
|------------------------|---------------------|-------------|
| 8. Lift Station 3      | 101 Sunrise Court   | \$35,000    |
| 9. Well Building 1     | Park St.            | \$162,365   |
| 10. Well Building 2    | Twelfth St.         | \$162,365   |
| 11. Ambulance Building | Twelfth St.         | \$324,000   |
| 12. City Hall/Police   | 106 North Third St. | \$1,200,000 |
| 13. Utility Plant      | 900 North Riverview | \$8,800,000 |
| 14. Cable Building     | Sixth & Spring St.  | \$1,000,000 |

### LaMotte

#### Critical Facilities

| Name of Asset                          | Address         | Replacement Value if Known |
|--|-----------------|----------------------------|
| 1. Jackson County Secondary Roads Shop | 524 Elm St.     |                            |
| 2. Bullock Ag                          | 522 Elm St.     |                            |
| 3. LaMotte Fire Station                | 609 Water St.   |                            |
| 4. Clasen's Service Station            | 905 Park Ave.   |                            |
| 5. City Garage                         | 404 Union St.   | \$50,000                   |
| 6. City Waterworks/Well House          | 409 Union St.   | \$30,000                   |
| 7. City Hall                           | 102 S. Main St. | \$100,000                  |
| 8. Wastewater Treatment Facility       | Pleasant St.    | \$300,000                  |
| 9. Lift Station                        | Pleasant St.    | \$150,000                  |
| 10. LaMotte Telephone Company          | 400 Pine St.    |                            |
| 11. Well 1                             | 409 Union St.   | \$40,000                   |

### Maquoketa

#### Critical Facilities

| Name of Asset                      | Address                | Replacement Value if Known |
|------------------------------------|------------------------|----------------------------|
| 1. City Hall                       | 201 E. Pleasant St.    | \$1,326,488                |
| 2. Law Enforcement Center          | 102 S. Niagara St.     | \$2,003,922                |
| 3. Water Tower                     | 202 East Summit Street | \$631,839                  |
| 4 Water Tower                      | South Vermont Street   | \$842,768                  |
| 5. Public Works                    | 507 North Old Hwy 61   | \$1,000,000                |
| 6. Maquoketa Municipal Light Plant | 505 North Old Hwy 61   | \$2,381,142                |
| 7. Wastewater Treatment Plant      | 110 Pershing Rd.       | \$8,895,756                |
| 8. Fire Station                    | 106 S. Niagara St.     | \$1,419,895                |
| 9. Ambulance Station               |                        |                            |
| 10. Jackson County Hospital        | 700 W. Grove St.       |                            |
| 11. Cardinal Elementary School     | 1003 Pershing Rd.      |                            |

|                                  |                             |             |
|----------------------------------|-----------------------------|-------------|
| 12. Sacred Heart School          | 806 Eddy St.                |             |
| 13. Maquoketa Middle School      | 200 E. Locust St.           |             |
| 14. Briggs Elementary School     | 400 W. Quarry St.           |             |
| 15. Maquoketa High School        | 600 Washington St.          |             |
| 16. MMEU Distribution            | 802 East Maple Street       | \$378,851   |
| 17. Courthouse                   | 201 W. Platt St.            |             |
| 18. Maquoketa Municipal Airport  | 2215 134 <sup>th</sup> Ave. | \$523,295   |
| 19. Water Plant                  | 506 North Old Hwy 61        | \$2,334,458 |
| 20. Reservoir                    | 508 North Old Hwy 61        | \$2,845,354 |
| 21. MMEU IS Substation           | 217 200 <sup>th</sup> Ave   | \$2,009,503 |
| 22. MMEU Allen Street Station    | Allen/Monroe Streets        | \$1,340,407 |
| 23. MMEU Plan #2                 | Generac Drive               | \$4,553,788 |
| 24. Prairie Creek Lift Station   | 1003 South Fifth            | \$82,517    |
| 25. Industrial Park Lift Station | 200 <sup>th</sup> Avenue    | \$90,769    |
| 26. South Slope Lift Station     | 905 South Main              | \$194,505   |
| 27. Fawn Brook Lift Station      | Fawn Brook Trailer Park     | \$109,257   |
| 28. NW Lift Station              | 212 North Jones             | \$93,126    |

## Miles

### Critical Facilities

| Name of Asset                   | Address                         | Replacement Value if Known |
|---------------------------------|---------------------------------|----------------------------|
| 1. Miles Mini Mart              | 658 Ferry Rd, Box 306           |                            |
| 2. East Central School District | 439 Wilson St., Box 340         |                            |
| 3. City Well #1/Water Tower     | 42 Section Rd                   | \$428,877                  |
| 4 City Well #2                  | 32 Forrest St                   | \$17,721                   |
| 5 City Hall/Ambulance           | 430 Ferry Rd., Box 309          | \$149,431                  |
| 6a & 6b Warning Sirens          | 32 Forrest St & 55 Section Road | \$13,133                   |
| 7 Miles Telephone Co            | 342 Ferrd Rd., Box 280          |                            |
| 8 Fire Station                  | 28 Orson St.                    |                            |
| 9 Sewage Plant                  | 9 Centennial St.                | \$69,571                   |

## Monmouth

### Critical Facilities

| Name of Asset            | Address        | Replacement Value if Known |
|--------------------------|----------------|----------------------------|
| 1 Garage/City Hall/Water | 501 N Division | \$196,535                  |

|   |                |           |
|---|----------------|-----------|
| 2 Sewer Lagoon                          | Highway 64     |           |
| 3 Lift Station, generator, storage shed |                | \$32,586  |
| 4 Wells (2 total, but only 1 in use)    |                |           |
| 5 Water Tower                           |                | \$251,801 |
| 6 Old School Gym (Community Center)     | 800 N Division | \$682,502 |
| 7 Monmouth Park Shelter                 | 400 N Division | \$18,008  |

## Preston

### Critical Facilities

| Name of Asset                             | Address                     | Replacement Value if Known |
|---|-----------------------------|----------------------------|
| 1. Jackson County Shed                    | 42186 17 <sup>th</sup> St.  |                            |
| 2. St. Joseph's Catholic Church           | 250 S. Faith St.            | \$2,507,000                |
| 3. Preston High School                    | 321 W. School St.           | \$6,427,193                |
| 4. Preston Elementary School              | 121 S. Mitchell St.         | \$4,866,654                |
| 5. Methodist Church                       | 141 S. Stephens St.         | \$154,000                  |
| 6. Main Water Tower                       | 21 W. Tower St.             | \$717,704                  |
| 7. Secondary Water Tower                  | 420 S. Access St.           | \$283,800                  |
| 8. Well #1                                | 501 S. Access St.           | \$11,763                   |
| 9. Well #2                                | 501.1 S. Access St.         | \$11,763                   |
| 10. Two Good Park                         | 150 W. White St.            | \$129,982                  |
| 11. Water System Building                 | 21 W. Tower St.             | \$400,000                  |
| 12. City Hall, Library and Police Complex | 1 W. Gillet St.             | \$1,759,835                |
| 13. Ambulance Shed                        | 42 N. Simpson St.           | \$90,000                   |
| 14. Preston Light Plant                   | 22 W. Gillet St.            | \$10,316,376               |
| 15. Preston Fire Department               | 14 N. Mitchell St.          | \$520,231                  |
| 16. Sirens                                | 210 Manufacturing Lane      |                            |
| 17. Paging Tower & System                 | 21 W. Tower St.             | \$4,300                    |
| 18. Warning Sirens                        | 211 W. Mildred              | \$4,266                    |
| 20. Preston Natural Gas Plant             | 404 E. White St.            |                            |
| 21. Country Store                         | 21 E. White St.             |                            |
| 22. Medical Associates                    | 411 W. White St.            |                            |
| 23. St. John's Lutheran Church            | 204 N. Anna St.             | \$1,694,839                |
| 24. Oly's Gas Station                     | 311 W. White St.            |                            |
| 25. Bullock, Inc.                         | 430 W. White St.            |                            |
| 26. Kunau Implement                       | 420 W. White St.            |                            |
| 30. Farrell, Inc.                         | 309 1 <sup>st</sup> St. NW  |                            |
| 31. Preston City Sheds                    | 513 N. Mitchell St.         | \$255,198                  |
| 32. Lagoon                                | 3736 435 <sup>th</sup> Ave. | \$188,599                  |

|                                  |                            |             |
|----------------------------------|----------------------------|-------------|
| 33. Lift Stations Main           | 210 Manufacturing Lane     | \$260,195   |
| 34. West Lift Station            | 762 ½ W. St. Joseph        | \$54,548    |
| 35. Preston Telephone Company    | 11 Anna St.                |             |
| 36. Westside Park                | 512 W. School St.          | \$13,487    |
| 37. Peppermint Park              |                            | \$11,094    |
| 38. East Lift Station            | 43076 21 <sup>st</sup> St. | \$42,294    |
| 39. Warning Sirens               | 250 S. St. Joseph St.      | \$5,000     |
| 40. Substation/Transformer       | 44509 17 <sup>th</sup> St. | \$598,470   |
| 41. Transformer                  | 28 W. Asmussen St.         | \$57,369    |
| \$2. Electric Plant & Substation | 22 W. Gillet St.           | \$8,192,717 |

## Sabula

### Critical Facilities

| Name of Asset                       | Address                              | Estimated Replacement Value in \$ |
|-------------------------------------|--------------------------------------|-----------------------------------|
| 1. Water Tower & Well#1             | 404 Bank St.                         | \$658,126                         |
| 2. Well #2                          | 405 Vulcan St.                       | \$530,604                         |
| 3. Sewage Treatment Plant           | 1512 South Ave.                      | \$535,704                         |
| 4. Sabula Sewer Maintenance Garage  | 1113 Broad St.                       | \$100,000                         |
| 5. City Storm Pump                  | 1001 Broad St.                       | \$750,000                         |
| 6. Substation                       | 411 Broad St.                        | \$750,000                         |
| 7. Above Ground Storage Tank        | 405 Vulcan St.                       | \$120,000                         |
| 8. Lift Station                     | 1101 Broad St.                       | \$37,885                          |
| 9. Levee Pump Station               | Near Lake St.                        | \$85,771                          |
| 10. Proposed Levee Pump Station     | Near Lake St.                        | \$300,000                         |
| 11. Well #1 Control Building        | 404 Bank St.                         | \$162,365                         |
| 12. Well #2 Control Building        | 405 Vulcan St.                       | \$162,365                         |
| 13. Regulator Station               | Iowa Avenue                          | \$150,000                         |
| 14. Town Natural Gas Border Station | 61151 47 <sup>th</sup> St./Iowa Ave. | \$20,000                          |
| 15. U.S. Post Office                | 411 Broad St.                        | \$529,065                         |
| 16. Sabula City Hall                | 411 Broad St.                        | Combined with #15                 |
| 19. Levee Drainage Structures (4)   | South Levee                          | \$150,000                         |
| 20. East Central Community Schools  | 706 Broad St.                        | \$4,375,515                       |
| 21. Sabula Fire Station             | 201 Vulcan St.                       | \$931,208                         |
| 22. Siren #1                        | 404 Bank St.                         | \$14,462                          |
| 23. Siren #2                        | 1101 Broad St.                       | \$14,462                          |
| 24. Police Station                  | 504 River St.                        | \$57,215                          |
| 25. Library                         | 512 Elk St.                          | \$87,950                          |

**Spragueville**  
**Critical Facilities**

| Name of Asset                 | Address             | Replacement Value if Known |
|-------------------------------|---------------------|----------------------------|
| 1. Community Center/City Hall | 105 S. Division St. | \$112,607                  |

**Springbrook**  
**Critical Facilities**

| Name of Asset                            | Address                       | Replacement Value if Known |
|--|-------------------------------|----------------------------|
| 1. Springbrook Fire Station/City Hall    | 101 E. Main St.               | \$315,759                  |
| 2. St. Peter & Paul Church               | 111 E. Main St.               |                            |
| 3. Springbrook Country Dining Restaurant | 100 E. Main St.               |                            |
| 4. City Water System                     | 102 W. Main St.               | \$67,570                   |
| 5. City Lift Station                     | 108 S. 1 <sup>st</sup> St.    | \$45,046                   |
| 6. City Lift Station                     | 12 0 ½ N. 1 <sup>st</sup> St. | \$46,201                   |

**St. Donatus**  
**Critical Facilities**

| Name of Asset                  | Address                    | Replacement Value if Known |
|--------------------------------|----------------------------|----------------------------|
| 1. Waste Water Treatment Plant | Highway 52 South           | \$300,000                  |
| 2. City Hall                   | 114 E. 2 <sup>nd</sup> St. | \$202,000                  |

**Zwingle**  
**Critical Facilities**

| Name of Asset | Address | Replacement Value if Known |
|---------------|---------|----------------------------|
| Sewer Station | See map |                            |

**Unincorporated Jackson County**  
**Critical Facilities**

| Name of Asset                | Address                            | Replacement Value if Known |
|------------------------------|------------------------------------|----------------------------|
| 1. Jackson County Courthouse | 201 West Platt Street<br>Maquoketa | \$2,960,000                |
| 2. Sheriff's Office          | 104 South Niagra<br>Maquoketa      | \$444,810                  |
| 3. Main Maintenance Shed     | 419-421 E Grove                    | \$1,124,010                |

|  |  |             |
|--|--|-------------|
| & Equipment  | Maquoketa  |             |
| 4.Maintenance Shed                                   | Sec 24 Otter Creek Twp                               | \$12,400    |
| 5.Maintenance Shed                                   | Sec 15 Butler Twp                                    | \$12,400    |
| 6.Maintenance Shed                                   | Sec 13 Bellevue Twp                                  | \$12,400    |
| 7.Maintenance Shed                                   | Sec 24 Jackson Twp                                   | \$12,400    |
| 8.Maintenance Shed                                   | Sec 30 Famers Creek Twp                              | \$13,500    |
| 9.Maintenance Shed                                   | Sec 15 Iowa Twp                                      | \$12,400    |
| 10.Maintenance Shed                                  | Sec 29 Van Buren Twp                                 | \$47,400    |
| 11.Maintenance Shed                                  | W Hwy 64   | \$43,400    |
| 12.Jackson County<br>Emergency Management<br>Offices | 18720 250 <sup>th</sup> Avenue<br>Bellevue, IA 52031 | \$1,929,440 |
| 13.HIC   | 18670 63 <sup>rd</sup> St.<br>Maquoketa              | \$1,430,390 |
| 14. Law Repeaters                                    | See map  |             |
| 15. Fire Repeaters                                   | See map  |             |
| 16. EMA Repeaters                                    | See map  |             |

## Vulnerable Populations

FEMA defines a vulnerable population as elderly, especially those who require special response assistance, areas of high density population, including such facilities as childcare centers, non-English speaking residents, and others. These facilities must be closely monitored throughout and following storm events to assure the greatest safety precautions are being maintained and responses to events are handled quickly and efficiently. See [Appendix G](#) for a table of licensed daycare centers and preschools in the County. No other vulnerable population centers were identified in Baldwin, LaMotte, Monmouth, St. Donatus, Spragueville, Springbrook and the unincorporated county, however; the HMPT identified the following vulnerable population centers, by jurisdiction, in Jackson County:

### Andrew

| Name         | Address                |
|--------------|------------------------|
| Briggs Manor | 14 & 16 N. Johnson St. |

### Bellevue

| Name                    | Address            |
|-------------------------|--------------------|
| Group Home              | 401 N. Sixth St.   |
| Group Home              | 101 N. Seventh St. |
| Mill Valley Care Center | 1201 Park St.      |
| Sunrise Villa           | 308 N. Twelfth St. |
| ERIHA Housing           | 400 N. Fourth St.  |
| ERIHA Housing           | 207 S. Second St.  |
| Ridgeview Apartments    | 1509 State St.     |

## Maquoketa

| Name                                  | Address                 |
|---------------------------------------|-------------------------|
| Maquoketa High School                 | 600 Washington          |
| Sunshine Preschool                    | 101 Creslane Drive      |
| Briggs Elementary                     | 400 West Quarry         |
| Cardinal Elementary                   | 1003 Pershing           |
| Sacred Heart School                   | 806 Eddy Street         |
| Hurst Hotel Apartments                | 227 South Main Street   |
| River Village Apartments              | 402 North Arcade        |
| Crestridge Nursing Home               | 1015 Wesley Drive       |
| Clover Ridge                          | 205 Ehlers Lane         |
| Maquoketa Care Center                 | 1202 German Street      |
| Hurst Apartments                      | 202 South Olive Street  |
| Jackson County Detention Center       | 104 South Niagara       |
| Jackson County Regional Health Center | 700 West Grove Street   |
| Jackson County Senior Center          | 1000 East Quarry Street |
| Maquoketa Middle School               | 200 East Locust Street  |
| Hillcrest School                      | 115 South Olive Street  |
| Sacred Heart Preschool                | 302 Eddy                |

## Miles

| Name                  | Address                   |
|-----------------------|---------------------------|
| Elderly Housing Units | Lincoln & Washington Sts. |
| East Central School   |                           |

## Preston

| Name               | Address  |
|--------------------|--|
| Operation New View | 141 S. Stephens  |
| The Manors         | 11 N. Winter St.<br>51 N. Winter St.<br>91 N. Winter St.<br>42 N. Winter St. |
| DAC                | St. Joseph's St.   |

## Sabula

| Name                          | Address          |
|-------------------------------|------------------|
| East Central Community School | 706 Broad St.    |
| Calvary Lutheran Church       | 716 Pearl St.    |
| Methodist Church              | 716 Elk St.      |
| Sabula Elderly Housing        | 208 Sycamore St. |
| City Hall/Community Center    | 411 Broad St.    |
| Jackson County Campground     |                  |

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## Cultural and Historic Resources

Assessing the vulnerability of Jackson County to disaster also involves inventorying the historical and cultural assets of the area. This step is important for the following reasons:

- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a disaster, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.

### *Cultural and Historic Resources*

Preservation of the cultural heritage of this area has been identified as an important value and is ensured by a variety of initiatives. Several national and state historic inventories were reviewed to identify historical and cultural assets in Jackson County.

**The National Register of Historic Places** is the Nation's official list of cultural resources worthy of preservation. The National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources. Properties list include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the US Department of the Interior. Table 3.3C lists the Jackson County properties that are currently on the National Register of Historic Places.

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**Table 3.3C Jackson County properties on the National Register of Historic Places**

| Property Name                        | Address                     | Location  | Date Listed |
|--------------------------------------|-----------------------------|-----------|-------------|
| Anderson D.H. Building               | 129 S. Main St.             | Maquoketa | 4-10-86     |
| Anderson D.H. House                  | 315 E. Locust               | Maquoketa | 8-9-91      |
| Bassnett-Nickerson House             | 116 S. Vermont              | Maquoketa | 7-24-92     |
| Bellevue Herald Building             | 130 S. Riverview St.        | Bellevue  | 8-30-91     |
| Big Mill Homestead                   | Paradise Valley Rd.         | Bellevue  | 8-30-91     |
| Buildings at 101 N. Riverview St.    | 101 N. Riverview St.        | Bellevue  | 8-30-91     |
| Building at 126 N. Riverview St.     | 126 S. Riverview St.        | Bellevue  | 8-30-91     |
| Building at 130-132 N. Riverview St. | 130-132 N. Riverview St.    | Bellevue  | 8-30-91     |
| Building at 306 S. Second St.        | 306 S. Second St.           | Bellevue  | 8-30-91     |
| Butterworth Nathaniel House          | E side of IA 62 N of Andrew | Andrew    | 7-24-91     |
| Canton School                        | South St.                   | Canton    | 7-24-79     |

| Property Name                                   | Address  | Location    | Date Listed |
|---|--|-------------|-------------|
| Central School                                  | Jct. of Bellevue-Canton & Dubuque-Canton Rds.            | Canton      | 7-24-91     |
| Chicago Milwaukee & St. Paul Narrow Gauge Depot | LaMotte Market St.                                       | LaMotte     | 2-17-95     |
| Cooper George House                             | 413 W. Platt St.   | Maquoketa   | 8-9-91      |
| Cundill Block                                   | 202 S. Main  | Maquoketa   | 8-9-91      |
| Decker House Hotel                              | 128 N. Main St.  | Maquoketa   | 12-29-78    |
| DeFries House Barn & Carpenter Shop             | E side of Co. Rd. (232Ave) W of jct. with IA 62          | Andrew      | 7-24-92     |
| Dominy John S. House                            | 605 Pearl St.  | Sabula      | 7-24-92     |
| Dyas Hexagonal Barn                             | US 52  | Bellevue    | 6/30/86     |
| Dyas George House                               | Co. Rd. Z-15 SW of jct. with US 52                       | Bellevue    | 8-30-91     |
| Dyas William Barn                               | Co. Rd. Z-15 SW of jct. with US 52                       | Bellevue    | 8-30-91     |
| First National Bank                             | 120 S. Main  | Maquoketa   | 8-9-91      |
| Fritz Chapel                                    | Spruce Creek Rd. W of jct. with US 52                    | Bellevue    | 8-30-91     |
| Gehlen House and Barn                           | US 52  | St. Donatus | 6-18-79     |
| Godard Milton House                             | S side of 7 <sup>th</sup> St. SW of Maquoketa            | Maquoketa   | 7-24-92     |
| Harris Wagon & Carriage Shop                    | Jct of Main & Pine Sts.                                  | LaMotte     | 7-24-92     |
| Hotel Hurst                                     | 227 S. Main St.  | Maquoketa   | 12-27-89    |
| Hotel Hurst Garage                              | 219 S. Main St.  | Maquoketa   | 12-27-89    |
| House at 111 E. Maple St.                       | 111 E. Maple St.   | Maquoketa   | 8-9-91      |
| House at 505 Court St.                          | 505 Court St.  | Bellevue    | 8-30-91     |
| Hurst A.A. House                                | 513 W. Platt St.   | Maquoketa   | 8-9-91      |
| Hurstville Historic District                    | N of Maquoketa on US 61                                  | Maquoketa   | 12-3-79     |
| Insance Asylum at the County Poor Farm          | E. side Co. Rd. Y61 (250 <sup>th</sup> Ave.) N of Andrew | Andrew      | 7-24-92     |
| IIOF Building                                   | 102 N. Main  | Maquoketa   | 8-9-91      |
| Jackson County Courthouse                       | Bounded by Third State Fourth and Court Sts.             | Bellevue    | 7-2-81      |
| Jackson County Jail                             | Emmet St.  | Andrew      | 12-12-78    |
| Johnson Mrs. Lydia House                        | 209 E. Locust  | Maquoketa   | 8-9-91      |
| Kegler Gonner Store and Post Office             | 100 E. Main  | Springbrook | 6-27-85     |
| Kucheman Building                               | 100 N. Second St.  | Bellevue    | 8-30-91     |
| Lake John House                                 | 601 w. Platt St.   | Maquoketa   | 12-30-91    |
| Lubben Henry House Smokehouse and Springhouse   | W side of Co. Rd. Y34 of Baldwin                         | Baldwin     | 7-24-92     |
| Lyon Block                                      | 112-116 N Main   | Maquoketa   | 8-9-91      |
| Maquoketa Caves State Park Historic District    | Co. Rd. 428 NW of Maquoketa                              | Maquoketa   | 12-23-91    |
| Maquoketa Company – Clinton Machine Company     | 605 E. Maple St.   | Maquoketa   | 8-23-06     |

| Property Name                               | Address  | Location    | Date Listed |
|---|--|-------------|-------------|
| Administration Building                     |  |             |             |
| Maquoketa Free Public Library               | Second & Pleasant  | Maquoketa   | 12-27-89    |
| Merrero Building                            | 111-115 S. Main  | Maquoketa   | 8-9-91      |
| Mill Rock School                            | W. Side of Co. Rd.<br>(153 Ave) S of<br>Baldwin                        | Baldwin     | 7-24-92     |
| Mitchell-Maskrey Mill                       | 120 E. Pleasant  | Maquoketa   | 8-9-91      |
| New Era Building                            | 115-117 E. Platt   | Maquoketa   | 8-9-91      |
| Niemann Theodore House<br>and Spring House  | Spruce Creek Rd. W<br>of jct. with US 52                               | Bellevue    | 8-30-91     |
| Organ Alexander House                       | 607 W. Summit  | Maquoketa   | 8-9-91      |
| Paradise Farm                               | W of Bellevue  | Bellevue    | 7-13-77     |
| Perham House                                | 213 E Pleasant   | Maquoketa   | 8-9-91      |
| Polygonal Barn                              | Van Buren Township   | Van Buren   | 6-30-86     |
| Potter's E.G. Jasper Flour<br>Mill          | South and 2 <sup>nd</sup> Street                                       | Bellevue    | 4-19-84     |
| Robb House and Spring<br>House              | Paradise Valley Rd.<br>W of Bellevue                                   | Bellevue    | 8-30-91     |
| Roling Henry House                          | Spruce Creek Rd. W<br>of jct. with US 52                               | Bellevue    | 8-30-91     |
| Savanna-Sabula Bridge                       | IA 64, US 52 over<br>Mississippi River                                 | Sabula      | 8-27-99     |
| Sanborn C.M. Building                       | 203 S. Main  | Maquoketa   | 8-9-91      |
| Sieben Mrs. Margaret House                  | .3 mi. E of Co. Rd.<br>Y34 N of Baldwin                                | Baldwin     | 7-24-92     |
| SlYe Thomas House                           | S side of Co. Rd.<br>(184 Street) E of jct.<br>with IA 62              | Andrew      | 7-24-92     |
| Spring Side                                 | Jct. of US 52 and<br>Ensign Rd.  | Bellevue    | 12-28-90    |
| Squiers J.E. House                          | 418 W. Pleasant St.  | Maquoketa   | 4-20-95     |
| St. Lawrence Catholic<br>Church             | Bellevue-Cascade<br>Rd. (Co. Rd. D61) W<br>of jct. with US 61          | Otter Creek | 7-24-92     |
| St. Patrick's Church                        | Garryown W.<br>Bellevue-Cascade<br>Rd. (Co. Rd. D61) W<br>of Garryowen | Garryown    | 7-24-92     |
| Swigert W.B. House                          | 309 N. Main Street   | Maquoketa   | 8/9/91      |
| Taubman Henry House                         | 303 E. Pleasant<br>Street  | Maquoketa   | 8/9/91      |
| Upper Paradise                              | Paradise Valley Rd. W<br>of Bellevue                                   | Bellevue    | 8/30/91     |
| Village of St. Donatus<br>Historic District | Jct. of US 52/Main<br>Street and First<br>Street                       | St. Donatus | 11/8/89     |
| West Pleasant Stret Historic<br>District    | Pleasant Street<br>between Second and<br>Prospect Sts.                 | Maquoketa   | 8/9/91      |
| Williams Seneca Mill                        | E of Maquoketa off<br>US 61  | Maquoketa   | 9/1/76      |
| Wilson Anson House                          | S of Maquoketa of<br>US 61   | Maquoketa   | 11/17/77    |

| Property Name       | Address          | Location | Date Listed |
|---------------------|------------------|----------|-------------|
| Wood Jeremiah House | 802 River Street | Sabula   | 11/10/82    |

<http://www.iowahistory.org>

It should be noted that as defined by the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

### Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster. After a disaster, economic vitality is the engine that drives recovery. Every community has a specific set of economic drivers, which are important to understand when planning ahead to reduce disaster impacts to the economy. When major employers are unable to return to normal operations, impacts ripple throughout the community. Table 3.28 lists the top 10 employers in Jackson County.

**Table 3.3D Top 10 Industrial Employers in Planning Area\***

| Employer              | Number of Employees | City Located |
|-----------------------|---------------------|--------------|
| Family Dollar         | 400                 | Maquoketa    |
| DAC, Inc.             | 223                 | Maquoketa    |
| Pacific Coast Feather | 150                 | Maquoketa    |
| Rockwell Collins      | 141                 | Bellevue     |
| HUSCO International   | 115                 | Maquoketa    |
| Plastics Unlimited    | 58                  | Preston      |
| Maquoketa Web         | 53                  | Maquoketa    |
| Dynamic Tube          | 45                  | Maquoketa    |
| Precision Metal Works | 41                  | Maquoketa    |
| Wady Industries       | 36                  | Maquoketa    |

\*Jackson County School District and Jackson County Regional Health Center are both considered to be major government employers in the area, as is the County, but this list was created by the Maquoketa Chamber of Commerce and is limited to Industrial Employers.

### 3.4 Vulnerability by Hazard

In order to focus on the most critical hazards, those assigned a level of high planning significance (Priority 1) were given more extensive attention in the remainder of this analysis (e.g. quantitative analysis or loss estimation).

This section describes overall vulnerability, identifies structures, and estimates potential losses to buildings, infrastructure, and critical facilities located in identified hazard areas.

This assessment was limited to the hazards that were considered a Priority 1 in planning significance, based on HMPT input and the hazard profiles.

This assessment is also limited by the data available for the Priority 1 ranked hazards. The methods of analysis vary by hazard type and available data. Many of the identified hazards, particularly weather related hazards, affect the entire planning area, and specific hazard areas cannot be mapped geographically. For these hazards, vulnerability is mainly discussed in qualitative terms because data on potential losses to structures is not available. One source frequently used is the National Climatic Data Center (NCDC), however, it should be noted that this is not a comprehensive record and does not fully indicate the number of events or losses in Jackson County.

### **3.4.1 Dam and Levee Failure**

#### ***Vulnerability Overview***

Dam or levee failure is typically an additional or secondary impact of another disaster such as flooding or earthquake. Data from the National Inventory of Dams and State of Iowa indicates that Jackson County has three high hazard dams or levees. A dam is classified as “high hazard” if it’s located where failure would likely cause loss of life or serious damage to homes, industrial or commercial buildings, important utilities, primary highways or roadways, without regard to condition of the dam.

#### ***Identifying Structures and Estimating Potential Losses***

There is currently one high hazard dam along the Mississippi River (Lock and Dam Number 12), one high hazard dam along the Maquoketa River (Lakehurst) and one major levee (Green Island) in Jackson County. Within corporate limits, Maquoketa has a levee along the south bank of the Maquoketa River, and Bellevue and Sabula both have levees protecting those communities from floodwaters along the Mississippi River. In 2010 the Green Island Levee was breached, inundating many acres of farmland. The levee protects homes and farmland from floodwaters from the confluence of the Maquoketa River and Mississippi River. Currently the rebuilding of the Green Island Levee is a point of contention between the county government, the Army Corps of Engineers, and citizens living within the area that the levee protects.

Lakehurst Dam provides hydroelectric power to Maquoketa and other parts of Jackson County. In 2010 the Maquoketa River saw one of its worst floods in recent memory, but no problems occurred. Failure of the dam is unlikely, but if it did occur, would deprive many households and businesses of power.

Jackson County has no ordinances for water control.

## ***Future Development***

With greater attention being given to the risk of property damage and loss of life due to flooding, future development in Jackson County will most likely be restricted to areas less prone to flood risk, most likely outside the 100-year or even 500-year flood zones. Nevertheless, both Bellevue and Sabula have many residential and commercial properties located near the Mississippi River. However, the levees should adequately protect those communities in the event of a 1% annual flood. As for unincorporated Jackson County, areas of concern include agricultural properties along the Maquoketa and Mississippi Rivers, and the residential areas around Spruce Creek north of Bellevue.

### **3.4.2 Extreme Heat**

#### ***Vulnerability Overview***

Extreme Heat is a county-wide concern and because the hazard occurs with such regularity, the affect needs to be taken into consideration. Jackson County has few sizeable cities, and is heavily agrarian, so needs to prepare for extreme temperatures on human and animal life as well as property and crop damages.

#### ***Identifying Structures and Estimating Potential Losses***

No specific estimation tools are available for the affect of extreme heat on structures, so estimation of potential losses is not available either.

#### ***Future Development***

Future development projects should consider extreme heat at the planning, engineering and architectural design stage with the goal of reducing vulnerability.

### **3.4.3 Flood – Flash and River**

#### ***Vulnerability Overview***

According to the vulnerability analysis and the loss estimates provided in this section, the unincorporated county would be hit the hardest by a 100-year flood.

#### ***Identifying Structures and Estimating Potential Losses***

**Repetitive Loss:** Appendix H shows the HAZUS flood plain maps for each potentially affected jurisdiction. Only the cities of Sabula and Maquoketa have experienced repetitive loss to structures, but the losses are small. The total for the City of Sabula was two business properties totaling \$38,818.74, while for the City of Maquoketa total losses paid were \$13,855.53 for one business structure.

The best available data for flooding in Jackson County was generated by HAZUS-MH MR4, FEMA's software program for estimating potential losses from disasters.

HAZUS was used to generate a one percent annual flood, or base flood, event for major rivers and creeks in the County. The software produces a flood polygon and flood-depth grid that represents the base flood. While not as accurate as official flood maps, such as digital flood insurance rate maps, these floodplain boundaries are used in GIS-based loss estimation.

HAZUS provides reports on the number of buildings impacted, building repair costs, and the associated loss of building contents and business inventory. Building damage can cause additional losses to a community as a whole by restricting the building's ability to function properly. Income loss data accounts for business interruption and rental income losses as well as the resources associated with damage repair and job and housing losses. These losses are calculated by HAZUS using a methodology based on the building damage estimates. Flood damage is directly related to the depth of flooding. For example, a two-foot flood generally results in about 20 percent damage to the structure (which translates to 20 percent of the structure's replacement value).

After running the HAZUS analysis for the 100-year flood event, the building inventory loss estimates (which are linked to census block geography) were sorted by incorporated communities in Jackson County and the unincorporated County to illustrate how the potential for loss varies across the planning area. Table 3.4A shows estimate potential building losses by jurisdiction.

Unincorporated Jackson County is at most risk to flood losses according to this analysis with nearly 50% of all estimated losses in the County. The cities of Bellevue and Maquoketa have the greatest risk for the incorporated jurisdictions with 19.56% and 17.40% respectively.

**Table 3.4A Estimated Flood Losses by Jurisdiction**

| City                         | Building Loss       | Contents Loss      | Inventory Loss | Relocation Cost | Income Loss    | Rental Income Loss | Wage Loss      | Direct Output Loss | Total Loss          | Percent of Total |
|------------------------------|---------------------|--------------------|----------------|-----------------|----------------|--------------------|----------------|--------------------|---------------------|------------------|
| Baldwin                      | \$153,000           | \$79,000           | \$0            | \$0             | \$0            | \$0                | \$0            | \$0                | \$232,000           | 1.11%            |
| Bellevue                     | \$2,613,000         | \$1,459,000        | \$0            | \$1,000         | \$1,000        | \$1,000            | \$2,000        | \$5,000            | \$4,082,000         | 19.56%           |
| Maquoketa                    | \$2,263,000         | \$1,350,000        | \$0            | \$2,000         | \$1,000        | \$0                | \$4,000        | \$11,000           | \$3,631,000         | 17.40%           |
| Monmouth                     | \$766,000           | \$383,000          | \$0            | \$0             | \$0            | \$0                | \$0            | \$0                | \$1,149,000         | 5.51%            |
| Preston                      | \$252,000           | \$133,000          | \$0            | \$0             | \$0            | \$0                | \$0            | \$0                | \$385,000           | 1.84%            |
| Sabula                       | \$77,000            | \$42,000           | \$0            | \$0             | \$0            | \$0                | \$0            | \$0                | \$119,000           | 0.57%            |
| St. Donatus                  | \$134,000           | \$87,000           | \$0            | \$0             | \$0            | \$0                | \$0            | \$1,000            | \$222,000           | 1.06%            |
| Spragueville                 | \$615,000           | \$323,000          | \$0            | \$1,000         | \$0            | \$0                | \$0            | \$0                | \$939,000           | 4.50%            |
| <i>Uninc. Jackson County</i> | \$6,760,000         | \$3,352,000        | \$0            | \$0             | \$0            | \$0                | \$0            | \$0                | \$10,112,000        | 48.45%           |
| <b>TOTAL</b>                 | <b>\$13,633,000</b> | <b>\$7,208,000</b> | <b>\$0</b>     | <b>\$4,000</b>  | <b>\$2,000</b> | <b>\$1,000</b>     | <b>\$6,000</b> | <b>\$17,000</b>    | <b>\$20,871,000</b> | <b>100.00%</b>   |

Source: HAZUS-MH MRS

|                             |
|-----------------------------|
| Cities with no flood losses |
| Andrew                      |
| La Motte                    |
| Miles                       |
| Springbrook                 |

Default HAZUS-MH data was used to develop the loss estimates. Thus, the potential for losses derived from HAZUS-MH, the best available data, may contain some inaccuracies. The building valuations used in HAZUS-MH MR4 are updated to R.S. Means 2006 and commercial data is updated to Dun & Bradstreet 2006. There could be errors and inadequacies associated with the hydrologic and hydraulic modeling of the HAZUS-MH model. The damaged building counts generated by HAZUS-MH are susceptible to rounding errors and are likely the weakest output of the model due to the use of census blocks for analysis.

Appendix H shows the HAZUS 100-year flood plain maps for each potentially affected jurisdiction.

### ***Future Development***

The risk of flooding to future development in Jackson County should be minimized by the floodplain management programs of the County and jurisdictions in the planning area, if properly enforced. Risk should be further reduced by strengthening floodplain ordinances beyond minimum NFIP requirements.

### **3.4.4 Severe Winter Storms**

#### ***Vulnerability Overview***

Overall vulnerability to severe winter storms relative to other hazards is considered high, with significant potential impact to the general population and/or built environment and significant exposure of assets. Winter storms typically involve snow and ice, occasionally accompanied by high winds, which can cause downed trees and power lines, power outages, accidents, and road closures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets in the planning area and affect the jurisdiction equally. The most significant damage during winter storm events occurs when freezing rain and drizzle accumulate on utility poles and power lines causing widespread power outages.

During heavy snow and ice events, the threat to public safety is typically the greatest concern. Lower income and elderly populations are more at risk in cases of power outages during severe winter storms. These storms also impact the local economy by disrupting transportation, school and commercial activities. Travelers on roadways and highways in Jackson County, particularly along remote stretches of road, can become stranded, requiring search and rescue assistance and shelter provisions. Agriculture and livestock are also vulnerable to extreme cold temperatures and heavy snow.

#### ***Identifying Structures and Estimating Potential Losses***

Buildings that have tree limbs hanging over them are more vulnerable to damage by falling limbs. Utility power poles and lines are the critical facilities that are most vulnerable. Potential losses to the electric line infrastructure are difficult to quantify. Roads and bridges covered with ice make travel treacherous and slow emergency vehicles. Businesses experience losses as a

result of closure during power outages. Schools also often must close. Other losses as a result of winter storm are not quantifiable at this time.

### ***Future Development***

Residential development is occurring in most incorporated cities within Jackson County, with the most rapid growth in Maquoketa. Although future residential or commercial buildings built to code should be able to withstand snow and ice loads from severe winter storms, the increased number of developments will place additional demands for utility infrastructure on the current systems. HMPT recognizes the need for investment for utility infrastructure, including burial of electric utilities and the addition of poles in areas prone to ice accumulation. These actions should decrease future losses.

### **3.4.5 Thunderstorms & Lightning**

#### ***Vulnerability Overview***

Over the past 60 years, NCDC recorded 122 thunderstorm events in Jackson County; in the last 15 years, thunderstorm events resulted in \$1.8 million of property damage. The HMPT was additionally concerned that lightning could damage electronic equipment located inside buildings and disable communications equipment and warning transmitters.

#### ***Identifying Structures and Estimating Potential Losses***

Specific losses associated with electronic equipment are not available.

#### ***Future Development***

Current development trends for Jackson County are unlikely to substantively increase or decrease vulnerability to thunderstorm and lightning.

### **3.4.6 Tornado**

#### ***Vulnerability Overview***

A tornado that causes widespread damage in Jackson County is likely based on historical events. All above-ground buildings, infrastructure, and critical facilities are at risk of damage. At this time, there are no buildings that have FEMA-approved tornado shelters, however the City of Bellevue is considering building one in conjunction with a recreation center, should funding assistance become available again.

#### ***Identifying Structures and Estimating Potential Losses***

Fourteen tornadoes have been documented by NCDC in Jackson County in the past 60 years. Four injuries but no deaths were reported, along with \$4.1 million in property damages and \$0 in crop damages.

To assess vulnerability to this damaging hazard, the HMPT took the cumulative property damages of \$32.5 million and divided by the 27 tornadoes cited, which would give an average of \$1.2 million in property damages per tornado. This methodology is inexact at best.

### ***Future Development***

Future residential or commercial buildings built to code should be less vulnerable to tornadoes. The number of schools and communities within the jurisdiction wishing to include a FEMA shelter is increasing, and although these shelters will not decrease the amount of property damaged, they will save lives. Future development that does occur in Jackson County should consider tornado hazards at the planning, engineering and architectural design stages.

### **3.4.7 Windstorm**

#### ***Vulnerability Overview***

Windstorms in Jackson County are rarely life threatening, but do disrupt daily activities and cause damage to buildings, trees, and utilities.

#### ***Identifying Structures and Estimating Potential Losses***

Windstorms affect the entire planning area, including all above-ground structures and utilities. There are no specifically identified hazard areas or available data to identify specific structures at risk or estimate potential losses, although NCDC cites 13 high wind events in Jackson County in the past 60 years that caused a combined \$9 million in property damages (or an average of \$692,307 per event).

#### ***Future Development***

Future development projects should consider windstorm hazards at the planning, engineering and architectural design stage with the goal of reducing vulnerability within the parameters of existing building codes, design standards or permits required by each jurisdiction.

**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 developed by the Hazard Mitigation Planning Team (HMPT) based on the risk assessment. The mitigation strategy was developed through a collaborative group process and consists of goals, objectives, and mitigation actions. The following definitions are based upon those found in FEMA publication 386-3, *Developing a Mitigation Plan* (2002):

- **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.
- **Objectives** define strategies or implementation steps to attain the identified goals and are specific and measurable.
- **Mitigation Actions** are specific actions that help achieve goals and objectives.

#### **4.1 Goals and Objectives**

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The HMPT developed goals and objectives to provide direction for reducing hazard-related losses in Jackson County. These were based upon the results of the risk assessment and a review of goals and objectives from other state and local plans, specifically, the Iowa Hazard Mitigation Plan, 2007 and the Jackson County Emergency Operations Plan. This review was to ensure that this plan's mitigation strategy was integrated with existing plans and policies. Through a brainstorming process at its meetings, the HMPT identified a variety of possible goals and then came to a consensus on four goals. Following the development of the goals, the HMPT identified specific objectives to achieve each goal. Goals and objectives are listed below, but are not prioritized.

**Goal #1: Increase capabilities within Jackson County entities to mitigate the effects of hazards by enhancing existing or designing and adopting new policies that will reduce the damaging effects of hazards.**

Objective 1.1: Reduce repetitive property losses due to flood, and property loss due to wildfire, winter storms, and other hazards.

Objective 1.2: Protect critical facilities, infrastructure, and utility systems.

Objective 1.3: Encourage the incorporation of mitigation measures into repairs, redevelopment, and capital improvement projects for governments, businesses, education institutions, and the public.

Objective 1.4: Identify funding opportunities for future mitigation measures.

**Goal #2: Protect the most vulnerable populations, buildings, and critical facilities within Jackson County through the implementation of cost effective and technically feasible mitigation projects.**

Objective 2.1: Educate property and business owners on affordable mitigation and preparedness measures that can be taken to reduce property loss.

Objective 2.2: Assure that vulnerable buildings and critical facilities within Jackson County are cataloged and that vulnerability assessments are completed for each identified facility.

Objective 2.3: Assure that vulnerable populations such as the elderly, homeless, low income or those with limited English proficiency are included in educational programs regarding preparedness or mitigation.

Objective 2.4: Enhance the capabilities to collect, analyze, update, and exchange data and information to support risk assessment and mitigation needs.

**Goal #3: Improve the level of responder, government, business, and citizen awareness and preparedness for disaster.**

Objective 3.1: Identify and develop needed training and exercises for targeted responder, government and citizen audiences.

Objective 3.2: Strengthen outreach and partnerships with the private sector, nonprofit organizations and the public.

Objective 3.3: Improve public understanding of hazards and risk by providing public awareness, preparedness, and mitigation information through various channels of communication.

**Goal #4: Develop programs to assure that response agencies, governments, educational institutions, and local businesses are able to operate during times of disaster.**

Objective 4.1: Promote the development of emergency response plans, including continuity of operations plans, among local response agencies, governments, educational institutions and local businesses.

Objective 4.2: Provide education, training, and exercise opportunities for local entities to prepare for and test their ability to operate during times of disaster.

## **4.2 Identification and Analysis of Mitigation Actions**

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

The Jackson County Emergency Management Agency provided information to the HMPT about the types of projects typically seen in mitigation plans. At each of the HMPT meetings, participants were asked to review lists of mitigation actions categorized by disaster and to identify those that would be pertinent to the County as well as their specific jurisdictions. The HMPT was asked to discuss appropriate, achievable actions and to develop jurisdictional consensus on need.

ECIA collected these developed actions and put them into draft form. The identified actions along with a listing of previously identified ideas for mitigation, key issues from the Risk Assessment, and a worksheet of the plan's goals and objectives were provided to the team for review. Those jurisdictions, which had not previously identified actions brainstormed with other HMPT members to ensure that: (1) each jurisdiction participating in the multi-jurisdictional plan had at least one action, and (2) there were actions for each goal. All new mitigation actions offered by the HMPT were incorporated into the plan as outlined in Table 4.3.

The HMPT was provided with the following list of categories of mitigation actions, which originated from the National Flood Insurance Program's Community Rating System, as well as definitions and examples of each category:

- **Prevention:** Administrative or regulatory actions or processes that influence the way land and buildings are developed and built
- **Property protection:** Actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area
- **Structural:** Actions that involve the construction of structures to reduce the impact of hazard
- **Natural resource protection:** Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems
- **Emergency services:** Actions that protect people and property during and immediately after a disaster or hazard event
- **Public education and awareness:** Actions to inform and educate citizens, elected officials, and property owners about the hazards and potential ways to mitigate them

## 4.3 Implementation of Mitigation Actions

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**44 CFR Requirement §201.6(c )(3)(ii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraphs (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.**

Once actions were identified, HMPT members were then asked to use a modified STAPLEE criteria worksheet to evaluate each project. The mitigation actions that were identified as being applicable to all jurisdictions were prioritized by the Planning Team. Mitigation Actions specific to a jurisdiction were prioritized by that jurisdiction, with the STAPLEE scores as a reference tool. A copy of the modified scoring process is included in [Appendix C](#). This process of identification and analysis of mitigation options allow the HMPT to come to consensus and to prioritize recommended mitigation actions.

Emphasis was placed on the importance of a benefit-cost analysis in determining project priority; however, this was not a quantitative analysis. 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 HMPT decided to pursue implementation according to when and where damage occurs, available funding, political will, jurisdictional priority, and priorities identified in the Iowa Hazard Mitigation Plan. Cost-effectiveness will be considered in additional detail when seeking FEMA mitigation grant funding for eligible projects identified in this plan.

Table 4.3 summarizes all of the prioritized mitigation actions and indicates which jurisdictions plan to implement them; it also provides information on the hazards and plan goals addressed. The Mitigation Actions that apply to all jurisdictions were ranked by the Planning Team as a whole, while actions that apply to specific jurisdictions were ranked by those members of the HMPT representing those jurisdictions.

### Key to Hazard Referenced:

1. Dam & Levee Failure
2. Extreme Heat
3. Flash &/or River Flood
4. Landslide
5. Severe Winter Storm
6. Sinkholes
7. Thunderstorm & Lightning
8. Tornado
9. Windstorm
10. All

**Table 4.3 Mitigation Actions, Ranking and Completion Date by Jurisdiction**

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost                         | Ranking | Completion Date | Jurisdictions Participating in the Action |
|---|------------------------------------|--|---------|-----------------|---|
| Maintain or consider NFIP membership as required.   | 1/3                                | \$0                                    | 8       | Ongoing         | ALL                                       |
| Maintain, enhance or install GIS System to better track critical facilities and vulnerable populations as well as respond to emergencies.   | 2/8                                | \$10,000/yr to contractor              | 3       | Short Term      | ALL                                       |
| Create call down list of all critical personnel   | 3/8                                | \$0                                    | 1       | Short Term      | ALL                                       |
| Maintain procedure to backup all critical data to prevent loss in the event of hazard   | 3/8                                | \$50,000 county level                  | 8       | Short Term      | ALL                                       |
| Update snow and ice equipment as needed to better respond to snow and ice events  | 1/ 4                               | \$500,000/yr for County Road Dept.     | 6       | Ongoing         | ALL                                       |
| Continue to maintain and enforce snow removal policies.   | 1/ 4                               | \$0                                    | 7       | Ongoing         | ALL                                       |
| Update fire and rescue equipment as needed to better respond to emergencies.  | 2/8                                | \$400,000/yr. 11 fire dept 2 trucks/yr | 4       | Ongoing         | ALL                                       |
| Provide backup power generators and wiring for critical facilities.   | 2/8                                | \$10K avg generator/wiring             | 2       | Ongoing         | ALL                                       |
| Consider building a tornado safe room for all new construction and rehabilitation projects.   | 2/5                                | \$75,000/ bldg                         | 11      | Ongoing         | ALL                                       |
| Purchase or elevate structures, add lift stations, increase/reinforce culvert size, and add curb and gutter to streets in areas in flood zones with severe and repetitive flood damage to prevent reoccurrence. | 2/3                                | Est. \$500,000                         | 13      | Ongoing         | ALL                                       |
| Continue to maintain existing outdoor warning   | 2/4,5                              | \$20,000/                              | 9       | Ongoing         | ALL                                       |

| Mitigation Action  | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action |
|--|------------------------------------|----------------|---------|-----------------|---|
| siren systems and ensure appropriate coverage for population or ensure NOAA weather radios are available in uncovered areas.                                   |                                    | System         |         |                 |   |
| Purchase barricades and signage as deemed necessary to better communicate information.   | 2/5                                | \$1000/yr      | 9       | Short Term      | ALL                                       |
| Train personnel as weather spotters.   | 4/8                                | \$0            | 5       | Ongoing         | ALL                                       |
| Continue to improve public awareness of hazardous weather through newsletters, public notices, strolling signs, etc.   | 3/8                                | \$0            | 10      | Ongoing         | ALL                                       |
| Restrict or prohibit development in areas that are prone to landslides.  | 1/ 4                               | \$0            | 14      | Ongoing         | ALL                                       |
| Restrict or prohibit development in areas that are prone to sinkholes.   | 1/6                                | \$0            | 15      | Ongoing         | ALL                                       |
| Work with utility companies in county to invest in utility infrastructure, including burial of electric lines and the addition of poles in areas prone to ice. | 2/5,8,9                            | Unknown        | 12      | Ongoing         | ALL                                       |
| Make fire station temporarily available to individuals suffering from the effects of severe winter weather.  | 1/ 4                               | None           | 1       | Ongoing         | Andrew/<br>Fire Department                |
| Purchase bunker gear and air packs for 15 fire/rescue personnel.   | 2/8                                | \$72,000       | 3       | Short Term      | Andrew/<br>Fire Department                |
| Continue to refer persons suffering from the effects of extreme temperatures to Jackson County Medical Center, Maquoketa.                                      | 3/3,8                              | None           | 2       | Ongoing         | Andrew/<br>City Clerk                     |
| Update and maintain flood plain ordinances as necessary.   | 1/ 2                               | Unknown        | 2       | Ongoing         | Baldwin/<br>City Council                  |
| Continue to maintain and make improvements to the sanitary sewer system to reduce infiltration,  | 2/2                                | Unknown        | 1       | Ongoing         | Baldwin/<br>Public Works                  |

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action          |
|---|------------------------------------|----------------|---------|-----------------|--|
| including such projects as the installation of bolt-down covers on manholes in the floodplain areas and inspections of lift stations seals, etc. in the flood plain.  |                                    |                |         |                 |  |
| Continue to maintain a list of people on oxygen in the event of a power outage.   | 4/8                                | \$0            | 1       | Ongoing         | Bellevue/<br>City Clerk                            |
| Create access from one side of the city to the other when railroads are blocking all access.  | 2/8                                | \$4-8 million  | 7       | Long Term       | Bellevue/<br>Bellevue Municipal<br>Utilities (BMU) |
| Continue to improve public knowledge of the City's warning system and enhance the City's current TV warning system.   | 3/8                                | Unknown        | 2       | Ongoing         | Bellevue/<br>City Clerk                            |
| Continue to maintain list of shelter spaces for emergency evacuations.  | 4/3,6                              | Unknown        | 6       | Ongoing         | Bellevue/<br>City Clerk                            |
| Continue to make City facilities available to people for protections during tornado watch/warning.  | 4/6                                | None           | 3       | Ongoing         | Bellevue/<br>City Clerk                            |
| Explore possibility of working with manufactured home park owner south of town to build a community torando safe room.  | 2/6                                | Unknown        | 5       | Long Term       | Bellevue/<br>City Administrator                    |
| Continue to monitor effectiveness of FEMA-recommended water sump pumps for homes that have repeated backup in basements. And continue to offer \$500 rebates from municipal utilities for back flow preventers. | 4/3                                | Unknown        | 4       | Ongoing         | Bellevue/<br>City Administrator                    |
| Build second water well in case of failure of first one.  | 2/2                                | Unknown        | 2       | Long Term       | LaMotte/<br>City Council                           |
| Stand pipes for water tower in case of tornadoes or high winds.   | 2/6, 7                             | Unknown        | 7       | Short Term      | LaMotte/<br>City Council                           |

| Mitigation Action  | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action |
|--|------------------------------------|----------------|---------|-----------------|---|
| Continue to enforce floodplain ordinance to regulate construction in floodplain areas.   | 1/3                                | None           | 5       | Ongoing         | LaMotte/<br>City Council                  |
| Continue to train First Responders and EMT's on a monthly basis.   | 3/8                                | \$500/yr       | 3       | Ongoing         | LaMotte/<br>Fire Department               |
| Continue to train fire personnel for Firefighter I certification and awareness.  | 3/8                                | None           | 4       | Ongoing         | LaMotte/<br>Fire Department               |
| Continue to participate in conducting fire drills during Fire Prevention Week at the daycare.  | 3/9                                | None           | 6       | Ongoing         | LaMotte/<br>Fire Department               |
| Acquire backup generator and hookup for Waste Water lift stations.   | 2/2                                | \$10-\$15K     | 1       | Short Term      | LaMotte/<br>Public Works                  |
| Place valve for reservoir to help 'close' it off so flood water cannot get into it through the overflow. (Need would be reduced if levee were raised.)                                     | 2/1                                | \$50,000       | 12      | Long Term       | Maquoketa/<br>Public Works                |
| Explore options to move utilities located on the dike area.  | 2/1                                | Unknown        | 14      | Long Term       | Maquoketa/<br>Public Works                |
| Create a 'borrow' pit for clay or other materials to build a berm. (Wouldn't need if levee was raised.)  | 2/1                                | \$15,000       | 11      | Long Term       | Maquoketa/<br>Public Works                |
| Acquire two 10-inch trash pumps to help in flood fights.   | 2/3                                | \$170,000      | 5       | Short Term      | Maquoketa/<br>Public Works                |
| Purchase a Code Red messaging system to help alert residents with any type of emergency information (evacuations, prediction of severe weather, water main breaks, loss of utilities etc.) | 2/8                                | \$9,000        | 1       | Short Term      | Maquoketa/<br>Public Works                |
| Complete an official survey of area to determine where lowest areas are to know where to   | 2/3                                | \$10,000       | 6       | Short Term      | Maquoketa/<br>Engineer                    |

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking   | Completion Date | Jurisdictions Participating in the Action            |
|---|------------------------------------|----------------|-----------|-----------------|--|
| sandbag first in the event of rising waters and based on this information, install river level flood gauge in the Maquoketa River north of the City to provide advance warning of flooding. |                                    |                |           |                 |  |
| Install floodgate for 60" storm water main.   | 2/3                                | \$150,000      | 10        | Long Term       | Maquoketa/<br>Public Works                           |
| Purchase signage for staging and detours  | 2/3                                | \$5,000        | 8         | Short Term      | Maquoketa/<br>Public Works                           |
| Create and maintain Maquoketa Flood Action Plan, including Incident Command Plan and Traffic Plan.  | 4/3                                | NA             | Completed | 11/21/11        | Maquoketa/<br>Public Works                           |
| Relocate public works plant to higher ground.   | 2/1, 3                             | \$1,000,000    | 15        | Long Term       | Maquoketa/<br>Public Works                           |
| Add three additional warning sirens and more depending on growth of City.   | 2/3                                | \$60,000       | 2         | Ongoing         | Maquoketa/<br>Public Works                           |
| Consider permanently raising levee.   | 2/1                                | \$15,000       | 9         | Long Term       | Maquoketa/<br>Public Works                           |
| Continue maintenance and observation/inspection of levee  | 1/1                                | NA             | 3         | Ongoing         | Maquoketa/<br>Public Works                           |
| Explore public levee accreditation.   | 4/1                                | \$550,000      | 16        | Ongoing         | Maquoketa/<br>City Manager                           |
| Set up Public Information Officer and a hotline number that the public could call and not tie up police and fire department phone lines. (Identified in individual disaster plans.)         | 3/8                                | NA             | Completed | 11/21/11        | Maquoketa/<br>Police Department<br>& Fire Department |
| Adopt plan for Maquoketa Municipal Electric Utility (MMEU) to recover from power loss or down power lines.  | 1/ 4,5,6,7                         | NA             | 13        | Long Term       | Maquoketa/<br>MMEU                                   |
| Continue tree removal on levee.   | 1/7                                | NA             | 7         | Ongoing         | Maquoketa/   |

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action   |
|---|------------------------------------|----------------|---------|-----------------|---|
| Review, develop and revise evacuation plans with local fire and police departments.           | 2/8                                | NA             | 4       | Ongoing         | Maquoketa/<br>City Manager/<br>Police/ Fire |
| Consider designating fire station as emergency shelter until City Hall has generator.         | 1/8                                | \$0            | 1       | Ongoing         | Miles/<br>City Council/Fire<br>Department   |
| Maintain and update a list of shelters available in the city for emergency evacuations.       | 4/8                                | \$0            | 1       | Short Term      | Preston/<br>City Clerk                      |
| Maintain a list of people on oxygen which require electricity in the event of a power outage. | 4/8                                | \$0            | 2       | Ongoing         | Preston/<br>City Clerk                      |
| Complete levee certification.   | 3/1                                | \$740,700      | 1       |                 | Sabula/<br>City Utilities                   |
| Elevate low areas of levee 3' above 100 year flood zone.                                      | 2/1                                |                | 2       |                 | Sabula/<br>City Utilities                   |
| Purchase additional signage to re-direct traffic during floods.                               | 2/3                                | \$10,000       | 13      | Short Term      | Sabula/<br>City Utilities                   |
| Replace storm drains that can shut gate with pump.  | 2/1,3                              | \$40,000+      | 5       | Long Term       | Sabula/<br>City Utilities                   |
| Install generators at Sewer Lift Station and Sewer Plant                                      | 2/1,3                              | \$32,586 each  | 4       | Long Term       | Sabula/<br>City Utilities                   |
| Construct a new flood pump station through application to IDED for CDBG grant.                | 2/3                                | \$400,000      | 3       | Long Term       | Sabula/<br>City Council                     |
| Purchase a trailer mounted alternate pump for City's storm pump.                              | 2/3                                | \$8,000        | 10      | Long Term       | Sabula/<br>City Council                     |
| Purchase erosion protection matting and material for south levee.                             | 2/1                                | Unknown        | 7       | Long Term       | Sabula/<br>City Council                     |
| Install storm drain around 900 block of Cottage Street.                                       | 2/3                                | \$14,000       | 6       | Long Term       | Sabula/<br>City Council                     |
| Continue to train weather spotters through local  | 3/8                                | \$200          | 11      | Ongoing         | Sabula/<br>City Council                     |

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action |
|---|------------------------------------|----------------|---------|-----------------|---|
| fire department.  |                                    |                |         |                 | City Council                              |
| Evaluate and monitor potential risks with utility placements.   | 2/2                                | \$1,200        | 12      | Ongoing         | Sabula/<br>City Council                   |
| Continue to improve coordination with power companies in response to downed power lines.  | 3/ 4,5,6,7                         | \$0            | 8       | Ongoing         | Sabula/<br>City Utilities                 |
| Continue to trim dead or weak branches from trees throughout the city.  | 2/ 4,5,6,7                         | \$1,200        | 9       | Ongoing         | Sabula/<br>City Utilities                 |
| Maintain a storm debris cleanup plan.   | 3/ 4,5,6,7                         | \$3,000        | 1       | Ongoing         | Spragueville/<br>Public Works             |
| Continue to train weather spotters for spotting tornadoes.  | 3/6                                | \$0            | 1       | Ongoing         | Springbrook/<br>Fire Department           |
| Continue to coordinate recovery of downed power lines with Alliant Energy, local fire department personnel and law enforcement. | 3/ 4,5,6,7                         | \$0            | 2       | Ongoing         | Springbrook/<br>Public Works              |
| Continue to train fire department personnel for Firefighter I Cert and Awareness Level Training.                                | 3/8                                | \$0            | 3       | Ongoing         | Springbrook/<br>Fire Department           |
| In the event of extreme temperatures, continue to accommodate citizens at the Springbrook fire station.                         | 2/3, 4                             | \$0            | 4       | Ongoing         | Springbrook/<br>Fire Department           |
| Install storm sewers for entire town, with West First Street as a priority.   | 2/3                                | \$750,000      | 3       | Long Term       | St. Donatus/<br>City Council              |
| Designate community shelters in the event of homes being flooded.   | 4/3                                | Unknown        | 2       | Short Term      | St. Donatus/<br>City Council              |
| Discourage development in flood plain areas.  | 1/3                                | \$0            | 1       | Ongoing         | St. Donatus/<br>City Council              |
| Create a database of individuals with special needs to assist in a hazard event.  | 2/8                                | Unknown        | 1       | Short Term      | Unincorporated<br>Jackson County/         |
| Obtain the replacement value of all Jackson   | 2/10                               | \$0            | 2       | Short Term      | All School Districts                      |

| Mitigation Action   | Goal Referenced /Hazard Referenced | Estimated Cost | Ranking | Completion Date | Jurisdictions Participating in the Action |
|---|------------------------------------|----------------|---------|-----------------|---|
| County School District buildings.   |                                    |                |         |                 |   |
| Consider building a tornado safe room in conjunction with any new construction. | 1/3                                | \$0            | 1       | Short Term      | Andrew School Board                       |
| Consider building a tornado safe room in conjunction with any new construction. | 1/3                                | \$0            | 1       | Short Term      | Bellevue School Board                     |
| Consider building a tornado safe room in conjunction with any new construction. | 1/3                                | \$0            | 1       | Short Term      | East Central (Miles) School Board         |
| Consider building a tornado safe room in conjunction with any new construction. | 1/3                                | \$0            | 1       | Short Term      | Maquoketa School Board                    |
| Consider building a tornado safe room in conjunction with any new construction. | 1/3                                | \$0            | 1       | Short Term      | Preston School Board                      |

## CHAPTER 5 PLAN MAINTENANCE

This chapter provides an overview of the overall strategy for plan maintenance and outlines the method and schedule for monitoring, updating, and evaluating the plan. The chapter also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

### 5.1 Monitoring, Evaluating, and Updating the Plan

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**44 CFR Requirement 201.6(c )(4): The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.**

With adoption of this plan, the HMPT will be tasked with plan monitoring, evaluation, and maintenance of the plan. During the development of this county-wide multi-jurisdictional plan, those communities with existing or previously approved single-jurisdiction plans (Andrew, Bellevue, LaMotte, Maquoketa, Preston, Sabula, Spragueville, Springbrook, St. Donatus, and Zwingle) were already able to incorporate the mitigation actions into the county-wide plan that were appropriate and are fully noted in Appendix I. If the mitigation action was completed or was no longer deemed relevant, this too was noted in Appendix I and the mitigation action was not carried over to this plan. These jurisdictions, as identified above, all had members on the planning team for the county-wide plan and were an integral part of the planning, draft review and decisions on how to continue maintenance, and public involvement on this county-wide plan. Regardless of previous single-jurisdiction plan status, all communities were asked to verify and update all information of the plan. Mitigation priorities had not changed for the jurisdictions doing plan updates.

With adoption of this plan, the HMPT will be tasked with plan monitoring, evaluation, and maintenance of the plan. The participating jurisdictions and agencies, led by Jackson County Emergency Management, agree to:

- Monitor and evaluate best practices into Jackson County Emergency Management and Community Fire Chiefs meeting which meets six times per year;
- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high priority, low- or no-cost recommended actions;
- Monitor and assist in implementation and update of this plan;
- Report on plan progress and recommend changes to the governing bodies of participating jurisdictions; and
- Inform and solicit input from the public.

The County Emergency Management Director shall coordinate the monitoring of this plan under the direction of the HMPT. The HMPT along with representatives from the Jackson County Sheriff's, local police, Zoning, Engineering, Conservation, Auditory and

Health offices will monitor and review the HMP Update on an annual basis. The annual review will focus on the goals, objectives and timelines of the Plan. These representatives will complete a progress report on an annual basis. The goals and timelines will be discussed at County Board of Supervisors and City Council meetings for the inclusion of projects into the following fiscal year budget. At the meetings, possible revisions of the HM Plan will also be a topic of discussion. In the event of a disaster, the HMPT will review the Plan as soon as possible following the disaster event to determine compliance, and the status of monitoring, evaluation, and updating of the plan. The review will be for the purpose of updating the goals, actions, procedures, etc. Board of Supervisors meetings and City Council meetings are held under the Iowa Open Meetings Law, and the Board Chairperson and Mayors will specifically invite the public for comments.

The Jackson County Emergency Management Coordinator shall coordinate the evaluation of this plan under the direction of local leaders. This evaluation shall consist of application of the following criteria to measure the effectiveness of the plan: (1) Do goals and objectives address current and expected conditions; (2) Have the nature, magnitude, and/or type of risks changed; (3) Are there implementation problems; (4) Are current resources appropriate to implement the plan; (5) Were the outcomes as expected; and (6) Did the plan partners participate as originally planned. The results of this activity will be discussed thoroughly with participating jurisdictions.

The County Emergency Management Director, County Board of Supervisors, City Councils, School Districts, the regional Council of Government, along with representatives from the Departments of Sheriff, Zoning, Health, Conservation, Engineering and Auditors offices will participate in the updating of the county-wide HM Plan within the five-year requirement. The update of the County's HMP will be accomplished through planning meeting with these officials and will include public participation. The public will be invited through public notices, emails, letters, and other methods.

The county-wide HMP shall be updated at a minimum once every five years for potential changes and compliance with FEMA rules and regulations. The five year update of the plan will be completed to reflect community changes and compliance with FEMA or Homeland Security regulations. This will ensure the Jackson County will remain eligible for Hazard Mitigation Grant Project funding. The plan update will be submitted for approval in time to maintain a compliant status.

## **5.2 Plan Maintenance Schedule**

The HMPT agrees to meet annually during regularly scheduled Fire Chiefs meetings to report on and monitor progress as well as update the mitigation strategy when necessary.

In conjunction with the other participating jurisdictions, a written update of the plan must be approved by the IHSESD and FEMA Region VII per Requirement §201.6(c)(4)(i) of the disaster Mitigation Act of 2000 and adopted by participating jurisdictions within a five-year period from the final approval of this plan unless disaster or other circumstances (e.g. changing regulations) require a change to this schedule.

### **5.3 Plan Maintenance Process**

Evaluation of progress can be achieved by monitoring changes in vulnerabilities identified in the plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerabilities as a result of implementing the actions described in this plan,
- Increased vulnerabilities as a result of failed or ineffective mitigation actions, and/or
- Increased vulnerabilities as a result of new development or annexation.

Updates to this plan will:

- Consider changes in vulnerability due to action implementation,
- Document success stories where mitigation efforts have proven effective,
- Document areas where mitigation actions were not effective,
- Document any new hazards that may arise or were previously overlooked,
- Incorporate new data or studies on hazards and risks
- Incorporate new capabilities or changes in capabilities, and
- Incorporate growth and development-related changes to inventories.

Changes will be made to the plan to accommodate actions that have failed or are not considered feasible after a review of their adherence to established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed during the monitoring and update of this plan to determine feasibility of future implementation. Updating of the plan will be enacted through written changes and submissions as deemed appropriate and necessary by the Hazard Mitigation Planning Team. Any changes to the plan will be approved by the governing boards of all participating jurisdictions.

### **5.4 Implementation through Existing Programs**

The goals, actions, and timelines will be discussed with directions given by the Board of Supervisors, City Councils, Mayors and Superintendents for inclusion of these mitigation measures into their Budgets for implementation. The jurisdictions will continue to include mitigation projects in the Capital Improvements Plan and the Comprehensive Land Use Plan for implementation on a planned basis whenever feasible. Land use decisions will incorporate the findings of the HM Plan.

### **5.5 Responsible Parties**

The various jurisdictions, along with the recommendations of the Hazard Mitigation Planning Team, are ultimately responsible for decisions related to all mitigation projects and their implementation. The jurisdictions will continue to include mitigation projects in the Capital Improvements Plan and/or Budgets, Open Space Conservation Plans,

Watershed Plans, and Zoning Ordinances for implementation on a planned basis whenever feasible.

## **5.6 Continuing Public Involvement**

In order to ensure that the public remains involved in the implementation of this plan, the plan shall be made available at Jackson County offices for citizens who requests to see it. The jurisdictions will continue to invite and involve Jackson County citizens to participate in the planning and budgetary processes. All meetings will be advertised in accordance with the Iowa Open Meetings Laws. Input from academia, volunteer agencies, and neighboring jurisdictions will also be sought. Their input is regularly solicited and will continue to be requested for the HM process.

Appendix A:

Planning Process Documentation

**Jackson County  
PRIMARY HAZARD MITIGATION PLANNING TEAM**

| <b>Participant</b>  | <b>Representing</b>  |
|---------------------|--|
| Roeder, Mike        | Andrew Mayor/Andrew Community School District Rep  |
| Rohwedder, Bill     | Baldwin Mayor  |
| Schwager, Lynn      | Bellevue Chief of Police   |
| Gray, Neil          | East-Central School District   |
| Medinger, Lyn       | Jackson County Emergency Management Agency/Bellevue Community School District Representative/Cities of St. Donatus and Spragueville Representative |
| Kober, Ben          | Jackson County Zoning Department   |
| Konrardy, Paul      | LaMotte Mayor  |
| Wagner, Brian       | Maquoketa City Manager   |
| Hute, Jason         | Maquoketa Mayor  |
| Wing, Mike          | Maquoketa School District  |
| Melvin, Kristie     | Miles City Council   |
| Portz, Mike         | Miles City Council   |
| Balichek, Stephanie | Monmouth Fire Department   |
| Tebbe, Brenda       | Preston City Clerk/Preston School District Rep   |
| Rittmer, Darrell    | Sabula Mayor   |
| Reed, Marie         | Springbrook Fire Department  |
| Karla Mahoney       | Zwingle City Clerk   |



Andrew Community School District  
P.O. Box 230, 13 South Marion Street  
Andrew, IA 52030  
Phone - (563) 672-3221  
Fax - (563) 672-9750  
[www.andrew.k12.ia.us](http://www.andrew.k12.ia.us)

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Andy Crozier - Superintendent/Principal

[andy.crozier@andrew.k12.ia.us](mailto:andy.crozier@andrew.k12.ia.us)

Thursday, November 1, 2012

Ms. Jennifer Walker  
East Central Intergovernmental Association  
7600 Commerce Park  
Dubuque, IA 52002

Dear Ms. Walker:

Per our conversations of last year, I was unable to attend the Jackson County Multi-Jurisdictional Multi-Hazard Mitigation Planning meetings and designated Andrew Mayor, Mike Roeder, as the school district's representative for all meetings. Mayor Roeder and I have a close working relationship due to our positions as well as to the fact that we live near one another in a small town.

Your information, along with that provided by Mike allowed me to understand and provide necessary input for the progression of the hazard mitigation plan for our county. Once the plan was done, I was able to review the document and make any recommendations necessary. The school board passed the resolution adopting the Jackson County Plan with no problems.

Please let me know if you or FEMA require further documentation.

Sincerely,

Andrew Crozier  
Superintendent

Attest: Mike Roeder  
City of Andrew Mayor



# Bellevue Community School District

1601 State Street  
Bellevue, IA 52031-9766



## **Directors**

Paul Fahey  
Martha Henning  
Kevin Lundin  
Janet Sieverding

## **Mike Healy, Superintendent**

PH (563) 872-4913  
FAX (563) 872-3216

## **Officers**

Gary Griebel,  
*President*  
Penny Medinger,  
*Secretary-Treasurer*

November 6, 2012

The Bellevue Community School district supports the Jackson County Hazard Mitigation plan. Our representative, Lyn Medinger, Jackson County Emergency Coordinator and resident of the Bellevue district, attended all the formative meetings and briefed school officials on the plan. The school district submitted requested data to draft the plan and approved the final draft.

Dr. Michael Healy, Superintendent  
Bellevue Community Schools  
[Michael.healy@bellevue.k12.ia.us](mailto:Michael.healy@bellevue.k12.ia.us)  
563.872.4913

NOV 08 2012



# PRESTON COMMUNITY SCHOOLS

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**Robert Lagerblade**  
Superintendent  
*rlagerblade@preston.k12.ia.us*

**David J. Miller**  
K-12 Principal  
*dmiller@preston.k12.ia.us*

November 5, 2012

Ms. Jennifer Walker  
East Central Intergovernmental Association  
7600 Commerce Park  
Dubuque, IA 52002

Dear Ms. Walker:

Sorry I was only available to attend the very first meeting of the Jackson County Multi-jurisdictional Multi-Hazard Mitigation Planning meetings. I have designated Ms. Brenda Tebbe, Preston City Clerk as the school district's designated representative.

As you are aware the Preston Board approved the mitigation plan at its regular school board meeting.

Sincerely,

Robert Lagerblade  
Superintendent

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121 S. Mitchell St. – Preston, Iowa 52069-7725

Elementary & Business Office  
563-689-3431  
Fax: 563-689-5823

Junior High/Senior High  
563-689-4221  
Fax: 563-689-4222

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
September 29, 2010

Agenda

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- Introductions
- Benefits of a MJHM Plan
- Parameters of the MJHM Plan
  - Invite neighboring jurisdictions
  - Post notices of public meetings
  - Attend planning meetings or assign proxy in writing
  - Rank hazards
  - Supply Community Assets portion
  - Each community must pass own resolution
- Jackson County Hazard Risk Assessment
  - By county - TONIGHT
    - Drought
    - Earthquake
    - Extreme heat
    - Hailstorm
    - Grass or wild land fire
    - Severe winter storm
    - Thunderstorm and lightning
    - Tornado
    - Windstorm
  - By community – NOT TONIGHT
    - Dam failure
    - Flash flood
    - Landslide
    - Levee failure
    - River flood
    - Sinkholes
- Timeline
- Adjourn

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**SEPTEMBER 29, 2010**

**ANDREW JACKSON CARE FACILITY/JACKSON COUNTY EMA OFFICES  
6 PM**

Jennifer Walker gave introductions and asked for each of the planning team members to introduce themselves and the departments/jurisdictions they represent. Jennifer Walker opened the planning meeting at 7 PM at the Andrew Jackson Care Facility/EMA offices.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT discussed the timeline for the plan to be prepared and written. The next county-wide kick off was scheduled for October 4, 2010.

The meeting was adjourned at 9:30 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
October 4, 2010

**Agenda**

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- Introductions
- Benefits of a MJHM Plan
- Parameters of the MJHM Plan
  - Invite neighboring jurisdictions
  - Post notices of public meetings
  - Attend planning meetings or assign proxy in writing
  - Rank hazards
  - Supply Community Assets portion
  - Each community must pass own resolution
- Jackson County Hazard Risk Assessment
  - By county - TONIGHT
    - Drought
    - Earthquake
    - Extreme heat
    - Hailstorm
    - Grass or wild land fire
    - Severe winter storm
    - Thunderstorm and lightning
    - Tornado
    - Windstorm
  - By community – NOT TONIGHT
    - Dam failure
    - Flash flood
    - Landslide
    - Levee failure
    - River flood
    - Sinkholes
- Timeline
- Adjourn

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**OCTOBER 4, 2010**

**ANDREW FIRE DEPARTMENT, 7 PM**

Jackson County EMA Coordinator, Lyn Medinger, opened the planning meeting at 7 PM at the Andrew Fire House.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT discussed the timeline for the plan to be prepared and written. The next county-wide kick off was scheduled for October 6, 2010 at the same location.

The meeting was adjourned at 9:00 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
October 6, 2010

Agenda

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- Introductions
- Benefits of a MJHM Plan
- Parameters of the MJHM Plan
  - Invite neighboring jurisdictions
  - Post notices of public meetings
  - Attend planning meetings or assign proxy in writing
  - Rank hazards
  - Supply Community Assets portion
  - Each community must pass own resolution
- Jackson County Hazard Risk Assessment
  - By county - TONIGHT
    - Drought
    - Earthquake
    - Extreme heat
    - Hailstorm
    - Grass or wild land fire
    - Severe winter storm
    - Thunderstorm and lightning
    - Tornado
    - Windstorm
  - By community – NOT TONIGHT
    - Dam failure
    - Flash flood
    - Landslide
    - Levee failure
    - River flood
    - Sinkholes
- Timeline
- Adjourn

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**OCTOBER 6, 2010**

**CITY OF MILES, 7 PM**

Jennifer Walker from ECIA opened the planning meeting at 7 PM at the Andrew Fire House.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT discussed the timeline for the plan to be prepared and written. The next county-wide kick off was scheduled for October 19, 2010 at Maquoketa City Hall.

The meeting was adjourned at 9:00 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
October 19, 2010

**Agenda**

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## MINUTES

### JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING

OCTOBER 19, 2010

MAQUOKETA CITY HALL, 4:15 PM

Jennifer Walker from ECIA gave introductions and asked for each of the planning team members to introduce themselves and the departments/jurisdictions they represent. Jennifer Walker opened the planning meeting at 4:15 PM at the Maquoketa City Hall.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the County's mitigation goals from the previous plan and assessed natural hazards specific to the unincorporated areas of Clinton County. The HMPT also set new goals and mitigation actions specific to the County.

The next planning team meeting was scheduled for October 21, 2010 at the City of Baldwin City Hall.

The meeting was adjourned at 6:30 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
October 21, 2010

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**OCTOBER 21, 2010**

**CITY OF BALDWIN, CITY HALL, 6:30 PM**

Jennifer Walker from ECIA gave introductions and asked for each of the planning team members to introduce themselves and the departments/jurisdictions they represent. Jennifer Walker opened the planning meeting at 6:30 PM at City Hall.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the County's mitigation goals from the previous plan and assessed natural hazards specific to the City of Baldwin. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was scheduled for November 1, 2010 at the City of Bellevue City Hall.

The meeting was adjourned at 8:30 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
November 1, 2010

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**NOVEMBER 1, 2010**

**CITY OF BELLEVUE, CITY HALL, 6:30 PM**

Lyn Medinger, Jackson County Emergency Management Coordinator, opened the planning meeting at 6:30 PM at City Hall.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Bellevue. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was scheduled for November 15, 2010 at the LaMotte Fire Department meeting.

The meeting was adjourned at 9 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
November 15, 2010

**Agenda**

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**NOVEMBER 15, 2010**

**ANDREW FIRE DEPARTMENT, 6:30 PM**

Lyn Medinger, Jackson County Emergency Management Coordinator, opened the planning meeting at 6:30 PM at the Andrew Volunteer Fire Department meeting.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City. The HMPT also set new goals and mitigation actions specific to the City of Andrew.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was not scheduled at this time.

The meeting was adjourned at 8:30 PM.

**JACKSON COUNTY  
MULTI-JURISDICTIONAL HAZARD MITIGATION  
PLANNING MEETING**

**Agenda  
City of Maquoketa  
February 15, 2011**

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- Introductions
- Discuss Hazard Mitigation Parameters
- Identify and rank hazards specific to jurisdiction
- Complete
  - Description of the Community
  - Land Use and Development Trends
  - Technical and Fiscal Resources
  - Existing Plans and Policies
  - Other Mitigation Activities
- Review and update Critical Facilities
- Review and update Vulnerable Population Centers
- Adjourn

## **MINUTES**

### **CLINTON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**FEBRUARY 15, 2011**

**CITY OF MAQUOKETA, CITY HALL, 4:30 PM**

Jennifer Walker from ECIA gave introductions and asked for each of the planning team members to introduce themselves and the departments they represent. Jennifer Walker opened the planning meeting at 4:30 PM at City Hall.

The HMPT reviewed a draft of the City of Maquoketa's portion of the Hazard Mitigation Plan and continued to work on describing hazards specific to the City of Maquoketa and on setting appropriate mitigation actions for those hazards.

Next, the HMPT reviewed the updated list of Critical Facilities and Vulnerable Populations Centers, estimated their replacement costs and updating appropriate maps.

The next planning team meeting was scheduled for June 15, 2010 at the Jackson County Courthouse.

The meeting was adjourned at 4:30 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
February 22, 2010

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
    - Licensed Day Care Centers & Preschools
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**FEBRUARY 22, 2011**

#### **JACKSON COUNTY COURTHOUSE, 3 PM**

ECIA Project Coordinator Jennifer Walker and Jackson County Emergency Management Coordinator, Lyn Medinger, opened the meeting with introductions and updates.

Next, the HMPT reviewed a draft of the County's portion of the Hazard Mitigation Plan and continued to work on describing hazards specific to the unincorporated areas of the County and on setting appropriate mitigation actions for those hazards.

Next, the HMPT reviewed the updated list of Critical Facilities and Vulnerable Populations Centers, estimated their replacement costs and updating appropriate maps.

The next planning team meeting was scheduled for March 3, 2011 at LaMotte City Hall.

The meeting was adjourned at 5 PM.

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**MARCH 3, 2011**

**LAMOTTE VOLUNTEER FIRE DEPARTMENT, 6:30 PM**

Lyn Medinger, Jackson County Emergency Management Coordinator, opened the planning meeting at 6:30 PM.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of LaMotte. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was scheduled for April 5, 2011 at Monmouth City Hall.

The meeting was adjourned at 8:30 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
March 3, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
April 5, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**APRIL 5, 2011**

**BALDWIN CITY HALL, 6 PM**

Jennifer Walker from ECIA opened the planning meeting at 6 PM.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Baldwin. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was scheduled for May 2, 2011 at Sabula City Hall.

The meeting was adjourned at 7:45 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
April 14, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## MINUTES

### JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING

APRIL 14, 2011

BALDWIN CITY HALL, 6 PM

Jennifer Walker from ECIA opened the planning meeting at 6 PM. William Rohwedde, Karen Watters, Steven Daniels, Tony Back and Ace Moore attended to represent the City of Baldwin planning team.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Baldwin. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

No future planning meetings were scheduled at this time.

The meeting was adjourned at 7:45 PM.

**Jackson County**  
**Multi-Jurisdictional Hazard Mitigation**  
**Planning Team Meeting**  
**May 2, 2011**  
**Agenda**

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- Introductions
- Rank Hazard specific to Community
  - Dam failure
  - Flash flood
  - Landslide
  - Levee failure
  - River flood
  - Sinkholes
- Review hazard mitigation goals from previous plans
- New Goals
- Critical Facilities/Vulnerable Population Centers
- Technical & Fiscal Capabilities
- Adjourn

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**MAY 2, 2011**

**SABULA CITY HALL, 4:30 PM**

Jennifer Walker and Mark Schneider from ECIA opened the planning meeting at 4:30 PM.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Sabula. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was scheduled for May 16, 2011 at Miles City Hall.

The meeting was adjourned at 7:45 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
May 16, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**MAY 16, 2011**

**SABULA CITY HALL, 6 PM**

Jennifer Walker from ECIA opened the planning meeting at 6 PM. City Council members Mike Portz and Kristie Melvin were in attendance.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Miles. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was not scheduled at this time.

The meeting was adjourned at 7 PM.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
May 26, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## **MINUTES**

### **JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING**

**MAY 26, 2011**

**PRESTON CITY HALL, 10 AM**

Jennifer Walker from ECIA met with Preston City Clerk, Brenda Tebbe from 10 AM to 12PM.

Benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of Preston. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was not scheduled at this time.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
June 6, 2011

Agenda

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- Introductions
- Components needed from County for MJHMP
  - Demographics – county as % of State
  - Major Rivers & Watersheds
  - Description of Community
  - Technical & Fiscal Capabilities
  - Land Use and Development Trends
  - Existing Plans & Policies
  - School Districts in Jackson County
  - HAZUS
    - 100 year flood plain
    - Damages by jurisdiction from flood
  - Critical Facilities
    - Addresses
    - Estimated Replacement Values
  - Vulnerable Population Centers
    - Addresses
  - Top 10 employers in the County
- Rank hazards specific to jurisdiction

## MINUTES

### JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING

JUNE 6, 2011

LA MOTTE, 6 PM

Jennifer Walker from ECIA met with the mayor, city council and members of the LaMotte public works, maintenance and volunteer fire department. The meeting was opened at 6pm with introductions.

From there, benefits and parameters of the Multi-Jurisdictional Hazard Mitigation Planning Grants were discussed. The Hazard Mitigation Planning Team (HMPT) then discussed Hazard that would be discussed and ranked by the county-wide team as well as those that would later be discussed and ranked by individual jurisdictions.

Next, the HMPT reviewed the City's mitigation goals from its previous plan and assessed natural hazards specific to the City of LaMotte. The HMPT also set new goals and mitigation actions specific to the City.

Next, the HMPT reviewed the previous list of Critical Facilities and Vulnerable Populations and made all necessary updates.

The next planning team meeting was not scheduled at this time.

Jackson County  
Multi-Jurisdictional Hazard Mitigation  
Planning Team Meeting  
November 15, 2011

Agenda

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- Introductions
- Review Draft of Jackson County Multi-Hazard Multi-Jurisdictional Hazard Mitigation Plan
- Collect changes/additions from participating jurisdictions
- Review appendices including HAZUS and critical facilities maps
- Determine when and how to post draft for 30 days
- Discuss Resolution Process & Adoption of the Plan

## MINUTES

### JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLANNING TEAM MEETING

NOVEMBER 15, 2011

JACKSON COUNTY EMA OFFICES, 4 PM

Jennifer Walker from ECIA and Lyn Medinger, Jackson County EMA, opened the planning meeting at 4 PM. Representatives from nearly all jurisdictions attended the meeting to review a draft of the Hazard Mitigation Plan to date.

Jennifer began by outlining the format of the HMP and the HMPT offered changes and additions since the last meeting.

The team reviewed all appendices; including the HAZUS flood maps and data. Several communities offered changes to their critical facilities maps. Jennifer requested additional information be forwarded to her at ECIA as soon as possible.

The HMPT also discussed funding available for generators, warning sirens and other mitigation projects. Several communities noted that they have NOIs or applications in for the funding programs and inquired about the process with the mitigation plan from here out. It was decided that there was enough data missing that the group was unable to yet establish when the draft would be posted, but that it would be made available on the Jackson County website and notices would be put in the three local newspapers.

The group did, however, discuss the process that each jurisdiction, including each of the five school districts will need to individually adopt the plan before FEMA will fully approve the countywide plan.

No further planning meetings are anticipated.

The meeting was adjourned at 6 PM.

Appendix B:

Announcements of Meetings & Draft Posting

**Jennifer Walker**

**From:** Lyn Medinger [lmedinger@co.jackson.ia.us]  
**Sent:** Thursday, September 16, 2010 10:07 AM  
**To:** 'Lyn Medinger'; 'Bellevue EMS'; 'Carol Atkinson'; 'Sabula Ambulance Service'; 'Tricia M. Steines'; 'Andrew Mayor'; 'Bellevue Mayor'; 'LaMotte Mayor'; 'Maquoketa Mayor'; 'Preston Mayor'; 'Sabula Mayor'; 'Andrew 1st Responders'; 'Baldwin/Monmouth 1st Responders'; 'Chris Roling'; 'LaMotte 1st Responder'; 'Maquoketa Rescue Squad'; 'Mark Beck'; 'Springbrook 1st Responders'; 'Andrew City Clerk'; 'Baldwin Mayor/City Clerk'; 'Bellevue City Administrator'; 'LaMotte City Clerk'; 'LaMotte City Clerk'; 'Maquoketa City Manager'; 'Miles City Clerk'; 'Monmouth City Clerk'; 'Preston City Clerk'; 'Sabula City Clerk'; 'Springbrook City Clerk'; 'St. Donatus City Clerk'; 'Zwingle City Clerk'; 'Baldwin/Monmouth 1st Rspnders (Ace Moore)'; 'Bellevue Fire & Rescue (Greg Schulte)'; 'LaMotte 1st Responders (Joe Clasen)'; 'LaMotte 1st Responders (Sue Fogel)'; 'Miles EMS (Vicki Johnson)'; 'Sabula EMS (Anita Rabuck)'; 'Sabula EMS (Brian Earles)'; 'Springbrook 1st Responders (Joe Deppe)'; 'Al Muhlhausen (Assistant Chief Maquoketa)'; 'Bill Yaddof (Chief Preston Fire & Rescue)'; 'Dan Miller (Chief Sabula Fire & Rescue)'; 'Dick Haynes (Assistant Chief Sabula Fire)'; 'Jerry Baresel'; 'Jon Atkinson Sabula Assitant Chief'; 'LaMotte Fire & Rescue Department'; 'Miles Fire Department'; 'Rob Rohwedder'; 'Springbrook Fire Department'; 'Tim Till (Assistant Chief Bellevue)'; 'Bellevue Fire Department'; 'clnbrk@netins.net'; 'Maquoketa Fire & Rescue Alternate E-Mail'; 'Preston Fire and Rescue'; 'Bellevue Police Chief'; 'Jackson County Sheriff'; 'Maquoketa Police Chief'; 'Preston Police Chief'; 'Sabula Police Department'; 'Andrew Community School District'; 'Bellevue Community Schools'; 'Bellevue Marquette'; 'East Central Community Schools'; 'Maquoketa Community Schools'; 'Preston Community Schools'  
**Cc:** Jennifer Walker  
**Subject:** RE: Jackson County Multi-Jurisdictional Hazard Mitigation Plan

# Jen from ECIA has confirmed the time: 7pm

Below is an outline that ECIA would like to follow!!

Alright, you get the people to come & I'll be there, too!

Here's what we'll cover 1<sup>st</sup> meetings:

- Parameters of a multi-j plan
- Rank hazards that apply jurisdiction-wide
- Review critical facilities and vulnerable populations/city

Here's what we'll cover in subsequent meetings:

- Rank hazards that are jurisdiction specific
- Goals

**Local Officials!! This Plan must be in place to receive FEDERAL FUNDING in the event of a PRESDIDENTAIL DECLARATION!!**

**This is an In-Kind Match for all Jurisdictions involved! More people attend less dollars out of Tax Payers Pocket!**

As you may know, Jackson County was awarded a planning grant to assist the County in preparing their Multi-

Jurisdictional Hazard Mitigation Plan (MJHMP). East Central Intergovernmental Association (ECIA) was contracted to help Jackson County with this process.

One of the first steps is to form a MJHMP team to assist in the development of the plan and to invite all stakeholders to participate in the planning process.

To that end, we would like to set a date for representatives from all of Jackson Counties participating communities and neighboring counties to a public planning session. **Looking to host 2 Session, Jackson County EOC (Sept. 29<sup>th</sup>) Andrew Jackson Care Facility and the Miles Fire Station Oct.6<sup>th</sup>).**

At the meeting we will discuss the planning parameters and timeline, as well as identify and rank the natural hazards that affect the community as a whole. For those communities that just submitted their Hazard Mitigation Plan we asked that you attend at least one meeting. For those of you did not attend the earlier session, we would welcome and appreciate your participation and input to the planning process on Oct. 6th. I would appreciate it if you could let me know if you are able to send a representative. If you can't, no worries, we will notify you in the future of additional planning meetings.

I look forward to hearing from.

Please forward to any possible agencies that may want to participate that I may not have contacts for.

Thanks

*Lyn Medinger, Coordinator  
Jackson County Emergency Management  
18720 250th Ave  
Bellevue, Iowa 52031  
563.672.3333 (Office)  
563.542.3911 (Cell)  
563-672-3333 (Fax)*

CAUTION: This message may contain competitive or other non-public information protected by federal law from disclosure and not intended for disclosure outside official government channels. Do not disseminate this message without the approval of originating office. If you receive this message in error, please notify the sender by reply e-mail and delete all copies of the message.

**Jennifer Walker**

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**From:** Jennifer Walker  
**Sent:** Friday, September 24, 2010 11:38 AM  
**To:** Jennifer Walker; frank.shekeleton@andrew.k12.ia.us; jhandke@bellevue.k12.ia.us; ngray@east-central.k12.ia.us; khuckstadt@mail.ms.maquoketa.k12.ia.us; blagerblade@preston.k12.ia.us  
**Cc:** Lyn Medinger  
**Subject:** Jackson County Multi-Jurisdictional Hazard Mitigation Planning Meeting

Dear Superintendents:

Please see information and invitation below to a meeting to discuss Jackson County's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). A new requirement by FEMA of these plans is that all school districts that operate in the specified area be included in the MJHMP as their own jurisdiction and to pass their own resolution approving the Plan when it is completed. Each school district would be provided a small section in the MJHMP noting that it does not have any natural hazards specific to the district or site, or that there is. For example, if one of the districts has a problem with flash flood or river flood, we would need to note that in the section specific to your district.

The reason FEMA is now requiring this is so that the school districts can apply for grant funding (e.g. tornado safe rooms or generator funding) as their own entity. In the past, the school district has been able to go through the community that the school resides in to apply for funding. That will no longer work, I am told. While participation in the MJHMP is optional, the district would not be eligible for federal grant funding without participation.

To that end, please send a representative to ONE of the following Jackson County MJHMP meetings:

**Wednesday, September 29**  
**7pm**  
**Andrew Jackson Care Facility**

**Wednesday, October 6**  
**7pm**  
**Miles Fire Station**

If you have any questions, please contact me at 563.690.6775 or this email address.

Regards,  
Jennifer Walker  
ECIA Project Manager

Jennifer Walker, Project Manager  
ECIA  
7600 Commerce Park  
Dubuque, Iowa 52002  
t563.556.4166 x254  
f563.556.0348

## Jennifer Walker

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**From:** Jennifer Walker  
**Sent:** Friday, September 24, 2010 11:46 AM  
**To:** Tibbetts, Lynn; maryannspecht@dbqco.org  
**Cc:** Jennifer Walker  
**Subject:** FW: Jackson County Multi-Jurisdictional Hazard Mitigation Plan

This is to invite representatives from Dubuque, Jones and Clinton Counties to participate in Jackson County's Multi-Jurisdictional Hazard Mitigation Planning meetings on Wednesday, September 29 or Wednesday, October 6. Please see below for specific meeting information, or contact me for further information.

Thank you,  
 Jennifer Walker  
 ECIA project manager  
 563.690.6995

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**From:** Lyn Medinger [mailto:lmedinger@co.jackson.ia.us]  
**Sent:** Thursday, September 16, 2010 10:07 AM  
**To:** 'Lyn Medinger'; 'Bellevue EMS'; 'Carol Atkinson'; 'Sabula Ambulance Service'; 'Tricia M. Steines'; 'Andrew Mayor'; 'Bellevue Mayor'; 'LaMotte Mayor'; 'Maquoketa Mayor'; 'Preston Mayor'; 'Sabula Mayor'; 'Andrew 1st Responders'; 'Baldwin/Monmouth 1st Responders'; 'Chris Roling'; 'LaMotte 1st Repsonder'; 'Maquoketa Rescue Squad'; 'Mark Beck'; 'SpringBrook 1st Responders'; 'Andrew City Clerk'; 'Baldwin Mayor/City Clerk'; 'Bellevue City Administrator'; 'LaMotte City Clerk'; 'LaMotte City Clerk'; 'Maquoketa City Manager'; 'Miles City Clerk'; 'Monmouth City Clerk'; 'Preston City Clerk'; 'Sabula City Clerk'; 'Springbrook City Clerk'; 'St. Donatus City Clerk'; 'Zwingle City Clerk'; 'Baldwin/Monmouth 1st Rsponders (Ace Moore)'; 'Bellevue Fire & Rescue (Greg Schulte)'; 'LaMotte 1st Responders (Joe Clasen)'; 'LaMotte 1st Responders (Sue Fogel)'; 'Miles EMS (Vicki Johnson)'; 'Sabula EMS (Anita Rabuck)'; 'Sabula EMS (Brian Earles)'; 'Springbrook 1st Responders (Joe Deppe)'; 'Al Muhlhausen (Assistant Chief Maquoketa)'; 'Bill Yaddof (Chief Preston Fire & Rescue)'; 'Dan Miller (Chief Sabula Fire & Rescue)'; 'Dick Haynes (Assistant Chief Sabula Fire)'; 'Jerry Baresel'; 'Jon Atkinson Sabula Assitant Chief'; 'LaMotte Fire & Rescue Department'; 'Miles Fire Department'; 'Rob Rohwedder'; 'Springbrook Fire Department'; 'Tim Till (Assistant Chief Bellevue)'; 'Bellevue Fire Department'; 'clnbrk@netins.net'; 'Maquoketa Fire & Rescue Alternate E-Mail'; 'Preston Fire and Rescue'; 'Bellevue Police Chief'; 'Jackson County Sheriff'; 'Maquoketa Police Chief'; 'Preston Police Chief'; 'Sabula Police Department'; 'Andrew Community School District'; 'Bellevue Community Schools'; 'Bellevue Marquette'; 'East Central Community Schools'; 'Maquoketa Community Schools'; 'Preston Community Schools'  
**Cc:** Jennifer Walker  
**Subject:** RE: Jackson County Multi-Jurisdictional Hazard Mitigation Plan

# Jen from ECIA has confirmed the time: 7pm

Below is an outline that ECIA would like to follow!!

Alright, you get the people to come & I'll be there, too!

Here's what we'll cover 1<sup>st</sup> meetings:

- Parameters of a multi-j plan
- Rank hazards that apply jurisdiction-wide

9/24/2010

- Review critical facilities and vulnerable populations/city

Here's what we'll cover in subsequent meetings:

- Rank hazards that are jurisdiction specific
- Goals

**Local Officials!! This Plan must be in place to receive FEDERAL FUNDING in the event of a PRESDIDENTAIL DECLARATION!!**

**This is an In-Kind Match for all Jurisdictions involved! More people attend less dollars out of Tax Payers Pocket!**

As you may know, Jackson County was awarded a planning grant to assist the County in preparing their Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). East Central Intergovernmental Association (ECIA) was contracted to help Jackson County with this process.

One of the first steps is to form a MJHMP team to assist in the development of the plan and to invite all stake holders to participate in the planning process.

To that end, we would like to set a date for representatives from all of Jackson Counties participating communities and neighboring counties to a public planning session. **Looking to host 2 Session, Jackson County EOC (Sept. 29<sup>th</sup>) Andrew Jackson Care Facility and the Miles Fire Station Oct.6<sup>th</sup>).**

At the meeting we will discuss the planning parameters and timeline, as well as identify and rank the natural hazards that affect the community as a whole. For those communities that just submitted their Hazard Mitigation Plan we asked that you attend at least one meeting. For those of you did not attend the earlier session, we would welcome and appreciate your participation and input to the planning process on Oct. 6th. I would appreciate it if you could let me know if you are able to send a representative. If you can't, no worries, we will notify you in the future of additional planning meetings.

I look forward to hearing from.

Please forward to any possible agencies that may want to participate that I may not have contacts for.

Thanks

*Lyn Medinger, Coordinator  
Jackson County Emergency Management  
18720 250th Ave  
Bellevue, Iowa 52031  
563.672.3333 (Office)  
563.542.3911 (Cell)  
563-672-3333 (Fax)*

CAUTION: This message may contain competitive or other non-public information protected by federal law from disclosure and not intended for disclosure outside official government channels. Do not disseminate this message without the approval of originating office. If you receive this

9/24/2010

TO: Jackson County Officials  
FROM: Lyn Medinger  
DATE: November 1, 2011  
SUBJECT: Jackson County Multi-Jurisdictional Hazard Mitigation Planning Team

As you may know, Jackson County was awarded a planning grant to assist the County in preparing their Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). East Central Intergovernmental Association (ECIA) has been contracted to help Jackson County with this process.

Jackson County has had several meetings with all disciplines to assist in the development of the plan and to have representation from all participating jurisdictions, County officials, school districts in Jackson County, fire chiefs, neighboring counties and any other interested parties, to participate in the hazard mitigation planning process.

FEMA is now requiring school districts to participate as their own jurisdiction in the MJHMP, which will allow the districts to apply for federal grants. While participation is optional, eligibility in grant programs is only possible if the district is included as a jurisdiction.

We have compiled all data gathered with the meetings held with all jurisdictions. We have schedule one last meeting to correct any issues that have been misinterpreted thru the planning process.

**Thursday, November 15, 2011  
Andrew-Jackson Care  
Emergency Management Office  
18720 250<sup>th</sup> Ave  
Bellevue, IA  
1 PM**

**It's very important that you have somebody present to represent your jurisdiction. Several cities have a current HMGP on file with the State and FEMA. These cities will have to do an amendment at a council meeting and adopt this new Multi-Jurisdiction Hazard Mitigation Plan once approved by FEMA to be compliant.**

Do not hesitate to contact me (563.672.3333) or Jackson County Emergency Management Coordinator, Lyn Medinger (563.542.3911) if you have any questions. Otherwise, I look forward to seeing you on November 15 to complete the HMGP so it can be submitted to the state and then onto FEMA.

## Jennifer Walker

---

**From:** Lyn Medinger [lmedinger@co.jackson.ia.us]  
**Sent:** Friday, February 03, 2012 8:41 AM  
**To:** classifieds@mspress.net  
**Cc:** Jennifer Walker  
**Attachments:** PUBLIC NOTICE2.doc

Nancy, Please place this Legal in your Feb. 8<sup>th</sup> paper.

Thank

*Lyn Medinger, Coordinator  
Jackson County Emergency Management  
18720 250th Ave  
Suite 1  
Bellevue, Iowa 52031  
563.672.3333 (Office)  
563.542.3911 (Cell)  
563-672-3333 (Fax)*

CAUTION: This message may contain competitive or other non-public information protected by federal law from disclosure and not intended for disclosure outside official government channels. Do not disseminate this message without the approval of originating office. If you receive this message in error, please notify the sender by reply e-mail and delete all copies of the message.

## **PUBLIC NOTICE**

A draft of the Jackson County Multi-Jurisdictional Multi-Hazard Mitigation Plan is available for public review on the Jackson County website:

<http://www.co.jackson.ia.us/offices/ema/index.htm>

The Plan will be available from February 8, 2011 to March 8, 2012 Comments on the plan may be submitted in writing to 18720 250<sup>th</sup> Ave Bellevue, Iowa 52031 or via email to [lmedinger@co.jackson.ia.us](mailto:lmedinger@co.jackson.ia.us).

Appendix C:

Modified STAPLEE Criteria

## JACKSON COUNTY STAPLEE RESULTS

After developing the mitigation strategy, the Planning Team conducted a prioritization activity to determine which actions were the most feasible, and would be addressed first. This activity placed particular emphasis on an economic analysis, weighing the cost of one action against the cost of another action. The economic analysis also weighed the cost of each action against the anticipated benefit.

The criteria applied by the Clinton County Hazard Mitigation Planning Team utilized a system also used by the State of Iowa in the statewide hazard mitigation plan. It involves application of the following criteria used to determine the viability of a proposed mitigation action. This process is referred to as the STAPLEE process:

- To be **SOCIALLY** acceptable, the community must support the overall implementation strategy and specific mitigation actions. The mitigation measure is evaluated in terms of community acceptance or whether the measure will treat all individuals and groups in the community equitably or whether it will result in a negative impact.
- To be **TECHNICALLY** feasible, the measure can be developed in a plan and implemented in a practical manner. The measure is evaluated in terms of whether it will reduce losses in the long term and has only minimal secondary impacts. It will also be evaluated as to whether it is a whole or partial solution and whether it solves problems instead of symptoms.
- To be **ADMINISTRATIVELY** capable, the agencies that are required to carry out the measure must have the skill, experience, knowledge, ability, staffing, funding, and maintenance capability to do so. The measure is evaluated by determining if personnel and administrative capabilities, funding, and maintenance requirements are adequate and also if the measure can be completed in a timely manner.
- To be **POLITICALLY** desirable, the measure will need the support of the community. That support can come from any number of sources, including elected officials, public or private agencies, administrators, and/or the general public.
- To have **LEGAL** authority, the measure must be supported by some legal source, such as a local code or ordinance, state law, or federal law. The unit of government undertaking the mitigation action should be identified and include an analysis of the interrelationships between local, regional, state, and federal governments.

• To be **ECONOMICALLY** beneficial, the measure's benefits must exceed the costs. The measure should contribute to overall economic goals of the community. Other considerations are whether there are current sources of funds to implement actions without incurring long-term debts and whether there is an increased burden on the tax base or economy if a proposed action is implemented.

• To be **ENVIRONMENTALLY** beneficial, the measure must not impact the natural environment negatively and in many instances may produce a positive impact. A proposed mitigation action will be evaluated as to how it affects the natural environment and whether it complies with local, state, and federal environmental laws and regulations.

Each of the STAPLEE criteria were considered separately and given a positive (+), negative (-), or neutral (0) rating. For example, if a mitigation action would be acceptable to a community, it would receive a positive (+) rating or if a mitigation action would adversely impact one of more segments of a community, it would receive a (-) rating. The results of this activity can be seen in Table 10 below:

| Mitigation Action   | Jurisdiction | S | T | A | P | L | E | E | Score |
|---|--------------|---|---|---|---|---|---|---|-------|
| Maintain or consider NFIP membership as required.   | ALL          | + | + | + | + | + | + | + | 7     |
| Maintain, enhance or install GIS System to better track critical facilities and vulnerable populations as well as respond to emergencies.   | ALL          | + | + | + | + | + | 0 | + | 6     |
| Create call down list of all critical personnel   | ALL          | + | + | + | + | + | + | + | 7     |
| Maintain procedure to backup all critical data to prevent loss in the event of hazard   | ALL          | + | + | + | + | + | + | + | 7     |
| Update snow and ice equipment as needed to better respond to snow and ice events  | ALL          | + | + | + | + | + | - | + | 5     |
| Update fire and rescue equipment as needed to better respond to emergencies.  | ALL          | + | + | + | + | + | - | + | 5     |
| Provide backup power generators and wiring for critical facilities.   | ALL          | + | 0 | + | + | + | - | + | 4     |
| Consider building a tornado safe room for all new construction.   | ALL          | + | 0 | 0 | 0 | 0 | - | + | 1     |
| Purchase or elevate structures, add lift stations, increase/reinforce culvert size, and add curb and gutter to streets in areas in flood zones with severe and repetitive flood damage to prevent reoccurrence. | ALL          | + | 0 | - | 0 | 0 | 0 | 0 | 0     |

| Mitigation Action  | Jurisdiction                                       | S | T | A | P | L | E | E | Score |
|--|--|---|---|---|---|---|---|---|-------|
| Continue to maintain existing outdoor warning siren systems and ensure appropriate coverage for population or ensure NOAA weather radios are available in uncovered areas.   | ALL  | + | + | - | + | 0 | + | + | 4     |
| Purchase barricades and signage as deemed necessary to better communicate information.   | ALL  | + | + | + | + | + | 0 | + | 6     |
| Train personnel as weather spotters.   | ALL  | + | + | + | + | + | + | + | 7     |
| Continue to improve public awareness of hazardous weather through newsletters, public notices, strolling signs, etc.   | ALL  | + | + | + | + | + | + | + | 7     |
| Make fire station temporarily available to individuals suffering from the effects of severe winter weather.  | Andrew/<br>Fire Department                         | + | + | + | + | + | + | + | 7     |
| Purchase bunker gear and air packs for 15 fire/rescue personnel.   | Andrew/<br>Fire Department                         | + | + | + | + | + | 0 | + | 6     |
| Continue to refer persons suffering from the effects of extreme temperatures to Jackson County Medical Center, Maquoketa.  | Andrew/<br>City Clerk                              | + | + | + | + | + | + | + | 7     |
| Update and maintain flood plain ordinances as necessary.   | Baldwin/<br>City Council                           | + | + | + | + | + | + | + | 7     |
| Continue to maintain and make improvements to the sanitary sewer system to reduce infiltration, including such projects as the installation of bolt-down covers on manholes in the floodplain areas and inspections of lift stations seals, etc. in the flood plain. | Baldwin/<br>Public Works                           | + | 0 | 0 | + | + | - | + | 3     |
| Continue to maintain a list of people on oxygen in the event of a power outage.  | Bellevue/<br>City Clerk                            | + | + | + | + | + | + | + | 7     |
| Create access from one side of the city to the other when railroads are blocking all access.   | Bellevue/<br>Bellevue Municipal<br>Utilities (BMU) | + | - | 0 | + | 0 | - | 0 | 0     |
| Continue to improve public knowledge of the City's warning system and enhance the City's current TV warning system.  | Bellevue/<br>City Clerk                            | + | + | + | + | + | + | + | 7     |
| Continue to maintain list of shelter spaces for emergency evacuations.   | Bellevue/<br>City Clerk                            | + | + | 0 | + | + | + | + | 6     |
| Continue to make City facilities available to people for protections during tornado watch/warning.   | Bellevue/<br>City Clerk                            | + | + | + | + | + | + | + | 7     |
| Explore possibility of working with manufactured home park owner   | Bellevue/  | 0 | 0 | 0 | - | - | 0 | + | -1    |











Appendix D:

Resolutions

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

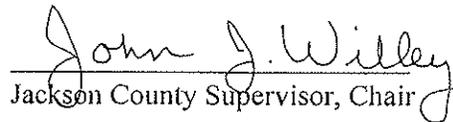
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes Jackson County.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

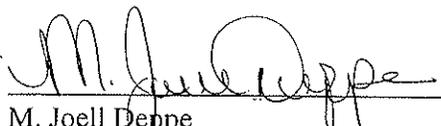
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of Jackson County in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the Jackson County does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 24 day of January, 2012.

  
Jackson County Supervisor, Chair

**ATTEST:**

  
M. Joell Deppe  
Jackson County Auditor

FEB 02 2012

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.

WHEREAS, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

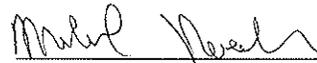
WHEREAS, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Andrew.

WHEREAS, the purpose of the mitigation plan was to lessen the effects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

WHEREAS, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Andrew in the form of a resolution and further requesting approval of the plan at the Federal Level; and

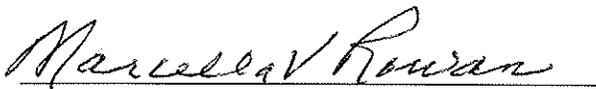
NOW, THEREFORE, the governing body of the City of Andrew does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 10th day of January, 2012.



Michael Roeder

ATTEST:



Marcella V. Rowan, City Clerk

**RESOLUTION 01-2012**

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

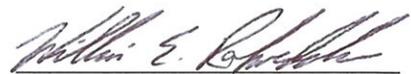
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Baldwin.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Baldwin in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Baldwin does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 3<sup>rd</sup> day of January, 2012.



William Rohwedder, Mayor

**ATTEST:**

  
Carrie Browne, City Clerk

RESOLUTION NO. 01-12

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Bellevue.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

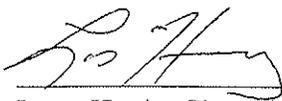
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Bellevue in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Bellevue does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 4th day of January, 2012.

  
Christopher J. Roling, Mayor

**ATTEST:**

  
Loras Herrig, City Administrator

FEB 16 2012

RESOLUTION 2012-7

**RESOLUTION APPROVING THE ADOPTION OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUESTING APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Maquoketa.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Maquoketa in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Maquoketa does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 6<sup>th</sup> day of February, 2012.



Don Schwenker, Mayor

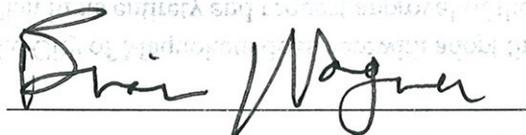
**ATTEST:**



Brian Wagner, City Manager

CERTIFICATION

I, Brian Wagner, City Manager, do hereby certify the above is a true and correct copy of Resolution No. 2012-7 which was passed by the Maquoketa City Council this 6<sup>th</sup> day of February 2012.



Brian Wagner, City Manager

RESOLUTION 642**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Miles.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

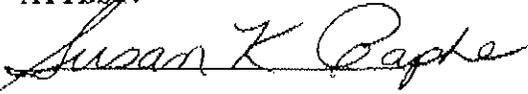
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Miles in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Miles does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 4th day of January, 2012.

  
Michael Portz, Mayor

ATTEST:



Susan Papke, City Clerk

RESOLUTION 12-1

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

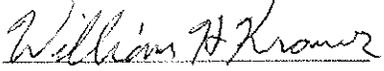
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Monmouth.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

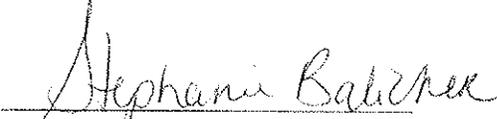
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Monmouth in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Monmouth does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 11<sup>th</sup> day of January, 2012.

  
William Kramer, Mayor

**ATTEST:**

  
Stephanie Balicheck, City Clerk

JAN 19 2012

RESOLUTION 2012-2

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Preston.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

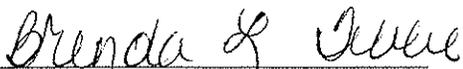
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Preston in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Preston does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 9<sup>th</sup>, day of January, 2012.

  
\_\_\_\_\_  
Chad Gruver, Mayor

**ATTEST:**

  
\_\_\_\_\_  
Brenda L. Tebbe, City Clerk/Trea.

RESOLUTION #969

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL

WHEREAS, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

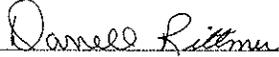
WHEREAS, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Sabula.

WHEREAS, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

WHEREAS, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Sabula in the form of a resolution and further requesting approval of the plan at the Federal Level; and

NOW, THEREFORE, the governing body of the City of Sabula does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 23rd day of January, 2012.

  
Darrell Rittmer, Mayor

ATTEST:

  
Ronda James, City Clerk

RESOLUTION 2012-01

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

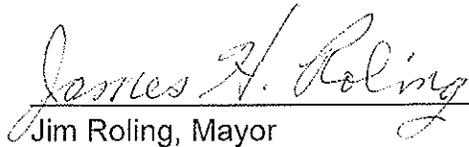
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of St. Donatus.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

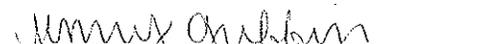
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of St. Donatus in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of St. Donatus does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 7<sup>th</sup> day of February, 2012.

  
Jim Roling, Mayor

ATTEST:

  
Jenny Griffin, City Clerk

JAN 23 2012

RESOLUTION 01-05-12

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.

WHEREAS, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazard and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

WHEREAS, Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association [ECIA] of Dubuque, Iowa, which includes the City of Spragueville.

WHEREAS, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

WHEREAS, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Spragueville in the form of a resolution and further requesting approval of the plan at the Federal Level; and

NOW, THEREFORE, the governing body of the City of Spragueville does here-with adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 5<sup>th</sup> day of January, 2012.

  
Loras Kilburg, Mayor

ATTEST:

  
Elizabeth Portz, City Clerk

FEB 10 2012

**RESOLUTION 2-7-12**

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-Jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Springbrook

**WHEREAS**, the purpose of the mitigation plan was to lessen the effects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County an prioritize the mitigation stratiefies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Springbrook in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Springbrook does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 7<sup>th</sup> day of February, 2012.



James Portz, Mayor

**ATTEST:**



Julia Boop, City Clerk

**RESOLUTION**

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the City of Zwingle.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the City of Zwingle in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the City of Zwingle does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 14<sup>th</sup> day of February .

  
Russell Ryan, Mayor

**ATTEST:**

  
Karla Mahoney, City Clerk

RESOLUTION

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.

WHEREAS, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

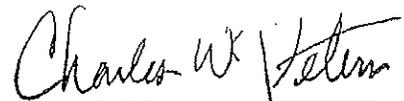
WHEREAS, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes Andrew Community School District.

WHEREAS, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

WHEREAS, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the Andrew Community School District in the form of a resolution and further requesting approval of the plan at the Federal Level; and

NOW, THEREFORE, the governing body of the Andrew Community School District does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 13<sup>th</sup> day of February, 2012.

  
Charlie Peters, Board President

ATTEST:

  
Jan Hammond, Board Secretary

**RESOLUTION**

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the Bellevue Community School District.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

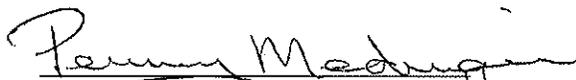
**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the Bellevue Community School District in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the Bellevue Community School District does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 13<sup>th</sup> day of February, 2012.

  
Gary Griebel, Board President

**ATTEST:**

  
Penny Medinger, Board Secretary/Treasurer

## RESOLUTION

### RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

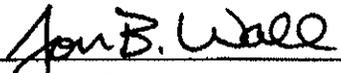
**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the East Central Community School District.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the East Central Community School District in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the East Central Community School District does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 23<sup>rd</sup> day of January, 2012

  
\_\_\_\_\_  
Jon Wall, EC Board President

**ATTEST:**

  
\_\_\_\_\_  
Tori Creger, Board Secretary

**RESOLUTION**

**RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, AND REQUEST APPROVAL OF PLAN AT THE FEDERAL LEVEL.**

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the **Maquoketa Community School District**.

**WHEREAS**, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the **Maquoketa Community School District** in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the **Maquoketa Community School District** does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

PASSED AND APPROVED this 13<sup>th</sup> day of February, 2012.

  
Brian Tabor, Board President

**ATTEST:**

  
Barb McKeon, Board Secretary

RESOLUTION

RESOLUTION APPROVING THE ADOPTING OF THE JACKSON COUNTY  
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN AND REQUEST  
APPROVAL OF PLAN AT THE FEDERAL LEVEL.

Whereas, the Federal Disaster Mitigation Act of 2000 was signed in to law October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes: and

Whereas, a Multi-jurisdictional Hazard Mitigation Plan was prepared by Jackson County with assistance from East Central Intergovernmental Association (ECIA) of Dubuque, Iowa, which includes the Preston Community School District.

Whereas, the purpose of the mitigation plan was to lessen the affects of disasters by increasing the disaster resistance of the County and participating jurisdictions located within the planning boundary by identifying the hazards that affect the County and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

Whereas, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the Preston Community School District in the form of a resolution and further requesting approval of the plan at the Federal Level: and

Now, Therefore, the governing body of the Preston Community School District does herewith adopt the Jackson County Multi-jurisdictional Hazard Mitigation Plan in its entirety and request approval of the plan at the Federal Level.

Passed and Approved this 19<sup>th</sup> day of January 2012.



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President of the Preston School Board

Appendix E:

National Climactic Data Center Information



NOAA Satellite and Information Service  
National Environmental Satellite, Data, and Information Service (NESDIS)



National Climatic  
Data Center  
U.S. Department of Commerce



[DOC](#) > [NOAA](#) > [NESDIS](#) > [NCDC](#)

Search Field:

## Query Results

**11 DROUGHT** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location or County** to display Details.*

### Iowa

| Location or County   | Date       | Time     | Type    | Mag | Dth | Inj | PrD | CrD    |
|--|------------|----------|---------|-----|-----|-----|-----|--------|
| 1 <a href="#">All Of Iowa</a>  | 08/01/1995 | 0000     | Drought | N/A | 0   | 0   | 0   | 0.5B   |
| 2 <a href="#">IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a> | 08/01/2003 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 312.5M |
| 3 <a href="#">IAZ041&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a> | 07/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 154.7M |
| 4 <a href="#">IAZ041&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a> | 08/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 42.7M  |
| 5 <a href="#">IAZ041&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a> | 09/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 0      |
| 6 <a href="#">IAZ041&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a> | 10/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 0      |
| 7 <a href="#">IAZ042 - 052&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a>        | 11/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 0      |
| 8 <a href="#">IAZ042 - 052&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a>        | 12/01/2005 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 0      |
| 9 <a href="#">IAZ042 - 052&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a>        | 01/01/2006 | 12:00 AM | Drought | N/A | 0   | 0   | 0   | 0      |

|   |            |          |         |     |   |   |   |        |
|---|------------|----------|---------|-----|---|---|---|--------|
| 10 IAZ042 - 053>054 -<br>063>068 - 076>078 - 087>089<br>- 098>099 | 02/01/2006 | 12:00 AM | Drought | N/A | 0 | 0 | 0 | 0      |
| 11 IAZ053>054 - 063>068 -<br>076>078 - 087>089 - 098>099          | 03/01/2006 | 12:00 AM | Drought | N/A | 0 | 0 | 0 | 0      |
| TOTALS:   |            |          |         |     | 0 | 0 | 0 | 1.010B |

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NOAA Satellite and Information Service  
National Environmental Satellite, Data, and Information Service (NESDIS)



National Climatic  
Data Center  
U.S. Department of Commerce



[DOC](#) > [NOAA](#) > [NESDIS](#) > [NCDC](#)

Search Field:

## Query Results

**42 FLOOD** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location or County** to display Details.*

### Iowa

| Location or County  | Date       | Time | Type        | Mag | Dth | Inj | PrD   | CrD  |
|---|------------|------|-------------|-----|-----|-----|-------|------|
| <a href="#">1 IAZ026&gt;030 - 035&gt;042 - 045&gt;054 - 056&gt;064 - 070&gt;079 - 080&gt;099</a>                            | 03/02/1993 | 1200 | Flooding    | N/A | 0   | 0   | 50K   | 0    |
| <a href="#">2 IAZ002&gt;011 - 013&gt;054 - 056&gt;064 - 070&gt;079 - 080&gt;099</a>   | 03/22/1993 | 0600 | Major Flood | N/A | 0   | 0   | 50.0M | 0    |
| <a href="#">3 IAZ002&gt;011 - 013&gt;054 - 056&gt;064 - 070&gt;079 - 080&gt;099</a>   | 04/01/1993 | 0000 | Major Flood | N/A | 0   | 0   | 50.0M | 0    |
| <a href="#">4 IAZ002&gt;011 - 013&gt;054 - 058&gt;064 - 071&gt;078 - 083&gt;089 - 093&gt;099</a>                            | 04/20/1993 | 0600 | Major Flood | N/A | 0   | 0   | 5.0M  | 0    |
| <a href="#">5 IAZ002&gt;011 - 013&gt;054 - 056&gt;064 - 070&gt;074 - 080&gt;084 - 090&gt;096</a>                            | 05/07/1993 | 1800 | Flood       | N/A | 0   | 0   | 5.0M  | 5.0M |
| <a href="#">6 IAZ005&gt;011 - 024&gt;030 - 036&gt;042 - 049&gt;054 - 061&gt;064 - 075&gt;078 - 086&gt;089 - 098 - 099 -</a> | 08/14/1993 | 2400 | Flood       | N/A | 0   | 0   | 5.0M  | 5.0M |
| <a href="#">7 IAZ002&gt;011 - 013&gt;054 - 056&gt;064 - 070&gt;078 - 080&gt;099</a>   | 08/29/1993 | 0300 | Flood       | N/A | 0   | 0   | 5.0M  | 5.0M |

|   |            |          |                         |     |   |   |      |      |
|---|------------|----------|-------------------------|-----|---|---|------|------|
| 8 All Of Iowa   | 09/01/1993 | 0000     | Flood                   | N/A | 0 | 0 | 500K | 500K |
| 9 IAZ028>030 -<br>040>054 - 056>064 -<br>070>078 - 080>099  | 09/25/1993 | 1400     | Flood                   | N/A | 0 | 0 | 5.0M | 500K |
| 10 Much Of Iowa   | 02/19/1994 | 0600     | Flooding                | N/A | 0 | 0 | 500K | 0    |
| 11 Much Of Iowa   | 03/03/1994 | 1200     | Flooding                | N/A | 0 | 0 | 500K | 0    |
| 12 IAZ001>099   | 06/22/1994 | 2330     | Flooding                | N/A | 0 | 0 | 500K | 500K |
| 13 JACKSON  | 08/19/1994 | 1530     | Urban<br>Flooding       | N/A | 0 | 0 | 5K   | 5K   |
| 14 JACKSON  | 04/09/1995 | 0145     | Urban<br>Flooding       | N/A | 0 | 0 | 10K  | 0    |
| 15 IAZ004>011 -<br>015>019 - 023>030 -<br>035>042 - 047>054 -<br>060>068 - 074>078 -<br>084>089 - 095>099 | 06/06/1995 | 2300     | Flood                   | N/A | 0 | 0 | 50K  | 100K |
| 16 Countywide   | 02/20/1997 | 04:00 PM | Flood                   | N/A | 0 | 0 | 0    | 0    |
| 17 IAZ042 - 054 -<br>066>068 - 078 - 089<br>- 099   | 04/08/1997 | 06:00 AM | Flood                   | N/A | 0 | 0 | 0    | 0    |
| 18 IAZ040>042 -<br>052>054 - 063>068 -<br>078 - 089 - 098>099   | 05/17/1999 | 09:00 AM | Flood                   | N/A | 0 | 0 | 0    | 0    |
| 19 Preston  | 07/21/1999 | 04:00 PM | Urban/sml<br>Stream Fld | N/A | 0 | 0 | 0    | 0    |
| 20 IAZ040>042 -<br>052>054 - 063>068 -<br>078 - 089 - 098>099   | 06/01/2000 | 07:30 AM | Flood                   | N/A | 0 | 0 | 0    | 0    |
| 21 Bellevue   | 06/13/2000 | 05:30 AM | Urban/sml<br>Stream Fld | N/A | 0 | 0 | 0    | 0    |
| 22 Maquoketa  | 07/02/2000 | 09:07 PM | Urban/sml<br>Stream Fld | N/A | 0 | 0 | 0    | 0    |
| 23 IAZ042 - 052 -<br>054 - 066>068 - 078<br>- 089 - 099   | 04/14/2001 | 05:30 AM | Snowmelt<br>Flooding    | N/A | 0 | 0 | 0    | 0    |
| 24 IAZ042 - 054 -<br>066>068 - 078 - 089<br>- 099   | 05/01/2001 | 01:00 AM | Flood                   | N/A | 0 | 0 | 0    | 0    |
| 25 IAZ042 - 054 -<br>066>068 - 078 - 089  | 04/21/2002 | 06:27 PM | Flood                   | N/A | 0 | 0 | 0    | 0    |

|  |            |          |             |     |   |   |          |         |
|--|------------|----------|-------------|-----|---|---|----------|---------|
| 26 <u>Monmouth</u>   | 06/04/2002 | 01:30 PM | Flash Flood | N/A | 0 | 0 | 0        | 0       |
| 27 <u>Maquoketa</u>  | 06/04/2002 | 06:00 AM | Flash Flood | N/A | 0 | 0 | 0        | 0       |
| 28 <u>Fulton</u>   | 06/04/2002 | 06:10 AM | Flash Flood | N/A | 0 | 0 | 0        | 0       |
| 29 <u>Maquoketa</u>  | 06/04/2002 | 07:00 AM | Flash Flood | N/A | 0 | 0 | 0        | 0       |
| 30 <u>IAZ042 - 054 - 089 - 099</u>                           | 05/20/2003 | 01:54 AM | Flood       | N/A | 0 | 0 | 4.0M     | 0       |
| 31 <u>IAZ040&gt;041 - 052&gt;054 - 054 - 063 - 067 - 078</u> | 05/23/2004 | 02:00 AM | Flood       | N/A | 0 | 0 | 0        | 0       |
| 32 <u>IAZ042 - 054 - 067</u>                                 | 06/14/2004 | 05:20 PM | Flood       | N/A | 0 | 0 | 0        | 0       |
| 33 <u>Maquoketa</u>  | 07/04/2007 | 00:05 AM | Flash Flood | N/A | 0 | 0 | 25K      | 0K      |
| 34 <u>Green Is</u>   | 07/18/2007 | 19:00 PM | Flash Flood | N/A | 0 | 0 | 5K       | 0K      |
| 35 <u>Maquoketa</u>  | 04/01/2008 | 00:00 AM | Flood       | N/A | 0 | 0 | 0K       | 0K      |
| 36 <u>Canton</u>   | 06/01/2008 | 00:00 AM | Flood       | N/A | 0 | 0 | 0K       | 0K      |
| 37 <u>Maquoketa</u>  | 06/19/2009 | 17:30 PM | Flash Flood | N/A | 0 | 0 | 50K      | 0K      |
| 38 <u>JACKSON</u>  | 07/24/2010 | 10:15 AM | Flood       | N/A | 0 | 0 | 1.0M     | 0K      |
| 39 <u>JACKSON</u>  | 08/13/2010 | 22:19 PM | Flash Flood | N/A | 0 | 0 | 0K       | 0K      |
| 40 <u>JACKSON</u>  | 10/02/2010 | 01:10 AM | Flood       | N/A | 0 | 0 | 0K       | 0K      |
| 41 <u>St Donatus</u>   | 04/18/2011 | 05:00 AM | Flood       | N/A | 0 | 0 | 250K     | 0K      |
| 42 <u>Garry Owen</u>   | 07/27/2011 | 20:00 PM | Flash Flood | N/A | 0 | 0 | 1.5M     | 0K      |
| TOTALS:  |            |          |             |     | 0 | 0 | 133.945M | 16.605M |

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Search Field:

## Query Results

**57 HAIL** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location or County** to display Details.*

### Iowa

| Location or County              | Date       | Time | Type | Mag      | Dth | Inj | PrD | CrD |
|---------------------------------|------------|------|------|----------|-----|-----|-----|-----|
| 1 <a href="#">JACKSON</a>       | 04/23/1961 | 1015 | Hail | 3.00 in. | 0   | 0   | 0   | 0   |
| 2 <a href="#">JACKSON</a>       | 04/23/1961 | 1245 | Hail | 0.75 in. | 0   | 0   | 0   | 0   |
| 3 <a href="#">JACKSON</a>       | 04/23/1961 | 2100 | Hail | 1.25 in. | 0   | 0   | 0   | 0   |
| 4 <a href="#">JACKSON</a>       | 03/21/1966 | 2215 | Hail | 1.50 in. | 0   | 0   | 0   | 0   |
| 5 <a href="#">JACKSON</a>       | 06/11/1971 | 1332 | Hail | 1.00 in. | 0   | 0   | 0   | 0   |
| 6 <a href="#">JACKSON</a>       | 06/06/1980 | 2122 | Hail | 1.75 in. | 0   | 0   | 0   | 0   |
| 7 <a href="#">JACKSON</a>       | 07/06/1987 | 1220 | Hail | 0.75 in. | 0   | 0   | 0   | 0   |
| 8 <a href="#">JACKSON</a>       | 08/16/1987 | 1555 | Hail | 1.75 in. | 0   | 0   | 0   | 0   |
| 9 <a href="#">JACKSON</a>       | 08/16/1987 | 1641 | Hail | 1.75 in. | 0   | 0   | 0   | 0   |
| 10 <a href="#">JACKSON</a>      | 04/02/1988 | 1830 | Hail | 0.75 in. | 0   | 0   | 0   | 0   |
| 11 <a href="#">JACKSON</a>      | 08/18/1994 | 1820 | Hail | 0.75 in. | 0   | 0   | 5K  | 50K |
| 12 <a href="#">Maquoketa</a>    | 08/18/1994 | 1825 | Hail | 0.75 in. | 0   | 0   | 5K  | 50K |
| 13 <a href="#">Bellevue</a>     | 08/18/1994 | 1832 | Hail | 0.75 in. | 0   | 0   | 5K  | 50K |
| 14 <a href="#">Bellevue</a>     | 08/19/1994 | 1545 | Hail | 2.00 in. | 0   | 0   | 50K | 50K |
| 15 <a href="#">Green Island</a> | 08/19/1994 | 1620 | Hail | 1.75 in. | 0   | 0   | 50K | 50K |
| 16 <a href="#">La Motte</a>     | 08/19/1994 | 1704 | Hail | 0.75 in. | 0   | 0   | 5K  | 50K |
| 17 <a href="#">La Motte</a>     | 08/19/1994 | 1730 | Hail | 0.75 in. | 0   | 0   | 5K  | 50K |
| 18 <a href="#">Spruce Creek</a> | 05/09/1995 | 1630 | Hail | 1.75 in. | 0   | 0   | 0   | 0   |
| 19 <a href="#">Dubuque</a>      | 06/23/1995 | 1655 | Hail | 0.75 in. | 0   | 0   | 1K  | 3K  |

|                       |            |          |      |          |   |   |       |     |
|-----------------------|------------|----------|------|----------|---|---|-------|-----|
| 20 <u>Dubuque</u>     | 06/23/1995 | 1710     | Hail | 0.75 in. | 0 | 0 | 1K    | 3K  |
| 21 <u>Maquoketa</u>   | 05/18/1997 | 04:30 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 22 <u>Miles</u>       | 07/20/1997 | 10:00 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 23 <u>Maquoketa</u>   | 05/15/1998 | 06:08 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 24 <u>Maquoketa</u>   | 06/18/1998 | 04:30 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 25 <u>Maquoketa</u>   | 04/03/1999 | 07:58 AM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 26 <u>Miles</u>       | 06/01/1999 | 04:00 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 27 <u>Bellevue</u>    | 07/21/1999 | 04:35 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 28 <u>Bellevue</u>    | 10/23/2001 | 08:05 PM | Hail | 0.88 in. | 0 | 0 | 0     | 0   |
| 29 <u>Andrew</u>      | 04/18/2002 | 02:20 PM | Hail | 0.88 in. | 0 | 0 | 0     | 0   |
| 30 <u>Maquoketa</u>   | 04/18/2002 | 02:20 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 31 <u>Preston</u>     | 05/30/2002 | 08:10 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 32 <u>Miles</u>       | 05/30/2002 | 08:11 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 33 <u>Maquoketa</u>   | 09/18/2002 | 01:40 PM | Hail | 2.75 in. | 0 | 0 | 20.0M | 0   |
| 34 <u>Baldwin</u>     | 09/18/2002 | 01:42 PM | Hail | 2.50 in. | 0 | 0 | 0     | 0   |
| 35 <u>Maquoketa</u>   | 09/18/2002 | 01:51 PM | Hail | 1.00 in. | 0 | 0 | 0     | 0   |
| 36 <u>Maquoketa</u>   | 09/18/2002 | 01:51 PM | Hail | 2.75 in. | 0 | 0 | 0     | 0   |
| 37 <u>Maquoketa</u>   | 07/05/2003 | 01:50 AM | Hail | 0.75 in. | 0 | 0 | 10K   | 2K  |
| 38 <u>Maquoketa</u>   | 07/05/2003 | 01:55 AM | Hail | 0.75 in. | 0 | 0 | 10K   | 0   |
| 39 <u>Maquoketa</u>   | 07/05/2003 | 12:00 AM | Hail | 0.75 in. | 0 | 0 | 10K   | 5K  |
| 40 <u>Maquoketa</u>   | 05/17/2004 | 07:23 PM | Hail | 1.00 in. | 0 | 0 | 2K    | 10K |
| 41 <u>Maquoketa</u>   | 05/21/2004 | 05:04 PM | Hail | 0.88 in. | 0 | 0 | 0     | 0   |
| 42 <u>Maquoketa</u>   | 05/21/2004 | 05:04 PM | Hail | 1.00 in. | 0 | 0 | 2K    | 4K  |
| 43 <u>Bellevue</u>    | 05/22/2004 | 02:54 AM | Hail | 1.00 in. | 0 | 0 | 5K    | 0   |
| 44 <u>St Donatus</u>  | 03/30/2005 | 11:55 AM | Hail | 1.00 in. | 0 | 0 | 1K    | 0   |
| 45 <u>Bellevue</u>    | 07/23/2005 | 07:15 AM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 46 <u>Monmouth</u>    | 03/12/2006 | 08:55 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 47 <u>Otter Creek</u> | 04/02/2006 | 05:43 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 48 <u>St Donatus</u>  | 04/13/2006 | 07:27 PM | Hail | 1.00 in. | 0 | 0 | 3K    | 0   |
| 49 <u>Garry Owen</u>  | 04/13/2006 | 09:54 PM | Hail | 0.75 in. | 0 | 0 | 0     | 0   |
| 50 <u>Andrew</u>      | 04/02/2007 | 21:57 PM | Hail | 0.88 in. | 0 | 0 | 0K    | 0K  |
| 51 <u>Springbrook</u> | 07/02/2008 | 13:20 PM | Hail | 0.88 in. | 0 | 0 | 0K    | 0K  |
| 52 <u>Monmouth</u>    |            |          |      |          |   |   |       |     |

|                    |            |          |      |          |   |   |         |      |
|--------------------|------------|----------|------|----------|---|---|---------|------|
|                    | 08/03/2008 | 06:24 AM | Hail | 0.75 in. | 0 | 0 | OK      | OK   |
| 53 <u>Bellevue</u> | 06/19/2009 | 08:12 AM | Hail | 1.00 in. | 0 | 0 | OK      | OK   |
| 54 <u>JACKSON</u>  | 05/25/2010 | 12:35 PM | Hail | 1.00 in. | 0 | 0 | OK      | OK   |
| 55 <u>Monmouth</u> | 05/22/2011 | 15:32 PM | Hail | 0.75 in. | 0 | 0 | OK      | OK   |
| 56 <u>Buckhorn</u> | 05/22/2011 | 15:45 PM | Hail | 0.75 in. | 0 | 0 | OK      | OK   |
| 57 <u>Monmouth</u> | 06/08/2011 | 20:30 PM | Hail | 1.00 in. | 0 | 0 | OK      | OK   |
| TOTALS:            |            |          |      |          | 0 | 0 | 20.170M | 377K |

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Search Field:

## Query Results

**1 LIGHTNING** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

*Click on **Location or County** to display Details.*

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

### Iowa

| Location or County          | Date       | Time | Type      | Mag | Dth | Inj | PrD | CrD |
|-----------------------------|------------|------|-----------|-----|-----|-----|-----|-----|
| 1 <a href="#">Maquoketa</a> | 08/07/1995 | 0000 | Lightning | N/A | 0   | 0   | 20K | 0   |
| TOTALS:                     |            |      |           |     | 0   | 0   | 20K | 0   |

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Search Field:

## Query Results

**126 SNOW & ICE** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location or County** to display Details.*

### Iowa

| Location or County   | Date       | Time | Type          | Mag | Dth | Inj | PrD | CrD |
|--|------------|------|---------------|-----|-----|-----|-----|-----|
| <a href="#">1 IAZ053 - 054 - 063 - 064 - 074 &gt; 078 - 084 &gt; 089 - 092</a>                               | 01/11/1993 | 1800 | Freezing Rain | N/A | 0   | 0   | 50K | 0   |
| <a href="#">2 IAZ002 &gt; 011 - 013 &gt; 054 - 056 &gt; 064 - 070 &gt; 078 - 080 &gt; 099</a>                | 01/20/1993 | 0430 | Ice Storm     | N/A | 0   | 0   | 50K | 0   |
| <a href="#">3 IAZ002 &gt; 011 - 013 &gt; 054 - 056 &gt; 064 - 070 &gt; 076 - 080 &gt; 086 - 090 &gt; 096</a> | 02/08/1993 | 2230 | Freezing Rain | N/A | 0   | 0   | 1K  | 0   |
| <a href="#">4 IAZ002 &gt; 011 - 013 &gt; 054 - 056 &gt; 064 - 070 &gt; 078 - 080 &gt; 099</a>                | 02/10/1993 | 2100 | Freezing Rain | N/A | 1   | 0   | 50K | 0   |
| <a href="#">5 IAZ005 &gt; 011 - 013 &gt; 044 - 050 &gt; 054 - 062 - 073 - 074</a>                            | 02/20/1993 | 1400 | Heavy Snow    | N/A | 0   | 0   | 50K | 0   |
| <a href="#">6 IAZ009 &gt; 011 - 018 - 019 -</a>  | 04/15/1993 | 1900 | Snow          | N/A | 0   | 0   | 50K | 0   |

|   |            |      |                                |     |   |   |       |   |
|---|------------|------|--------------------------------|-----|---|---|-------|---|
| <u>026&gt;030 -</u><br><u>037&gt;042 -</u><br><u>050&gt;054</u>   |            |      |                                |     |   |   |       |   |
| <u>7 T-</u>   | 01/02/1994 | 0600 | Snow/heavy Snow                | N/A | 0 | 0 | 500K  | 0 |
| <u>8 IAZ041 - 042 -</u><br><u>051&gt;054 -</u><br><u>061&gt;099</u>   | 01/26/1994 | 1300 | Freezing Rain                  | N/A | 0 | 0 | 500K  | 0 |
| <u>9 Southeast Third</u><br><u>Of Io</u>  | 02/22/1994 | 1000 | Snow                           | N/A | 0 | 0 | 5K    | 0 |
| <u>10 Southern Iowa</u>   | 12/06/1994 | 0000 | Ice Storm                      | N/A | 0 | 0 | 15.0M | 0 |
| <u>11 IAZ006&gt;066 -</u><br><u>069&gt;075</u>  | 12/07/1994 | 0600 | Heavy Snow                     | N/A | 0 | 0 | 500K  | 0 |
| <u>12 IAZ042 - 053</u><br><u>- 054 - 065&gt;068 -</u><br><u>077 - 078 -</u><br><u>087&gt;089 - 089 -</u><br><u>099</u>  | 01/19/1995 | 0400 | Heavy Snow                     | N/A | 0 | 0 | 100K  | 0 |
| <u>13 IAZ001&gt;004 -</u><br><u>012&gt;015 -</u><br><u>020&gt;028 -</u><br><u>031&gt;099</u>  | 01/26/1995 | 2300 | Freezing Rain                  | N/A | 0 | 0 | 100K  | 0 |
| <u>14 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 - 098 -</u><br><u>099</u>   | 11/10/1995 | 0400 | Snow/sleet/freezing<br>Rain    | N/A | 0 | 0 | 0     | 0 |
| <u>15 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 - 098 -</u><br><u>099</u>   | 11/27/1995 | 0400 | Snow/sleet/freezing<br>Rain    | N/A | 0 | 0 | 0     | 0 |
| <u>16 IAZ004&gt;011 -</u><br><u>015&gt;019 -</u><br><u>023&gt;030 -</u><br><u>033&gt;039 -</u><br><u>044&gt;050&gt;057 -</u><br><u>062 - 070&gt;075 -</u><br><u>081&gt;086 -</u><br><u>092&gt;097</u> | 12/08/1995 | 0200 | Snow                           | N/A | 0 | 0 | 20K   | 0 |
| <u>17 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u>   | 12/08/1995 | 0600 | Snow- High Wind-<br>Wind Chill | N/A | 0 | 0 | 0     | 0 |

|  |            |          |              |     |   |    |      |   |
|--|------------|----------|--------------|-----|---|----|------|---|
| <u>076&gt;078 -</u><br><u>087&gt;089 - 098 -</u><br><u>099</u>   |            |          |              |     |   |    |      |   |
| <u>18 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/18/1996 | 04:30 AM | Heavy Snow   | N/A | 0 | 0  | 0    | 0 |
| <u>19 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;067 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/26/1996 | 04:00 AM | Winter Storm | N/A | 0 | 0  | 0    | 0 |
| <u>20 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;088 -</u><br><u>098&gt;099</u> | 11/14/1996 | 06:00 AM | Winter Storm | N/A | 1 | 11 | 184K | 0 |
| <u>21 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;066</u>  | 12/25/1996 | 05:00 PM | Winter Storm | N/A | 0 | 0  | 0    | 0 |
| <u>22 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/27/1996 | 06:00 PM | Winter Storm | N/A | 0 | 3  | 100K | 0 |
| <u>23 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/09/1997 | 04:00 AM | Winter Storm | N/A | 0 | 0  | 0    | 0 |
| <u>24 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/15/1997 | 04:00 AM | Winter Storm | N/A | 0 | 0  | 0    | 0 |
| <u>25 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u>  | 01/24/1997 | 04:00 AM | Winter Storm | N/A | 0 | 0  | 0    | 0 |

|  |            |          |              |     |   |   |   |   |
|--|------------|----------|--------------|-----|---|---|---|---|
| <u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>  |            |          |              |     |   |   |   |   |
| <u>26 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                 | 02/03/1997 | 08:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>27 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;067 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                 | 10/26/1997 | 02:00 AM | Heavy Snow   | N/A | 0 | 0 | 0 | 0 |
| <u>28 IAZ030 - 042</u><br><u>- 052&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                  | 12/24/1997 | 11:00 AM | Heavy Snow   | N/A | 0 | 0 | 0 | 0 |
| <u>29 IAZ054 -</u><br><u>065&gt;068 - 078 -</u><br><u>089</u>  | 01/08/1998 | 10:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>30 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>065&gt;066</u>  | 01/20/1998 | 10:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>31 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;066</u>  | 12/06/1998 | 03:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>32 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;066</u>  | 12/06/1998 | 03:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>33 IAZ030 -</u><br><u>040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/30/1998 | 04:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>34 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u>                                      | 01/01/1999 | 05:17 AM | Winter Storm | N/A | 2 | 0 | 0 | 0 |

|  |            |          |              |     |   |   |   |   |
|--|------------|----------|--------------|-----|---|---|---|---|
| <u>098&gt;099</u>  |            |          |              |     |   |   |   |   |
| <u>35 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                 | 03/05/1999 | 01:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>36 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                 | 03/08/1999 | 03:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>37 IAZ041 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>088&gt;089 -</u><br><u>098&gt;099</u>                        | 12/16/1999 | 07:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>38 IAZ030 -</u><br><u>040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/19/1999 | 03:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>39 IAZ040&gt;042 -</u><br><u>052&gt;054 -</u><br><u>063&gt;068 - 089</u>  | 12/23/1999 | 02:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>40 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>                 | 01/03/2000 | 03:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>41 IAZ030 -</u><br><u>040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/17/2000 | 08:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| <u>42 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u>  | 01/19/2000 | 10:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |

|  |            |          |                    |     |   |   |   |   |
|--|------------|----------|--------------------|-----|---|---|---|---|
| <u>076&gt;078 -</u><br><u>088&gt;089</u>   |            |          |                    |     |   |   |   |   |
| <u>43 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 01/29/2000 | 03:00 PM | Winter Storm       | N/A | 0 | 0 | 0 | 0 |
| <u>44 IAZ041&gt;042 -</u><br><u>052&gt;054</u>   | 02/13/2000 | 04:00 AM | Winter Storm       | N/A | 0 | 0 | 0 | 0 |
| <u>45 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 02/17/2000 | 07:00 PM | Winter Storm       | N/A | 0 | 0 | 0 | 0 |
| <u>46 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/01/2000 | 02:00 AM | Snow               | N/A | 0 | 0 | 0 | 0 |
| <u>47 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>064&gt;068</u>  | 12/07/2000 | 04:00 AM | Snow/freezing Rain | N/A | 0 | 0 | 0 | 0 |
| <u>48 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/10/2000 | 10:00 PM | Winter Storm       | N/A | 0 | 0 | 0 | 0 |
| <u>49 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/15/2000 | 01:00 PM | Ice Storm          | N/A | 0 | 0 | 0 | 0 |
| <u>50 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/18/2000 | 04:00 AM | Snow/blowing Snow  | N/A | 0 | 0 | 0 | 0 |
| <u>51 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u>   | 12/20/2000 | 07:00 AM | Snow               | N/A | 0 | 0 | 0 | 0 |

|  |            |          |                      |     |   |   |   |   |
|--|------------|----------|----------------------|-----|---|---|---|---|
| <u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>   |            |          |                      |     |   |   |   |   |
| <u>52 IAZ040&gt;042 -</u><br><u>051&gt;054</u>   | 12/23/2000 | 01:00 AM | Snow                 | N/A | 0 | 0 | 0 | 0 |
| <u>53 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;064 - 066 -</u><br><u>068 - 076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u> | 12/28/2000 | 10:00 AM | Snow                 | N/A | 0 | 0 | 0 | 0 |
| <u>54 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 - 078</u>  | 01/01/2001 | 12:00 AM | Snow                 | N/A | 0 | 0 | 0 | 0 |
| <u>55 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>             | 01/13/2001 | 07:00 PM | Snow/freezing Rain   | N/A | 0 | 0 | 0 | 0 |
| <u>56 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>             | 01/26/2001 | 02:00 AM | Snow/blowing<br>Snow | N/A | 0 | 0 | 0 | 0 |
| <u>57 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>             | 01/28/2001 | 10:00 AM | Ice Storm            | N/A | 0 | 0 | 0 | 0 |
| <u>58 IAZ040&gt;042 -</u><br><u>051&gt;054</u>   | 02/07/2001 | 03:00 PM | Ice Storm            | N/A | 0 | 0 | 0 | 0 |
| <u>59 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;064 - 067 -</u><br><u>076&gt;077 -</u><br><u>087&gt;089 -</u><br><u>098&gt;099</u>       | 02/08/2001 | 11:00 PM | Winter Storm         | N/A | 0 | 0 | 0 | 0 |
| <u>60 IAZ040&gt;042 -</u><br><u>051&gt;054 -</u><br><u>063&gt;068 -</u><br><u>076&gt;078 -</u>   | 02/14/2001 | 05:00 AM | Freezing Rain        | N/A | 0 | 0 | 0 | 0 |

|  |            |          |                    |     |   |   |      |   |
|--|------------|----------|--------------------|-----|---|---|------|---|
| 087>088  |            |          |                    |     |   |   |      |   |
| 61 <u>IAZ040&gt;042 - 051&gt;054</u>   | 02/23/2001 | 10:30 PM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 62 <u>IAZ040&gt;042 - 054 - 066&gt;068 - 078 - 087&gt;089 - 098&gt;099</u>               | 03/15/2001 | 12:00 AM | Snow               | N/A | 0 | 0 | 0    | 0 |
| 63 <u>IAZ051&gt;052 - 054 - 063&gt;065 - 076&gt;077</u>                                  | 03/15/2001 | 12:00 AM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 64 <u>IAZ042 - 052 - 054 - 066&gt;068 - 078 - 089 - 099</u>                              | 04/14/2001 | 05:30 AM | Snowmelt Flooding  | N/A | 0 | 0 | 0    | 0 |
| 65 <u>IAZ053&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</u>              | 01/30/2002 | 03:00 AM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 66 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</u> | 03/01/2002 | 03:00 PM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 67 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;066</u>  | 01/28/2003 | 10:00 AM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 68 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</u> | 02/14/2003 | 04:00 PM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 69 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098</u>        | 03/04/2003 | 01:00 PM | Winter Storm       | N/A | 0 | 0 | 0    | 0 |
| 70 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;064</u>  | 01/16/2004 | 07:00 PM | Winter Weather/mix | N/A | 0 | 0 | 45K  | 0 |
| 71 <u>IAZ040&gt;042 - 051&gt;054 - 063&gt;064 - 066 -</u>                                | 01/05/2005 | 05:00 PM | Heavy Snow         | N/A | 0 | 0 | 120K | 0 |

|  |            |          |                       |     |   |   |     |    |
|--|------------|----------|-----------------------|-----|---|---|-----|----|
| 076  |            |          |                       |     |   |   |     |    |
| 72 IAZ040>042 -<br>051>054 -<br>063>068 -<br>076>078 -<br>087>089 -<br>098>099 | 12/08/2005 | 03:00 AM | Winter<br>Weather/mix | N/A | 0 | 0 | 0   | 0  |
| 73 IAZ040>042 -<br>051>054 -<br>063>068 -<br>076>078 -<br>087>089 -<br>098>099 | 02/15/2006 | 08:30 PM | Winter Weather        | N/A | 0 | 0 | 37K | 0  |
| 74 IAZ054  | 01/13/2007 | 13:15 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 75 IAZ054  | 01/21/2007 | 02:00 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 76 IAZ054  | 02/06/2007 | 06:20 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 77 IAZ054  | 02/11/2007 | 21:00 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 78 IAZ054  | 02/13/2007 | 01:45 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 79 IAZ042 - 054  | 02/16/2007 | 17:45 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 80 IAZ041 - 054  | 02/24/2007 | 10:30 AM | Ice Storm             | N/A | 0 | 0 | 66K | OK |
| 81 IAZ041 - 054  | 02/24/2007 | 10:30 AM | Winter Storm          | N/A | 0 | 0 | 26K | OK |
| 82 IAZ054 - 066  | 03/01/2007 | 18:55 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 83 IAZ054  | 11/21/2007 | 16:15 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 84 IAZ054 - 066  | 12/01/2007 | 10:00 AM | Winter Storm          | N/A | 0 | 0 | OK  | OK |
| 85 IAZ054  | 12/04/2007 | 16:15 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 86 IAZ054  | 12/06/2007 | 15:15 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 87 IAZ054 - 063<br>- 066   | 12/11/2007 | 01:00 AM | Ice Storm             | N/A | 0 | 0 | OK  | OK |
| 88 IAZ054  | 12/15/2007 | 01:30 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 89 IAZ054  | 12/22/2007 | 17:30 PM | Winter Storm          | N/A | 0 | 0 | OK  | OK |
| 90 IAZ054  | 12/28/2007 | 06:00 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 91 IAZ054  | 01/17/2008 | 01:00 AM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 92 IAZ054 - 068  | 01/20/2008 | 22:30 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 93 IAZ054  | 02/03/2008 | 15:30 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |
| 94 IAZ054 - 078  | 02/05/2008 | 14:00 PM | Winter Storm          | N/A | 0 | 0 | OK  | OK |
| 95 IAZ041 - 054  | 02/11/2008 | 14:00 PM | Winter Weather        | N/A | 0 | 0 | OK  | OK |

|                                      |            |          |                |     |   |   |    |    |
|--------------------------------------|------------|----------|----------------|-----|---|---|----|----|
| - 063 - 064                          |            |          |                |     |   |   |    |    |
| 96 IAZ054 - 065<br>- 066             | 02/17/2008 | 02:00 AM | Winter Storm   | N/A | 0 | 0 | OK | OK |
| 97 IAZ054 - 065<br>- 066             | 02/17/2008 | 02:00 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 98 IAZ040 - 054<br>- 066 - 076 - 077 | 02/25/2008 | 16:00 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 99 IAZ054                            | 02/28/2008 | 16:30 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 100 IAZ054                           | 03/27/2008 | 10:30 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 101 IAZ054 - 066                     | 11/30/2008 | 01:35 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 102 IAZ054                           | 12/03/2008 | 08:30 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 103 IAZ041 - 054                     | 12/08/2008 | 10:30 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 104 IAZ054 - 064                     | 12/16/2008 | 10:30 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 105 IAZ041 -<br>053>054 - 066        | 12/18/2008 | 22:00 PM | Heavy Snow     | N/A | 0 | 0 | OK | OK |
| 106 IAZ041 -<br>053>054 - 066        | 12/18/2008 | 22:00 PM | Winter Storm   | N/A | 0 | 0 | OK | OK |
| 107 IAZ042 - 054<br>- 066 - 068      | 12/24/2008 | 04:00 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 108 IAZ054                           | 01/09/2009 | 19:15 PM | Heavy Snow     | N/A | 0 | 0 | OK | OK |
| 109 IAZ054                           | 02/13/2009 | 17:30 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 110 IAZ054 - 098                     | 02/20/2009 | 22:30 PM | Winter Storm   | N/A | 0 | 0 | OK | OK |
| 111 IAZ054 - 098                     | 02/20/2009 | 22:30 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 112 IAZ040 - 053<br>- 054            | 12/08/2009 | 01:30 AM | Winter Storm   | N/A | 0 | 0 | OK | OK |
| 113 IAZ042 - 054<br>- 066            | 12/21/2009 | 18:00 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 114 IAZ054                           | 12/23/2009 | 10:00 AM | Ice Storm      | N/A | 0 | 0 | OK | OK |
| 115 IAZ042 - 054<br>- 064            | 12/25/2009 | 12:00 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 116 IAZ054 - 066<br>- 099            | 01/06/2010 | 19:00 PM | Winter Storm   | N/A | 0 | 0 | OK | OK |
| 117 IAZ042 - 054<br>- 068            | 01/25/2010 | 08:00 AM | Winter Weather | N/A | 0 | 0 | OK | OK |
| 118 IAZ054 - 078<br>- 088 - 098      | 02/07/2010 | 23:00 PM | Winter Weather | N/A | 0 | 0 | OK | OK |
|                                      |            |          |                |     |   |   |    |    |

|                                 |            |          |                |     |   |    |         |    |
|---------------------------------|------------|----------|----------------|-----|---|----|---------|----|
| 119 IAZ054 - 065                | 03/19/2010 | 21:00 PM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| 120 IAZ042 - 054<br>- 066       | 12/03/2010 | 16:00 PM | Winter Storm   | N/A | 0 | 0  | OK      | OK |
| 121 IAZ054                      | 12/11/2010 | 22:30 PM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| 122 IAZ054 - 066                | 12/15/2010 | 19:35 PM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| 123 IAZ054 - 066                | 12/20/2010 | 09:15 AM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| 124 IAZ054 - 077<br>- 088       | 12/23/2010 | 23:00 PM | Winter Storm   | N/A | 0 | 0  | OK      | OK |
| 125 IAZ054 - 077<br>- 088       | 12/23/2010 | 23:00 PM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| 126 IAZ054 - 065<br>- 077 - 087 | 01/17/2011 | 02:00 AM | Winter Weather | N/A | 0 | 0  | OK      | OK |
| TOTALS:                         |            |          |                |     | 4 | 14 | 17.553M | 0  |

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Search Field:

## Query Results

**18 TEMPERATURE EXTREMES** event(s) were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on **Location or County** to display Details.*

### Iowa

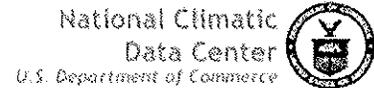
| Location or County  | Date       | Time     | Type                    | Mag | Dth | Inj | PrD  | CrD   |
|---|------------|----------|-------------------------|-----|-----|-----|------|-------|
| 1 <a href="#">All Of Iowa</a>   | 01/14/1994 | 0300     | Extreme Cold            | N/A | 1   | 0   | 500K | 0     |
| 2 <a href="#">All Of Iowa</a>   | 01/17/1994 | 0600     | Extreme Cold            | N/A | 0   | 0   | 500K | 0     |
| 3 <a href="#">All Of Iowa</a>   | 02/10/1995 | 2200     | Extreme Wind Chill      | N/A | 0   | 0   | 50K  | 0     |
| 4 <a href="#">IAZ004&gt;011 - 015&gt;019 - 023&gt;030 - 033&gt;042 - 044&gt;054 - 057&gt;068 - 070&gt;078 - 081&gt;089 - 092&gt;099</a> | 05/01/1995 | 0000     | Cold And Wet Conditions | N/A | 0   | 0   | 0    | 66.0M |
| 5 <a href="#">All Of Iowa</a>   | 07/12/1995 | 1100     | Heat Wave               | N/A | 3   | 0   | 3.8M | 0     |
| 6 <a href="#">IAZ004&gt;011 - 015&gt;019 - 023&gt;030 - 033&gt;039 - 044&gt;050&gt;057 - 062 - 070&gt;075 - 081&gt;086 - 092&gt;097</a> | 12/08/1995 | 1300     | Extreme Wind Chill      | N/A | 0   | 0   | 0    | 0     |
| 7 <a href="#">IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 - 098&gt;099</a>  | 01/30/1996 | 08:00 PM | Extreme Cold            | N/A | 0   | 0   | 0    | 0     |
| 8 <a href="#">IAZ040&gt;042 - 051&gt;054 - 063&gt;068 - 076&gt;078 - 087&gt;089 -</a>   | 02/01/1996 | 12:00 AM | Extreme Cold            | N/A | 0   | 0   | 0    | 0     |

|  |            |          |                               |     |   |    |        |         |
|--|------------|----------|-------------------------------|-----|---|----|--------|---------|
| <u>098&gt;099</u>  |            |          |                               |     |   |    |        |         |
| 9 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u>        | 01/10/1997 | 04:00 AM | Extreme<br>Windchill          | N/A | 0 | 0  | 0      | 0       |
| 10 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u>       | 01/17/1997 | 04:00 AM | Extreme<br>Windchill          | N/A | 0 | 0  | 0      | 0       |
| 11 <u>IAZ030 - 040&gt;042</u><br><u>- 051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u> | 07/25/1997 | 04:00 AM | Excessive<br>Heat             | N/A | 0 | 12 | 1K     | 0       |
| 12 <u>IAZ030 - 040&gt;042</u><br><u>- 051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u> | 07/19/1999 | 04:00 AM | Excessive<br>Heat             | N/A | 0 | 0  | 0      | 0       |
| 13 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u>       | 12/16/2000 | 02:00 PM | Extreme<br>Windchill          | N/A | 0 | 0  | 0      | 0       |
| 14 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u>       | 12/21/2000 | 04:00 AM | Extreme<br>Windchill          | N/A | 0 | 0  | 0      | 0       |
| 15 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098&gt;099</u>       | 12/23/2000 | 10:00 PM | Extreme<br>Windchill          | N/A | 0 | 0  | 0      | 0       |
| 16 <u>IAZ040&gt;042 -</u><br><u>051&gt;054 - 063&gt;068 -</u><br><u>076&gt;078 - 087&gt;089 -</u><br><u>098</u>              | 02/02/2007 | 04:00 AM | Extreme<br>Cold/wind<br>Chill | N/A | 0 | 0  | 0K     | 0K      |
| 17 <u>IAZ041 - 054 - 063</u>   | 01/24/2008 | 04:00 AM | Extreme<br>Cold/wind<br>Chill | N/A | 0 | 0  | 0K     | 0K      |
| 18 <u>IAZ042 - 053 - 054</u>   | 01/14/2009 | 19:00 PM | Extreme<br>Cold/wind<br>Chill | N/A | 0 | 0  | 0K     | 0K      |
| TOTALS:  |            |          |                               |     | 4 | 12 | 4.851M | 66.000M |

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Search Field:

## Query Results

**14 TORNADO(s)** were reported in **Jackson County, Iowa** between **04/30/1950** and **07/31/2011**.

**Mag:** Magnitude  
**Dth:** Deaths  
**Inj:** Injuries  
**PrD:** Property Damage  
**CrD:** Crop Damage

*Click on [Location](#) or [County](#) to display Details.*

### Iowa

| Location or County             | Date       | Time     | Type    | Mag | Dth | Inj | PrD    | CrD |
|--------------------------------|------------|----------|---------|-----|-----|-----|--------|-----|
| <a href="#">1 JACKSON</a>      | 04/19/1955 | 1730     | Tornado | F2  | 0   | 0   | 3K     | 0   |
| <a href="#">2 JACKSON</a>      | 11/15/1960 | 1604     | Tornado | F2  | 0   | 0   | 3K     | 0   |
| <a href="#">3 JACKSON</a>      | 05/26/1965 | 1930     | Tornado | F   | 0   | 1   | 3K     | 0   |
| <a href="#">4 JACKSON</a>      | 06/19/1967 | 1930     | Tornado | F0  | 0   | 0   | 0K     | 0   |
| <a href="#">5 JACKSON</a>      | 06/26/1969 | 2100     | Tornado | F1  | 0   | 0   | 25K    | 0   |
| <a href="#">6 JACKSON</a>      | 11/09/1975 | 1930     | Tornado | F2  | 0   | 2   | 250K   | 0   |
| <a href="#">7 JACKSON</a>      | 12/14/1975 | 0447     | Tornado | F1  | 0   | 0   | 25K    | 0   |
| <a href="#">8 JACKSON</a>      | 03/25/1988 | 1613     | Tornado | F0  | 0   | 0   | 25K    | 0   |
| <a href="#">9 JACKSON</a>      | 06/02/1990 | 1412     | Tornado | F1  | 0   | 0   | 25K    | 0   |
| <a href="#">10 JACKSON</a>     | 03/27/1991 | 1220     | Tornado | F2  | 0   | 0   | 250K   | 0   |
| <a href="#">11 Preston</a>     | 04/19/1996 | 07:17 PM | Tornado | F0  | 0   | 0   | 10K    | 0   |
| <a href="#">12 Miles</a>       | 04/30/1997 | 03:42 PM | Tornado | F0  | 0   | 0   | 0      | 0   |
| <a href="#">13 Springbrook</a> | 06/01/2007 | 13:28 PM | Tornado | F2  | 0   | 0   | 3.3M   | 0K  |
| <a href="#">14 JACKSON</a>     | 06/05/2010 | 18:40 PM | Tornado | F1  | 0   | 1   | 250K   | 0K  |
| <b>TOTALS:</b>                 |            |          |         |     | 0   | 4   | 4.118M | 0   |

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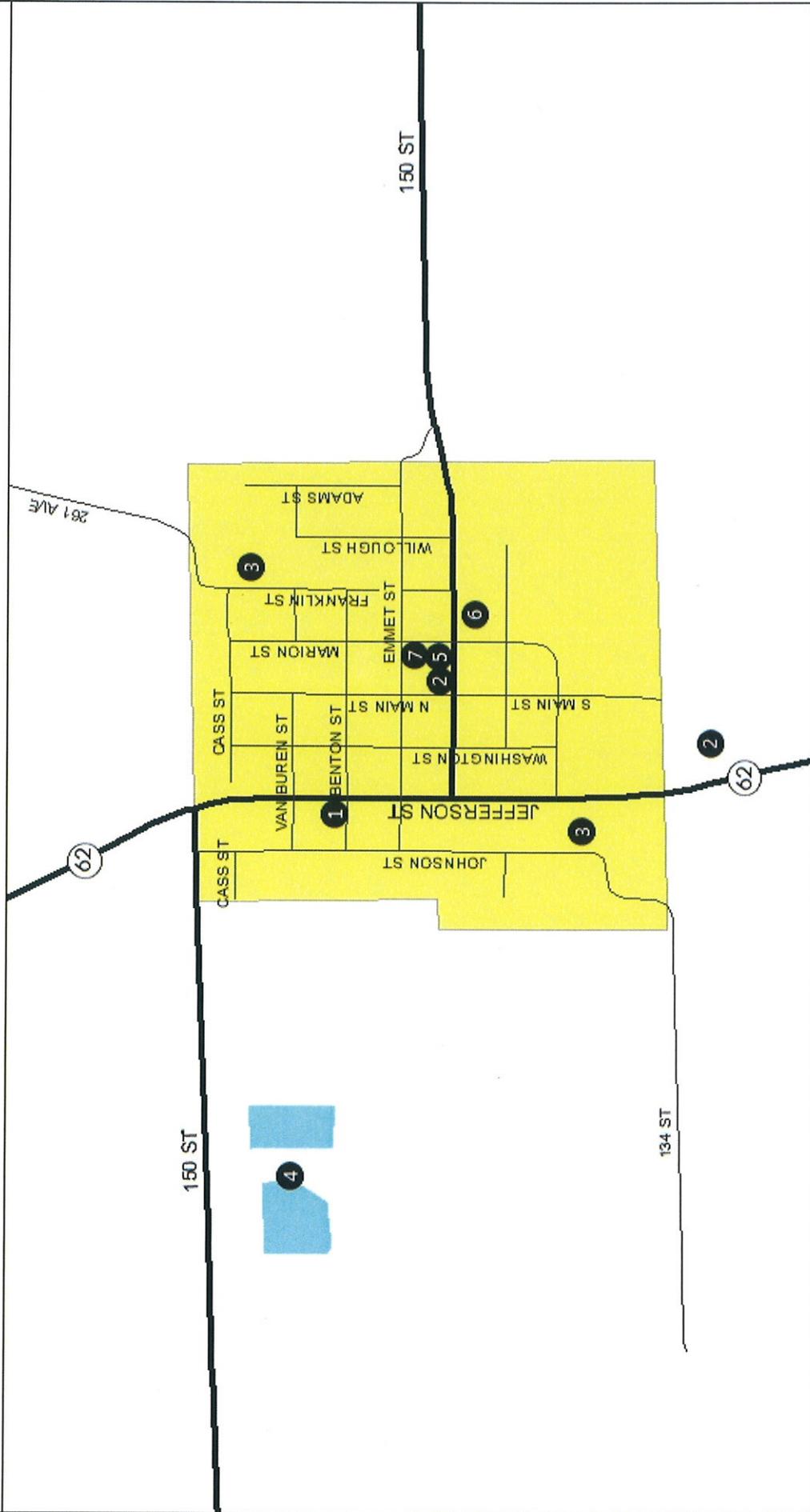
Appendix F:

Critical Facilities Maps



# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Andrew Critical Facilities

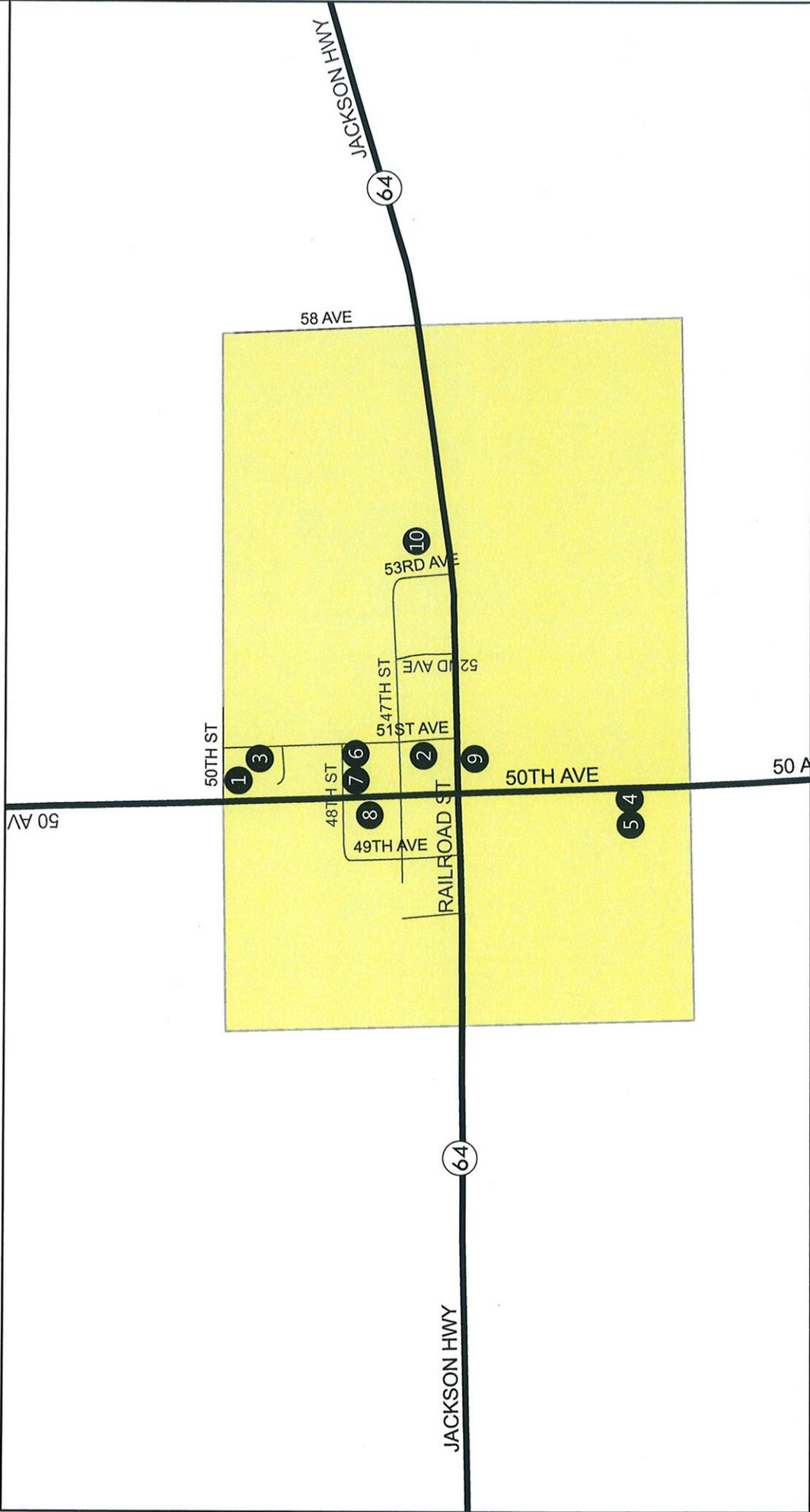


### Legend

-  Corporate Boundary
- 1. Andrew Wells (2)
- 2. Andrew Lift Stations (2)
- 3. Andrew Cell Lagoons (2)
- 4. Andrew Water Tower
- 5. Andrew Community School
- 6. Andrew Fire Station
- 7. Andrew Fire Station



# City of Baldwin Critical Facilities



**Legend**



Corporate Boundary

- 1. Water Tower
- 2. Fire Station
- 3. Water Building and Pump
- 4. Pump/Lift Station
- 5. Sentry Siren & Pole

- 6. Sentry Siren & Pole
- 7. Storage & Water Pump #1
- 8. City Hall
- 9. Baldwin-Nashville Telephone
- 10. D&T Super Stop and Shop

# City of Bellevue Critical Facilities



**Legend**



Corporate Boundary

- 1. Waste Water Treatment Facility
- 2. Fire Station
- 3. Water Tower
- 4. Substation 1
- 5. Substation 2

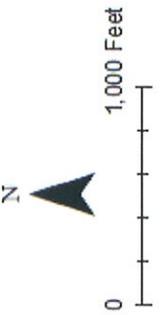
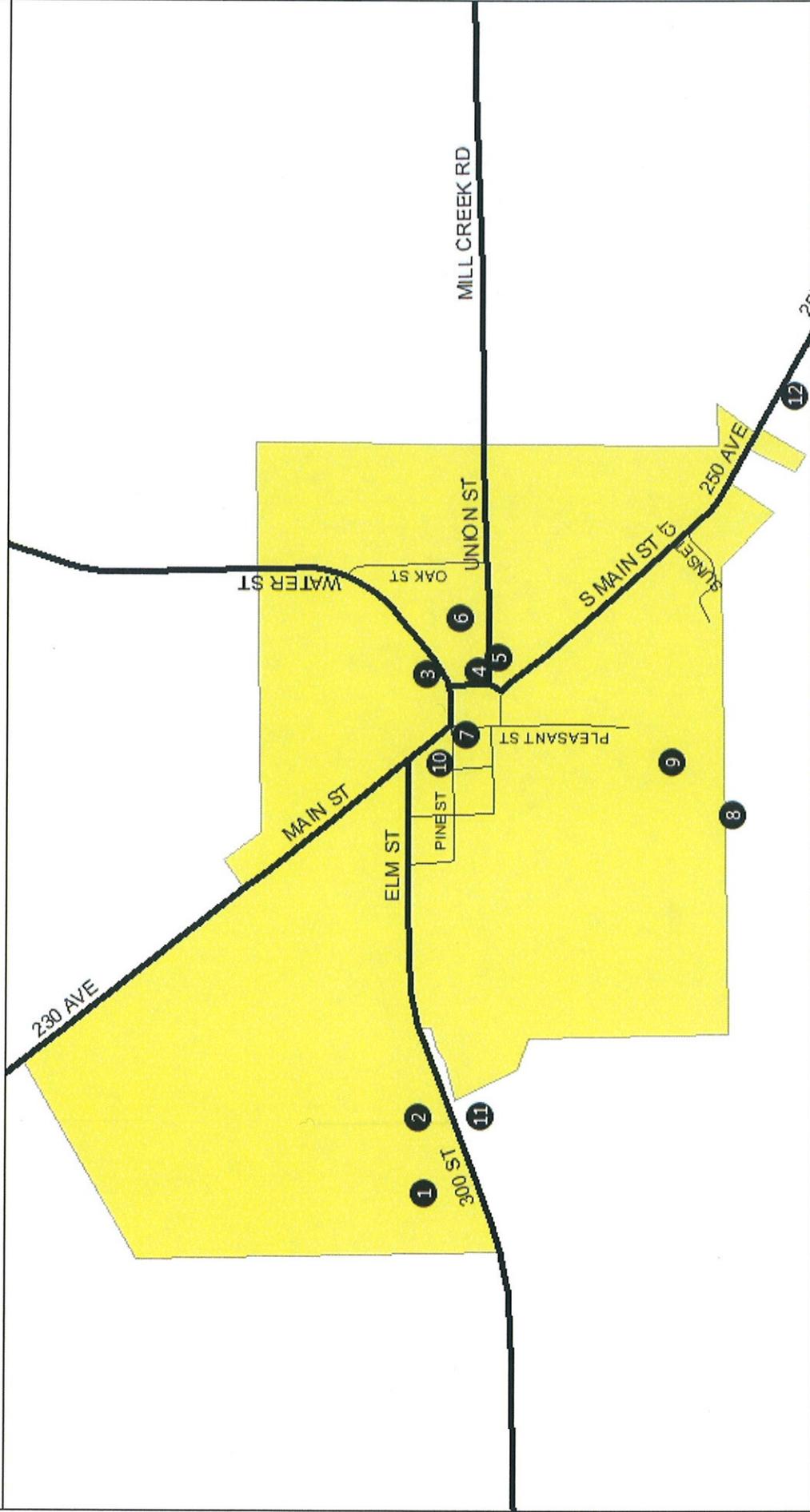
- 6. Lift Station 1
- 7. Lift Station 2
- 8. Lift Station 3
- 9. Well Building 1
- 10. Well Building 2

- 11. Ambulance building
- 12. City Hall/Police
- 13. Utility Plant
- 14. Cable Building



# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of La Motte Critical Facilities



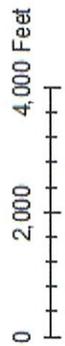
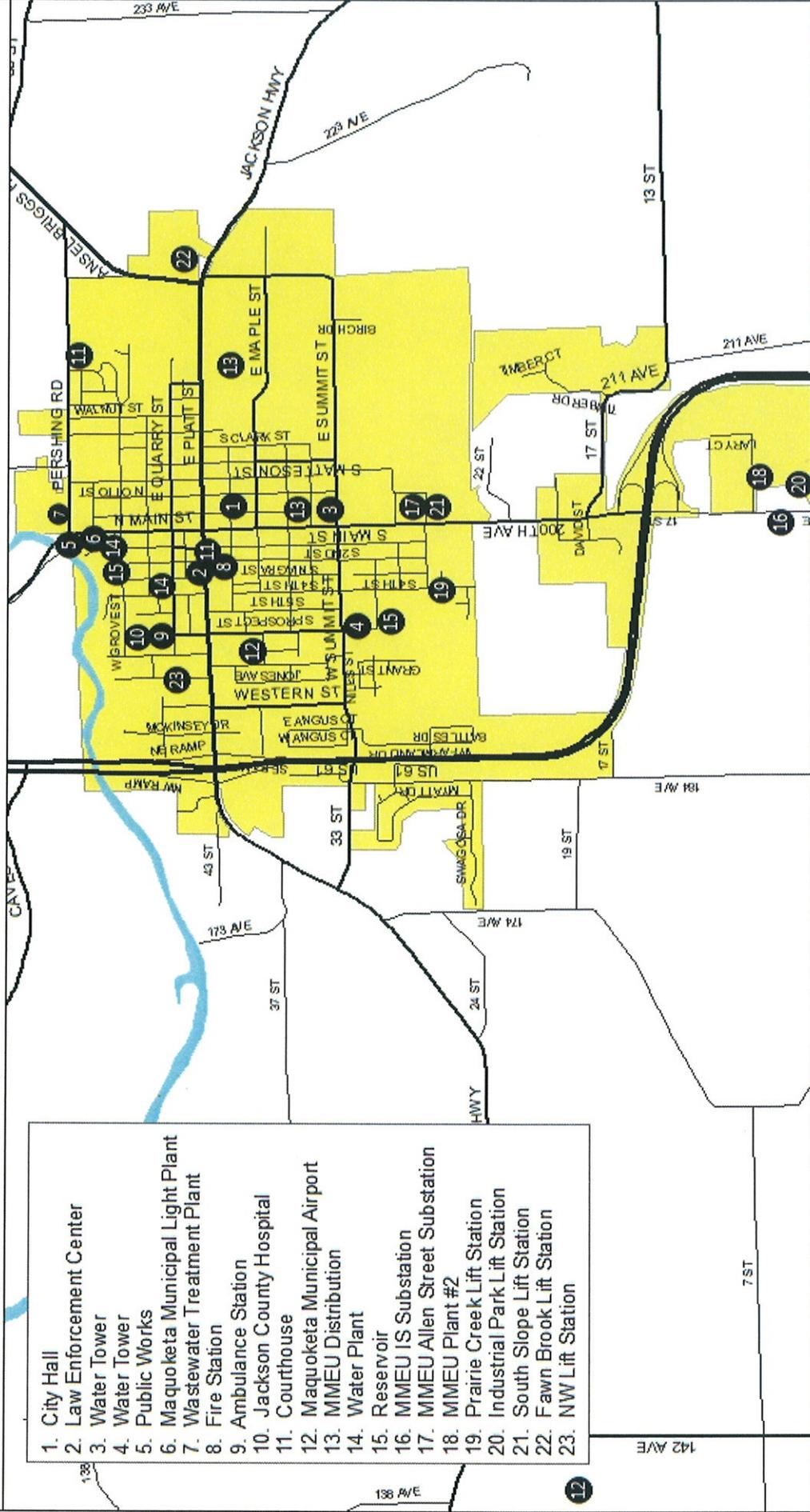
- 1. Jackson County Secondary Roads Shop
- 2. Bullock Ag
- 3. LaMotte Fire Station
- 4. Clasen's Service Station
- 5. City Garage
- 6. City Waterworks/Well House
- 7. City Hall
- 8. Wastewater Treatment Facility
- 9. Lift Station
- 10. LaMotte Telephone Company
- 11. Well 1
- 12. Well 2

**Legend**  
 Corporate Boundary

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Maquoketa Critical Facilities

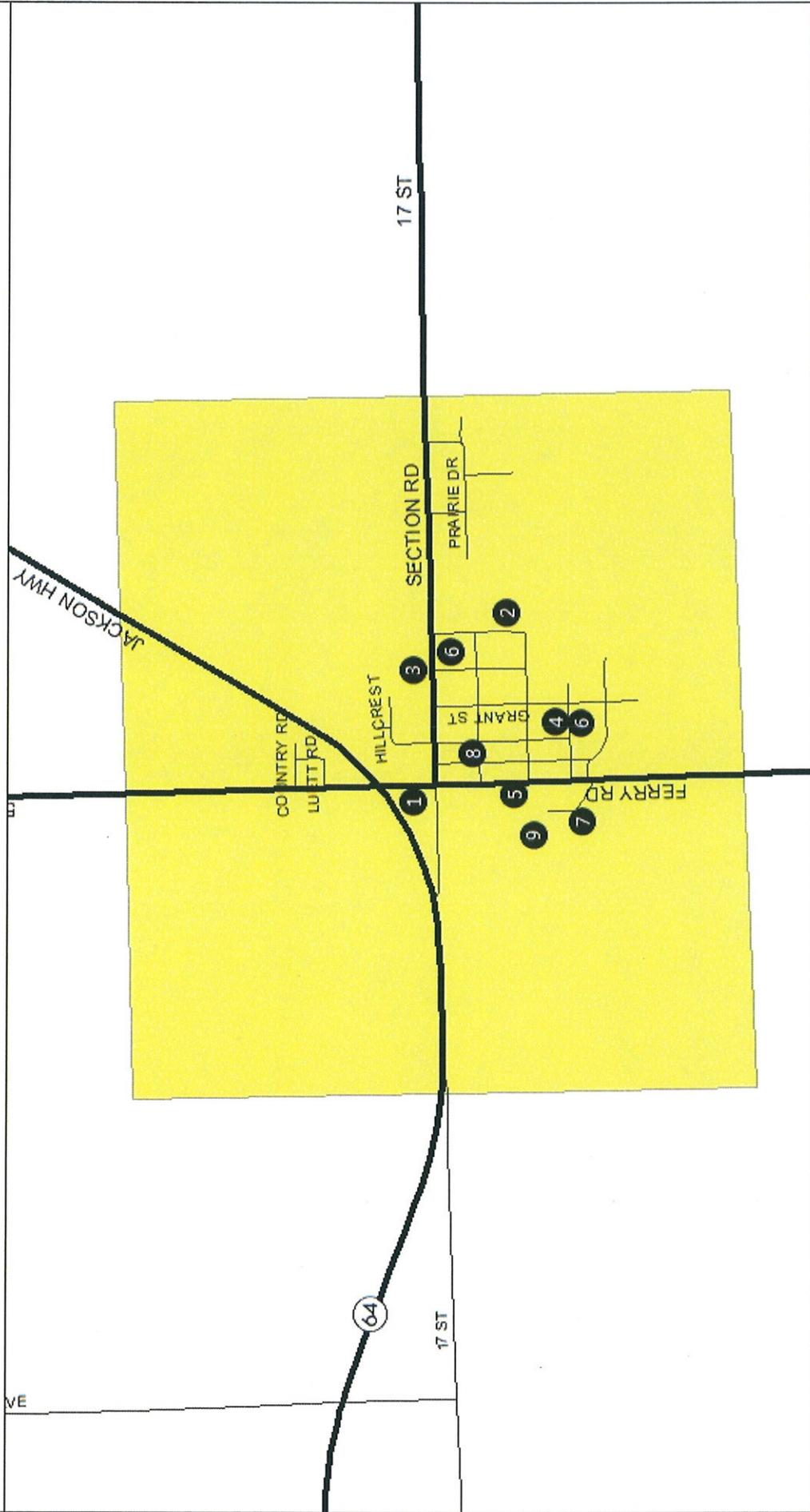
1. City Hall
2. Law Enforcement Center
3. Water Tower
4. Water Tower
5. Public Works
6. Maquoketa Municipal Light Plant
7. Wastewater Treatment Plant
8. Fire Station
9. Ambulance Station
10. Jackson County Hospital
11. Courthouse
12. Maquoketa Municipal Airport
13. MMEU Distribution
14. Water Plant
15. Reservoir
16. MMEU IS Substation
17. MMEU Allen Street Substation
18. MMEU Plant #2
19. Prairie Creek Lift Station
20. Industrial Park Lift Station
21. South Slope Lift Station
22. Fawn Brook Lift Station
23. NW Lift Station



**Legend**  
 Corporate Boundary

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Miles Critical Facilities

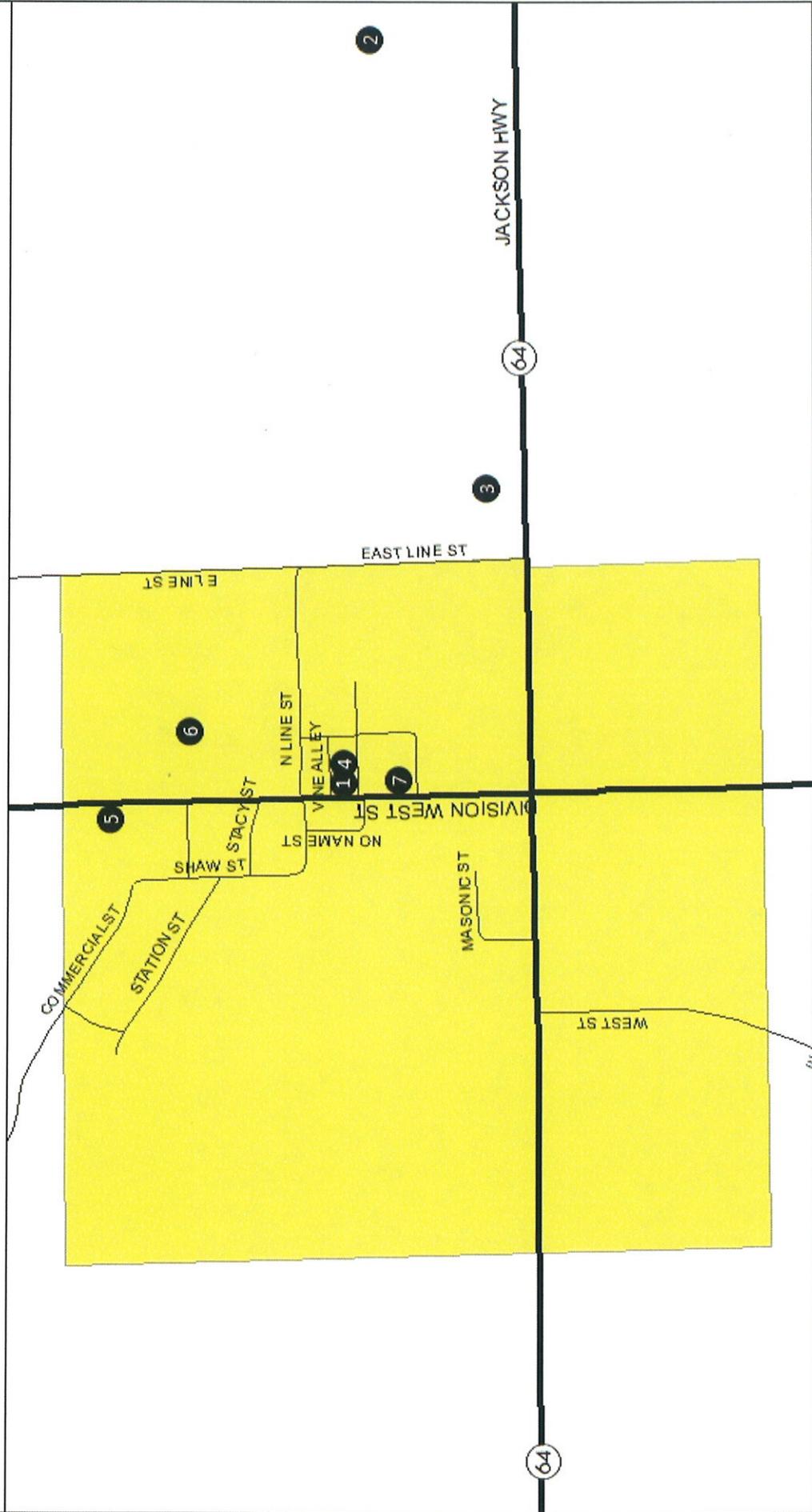


- 1. Miles Mini Mart
- 2. East Central School District
- 3. City Well #1/Water Tower
- 4. City Well #2
- 5. City Hall/Ambulance
- 6a & 6b. Warning Sirens
- 7. Miles Telephone Co
- 8. Fire Station
- 9. Sewage Plant

**Legend**  
Corporate Boundary

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Monmouth Critical Facilities

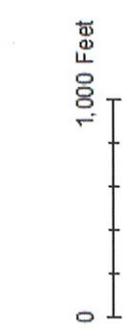


### Legend

 Corporate Boundary

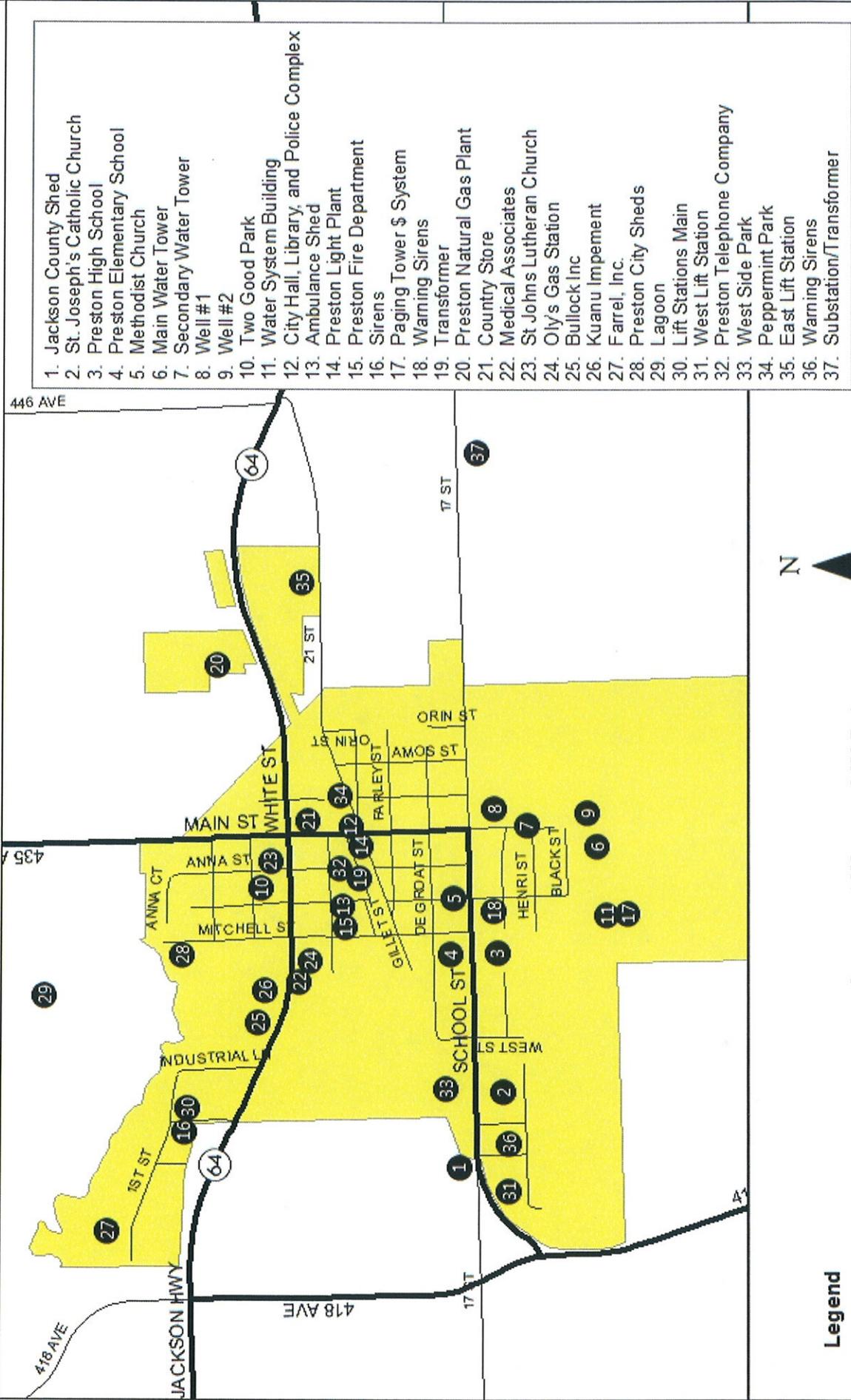
- 1. Garage/City Hall/Water
- 2. Sewer Lagoon
- 3. Lift Station
- 4. Generator, Storage Shed & Wells (2 total, but only 1 in use)

- 5. Water Tower
- 6. Old School Gym (Community Center)
- 7. City Park



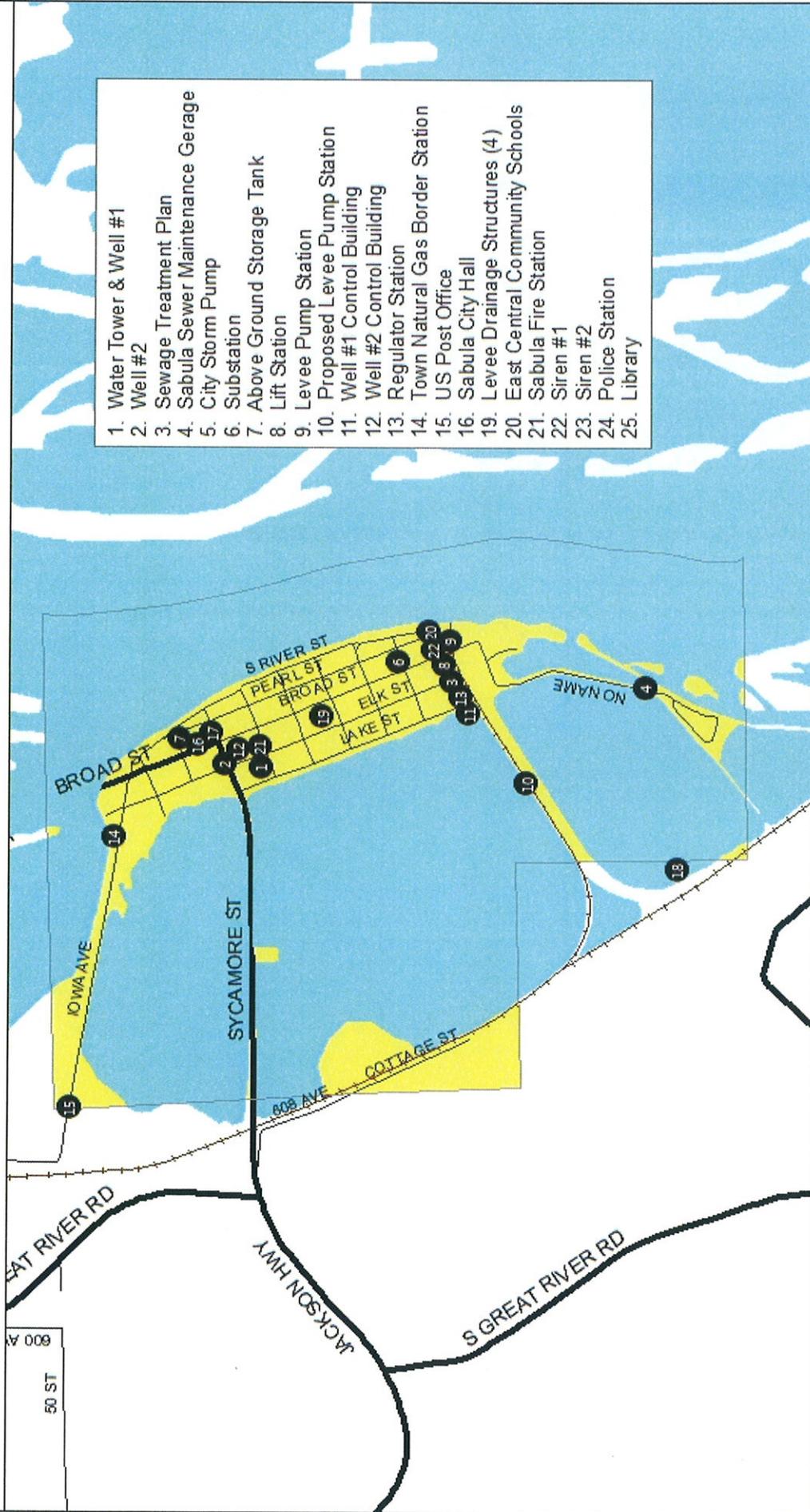
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Preston Critical Facilities



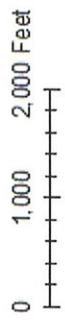
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Sabula Critical Facilities

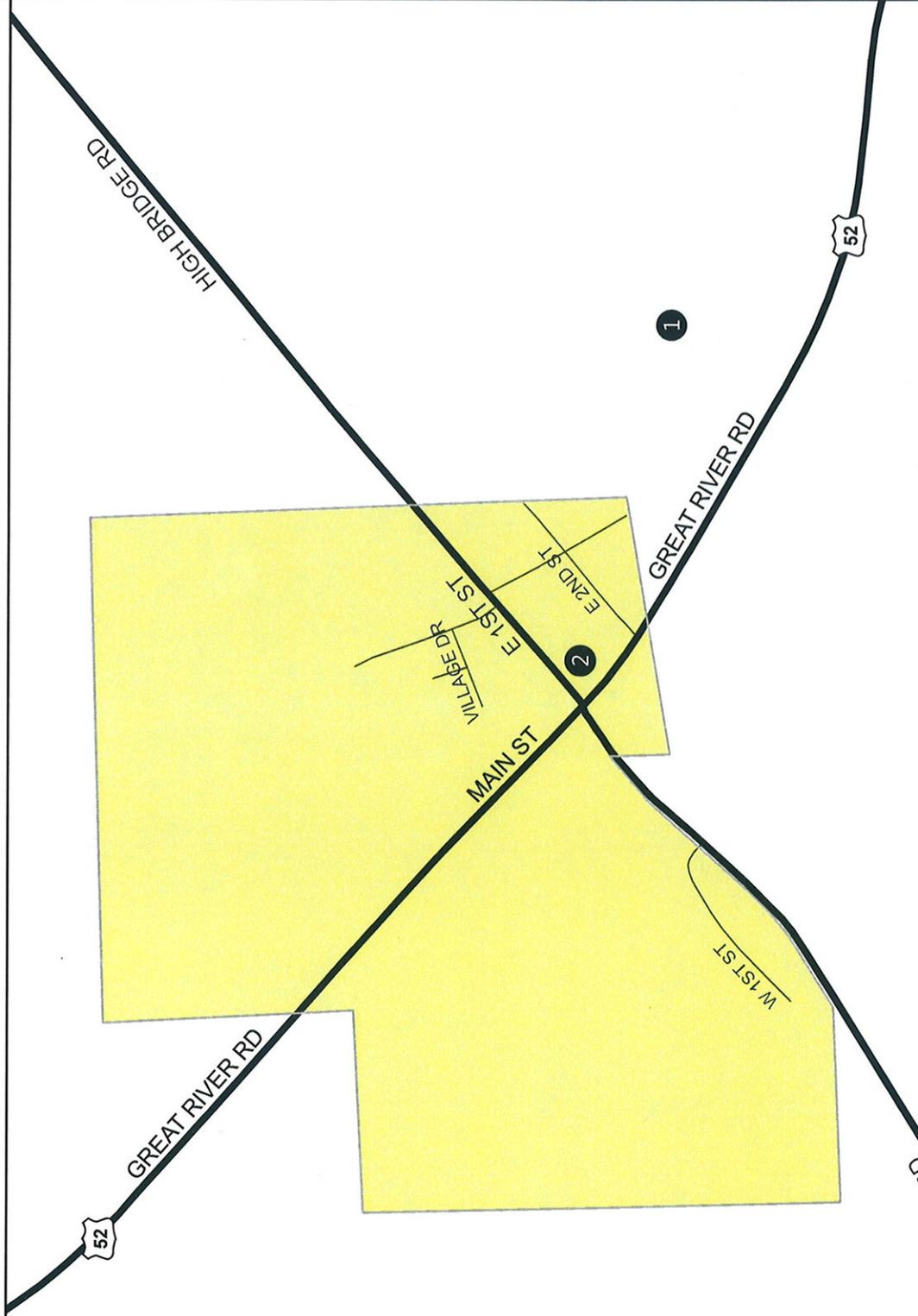


### Legend

 Corporate Boundary



# City of St Donatus Critical Facilities



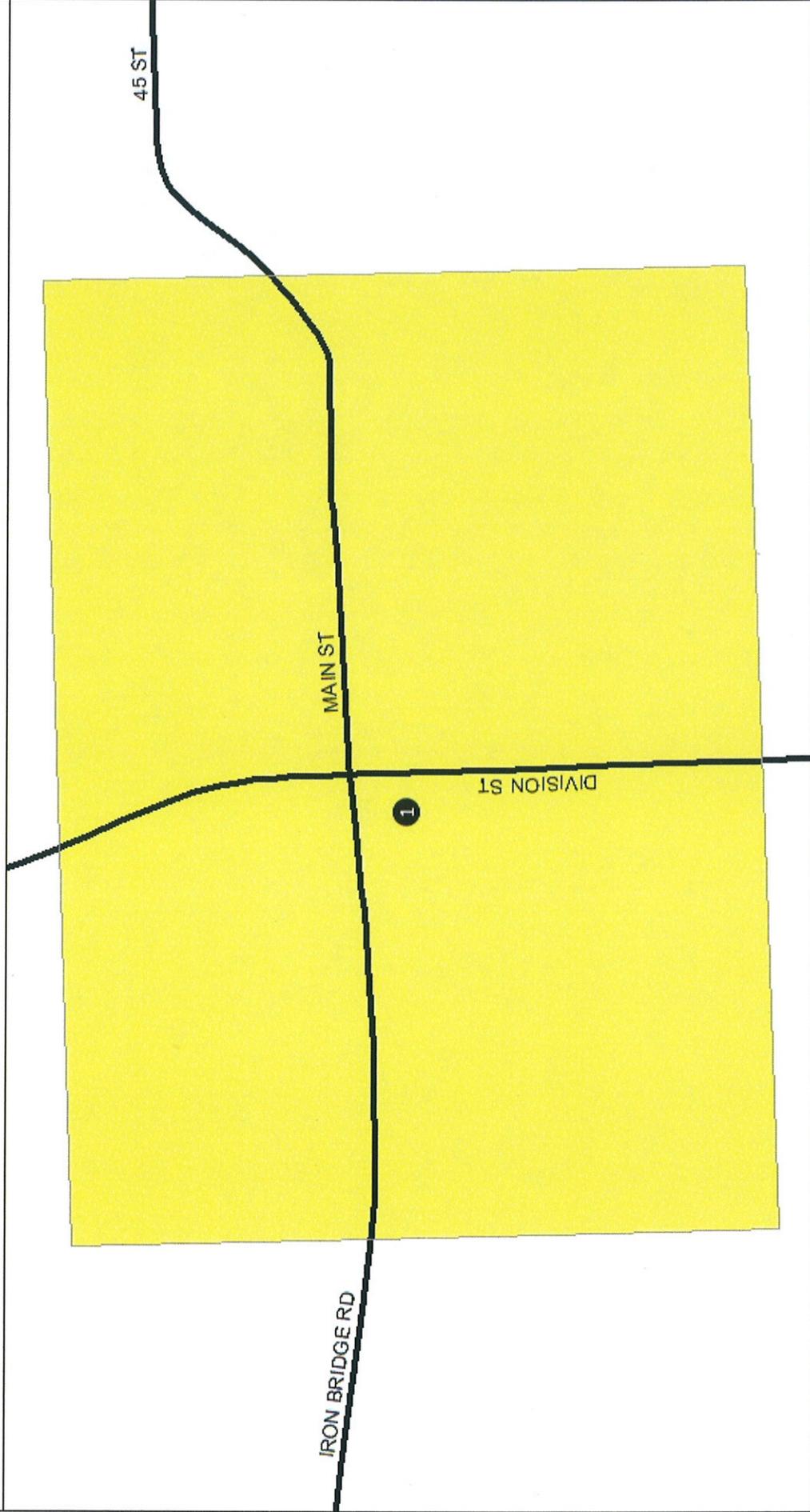
## Legend

- 1. Wastewater Treatment Plant
- 2. City Hall

 Corporate Boundary

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

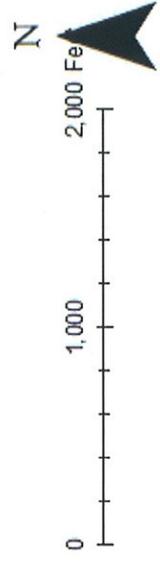
## City of Spragueville Critical Facilities



### Legend

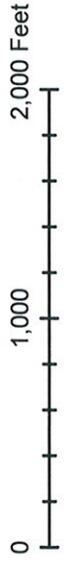
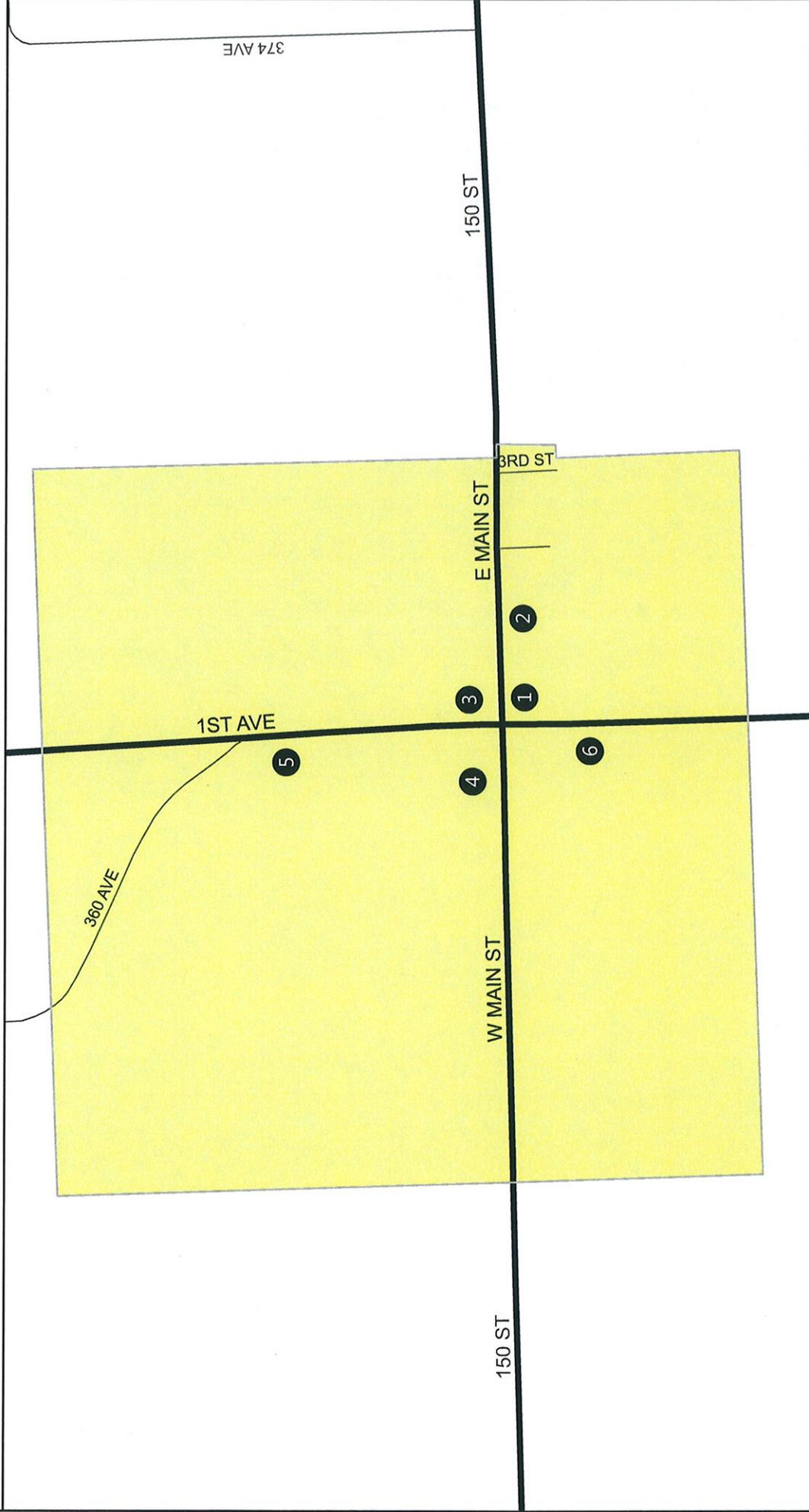
 Corporate Boundary

1. Community Center/City Hall



# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Springbrook Critical Facilities



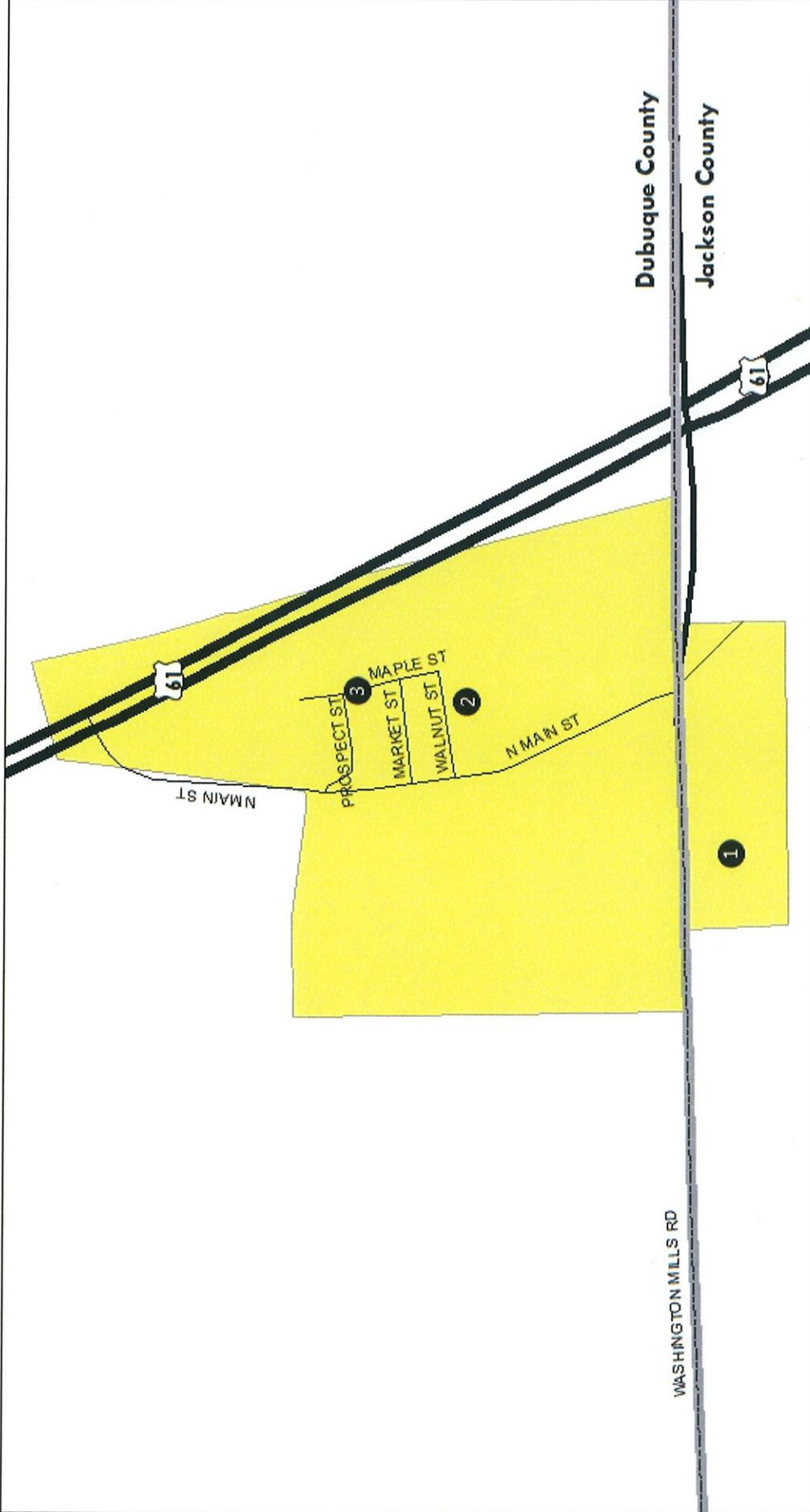
- 1. Springbrook Fire Station/City Hall
- 2. St Peter & Paul Church
- 3. Springbrook Country Dining Restaurant
- 4. City Water System
- 5. City Lift Station
- 6. City Lift Station

### Legend

 Corporate Boundary

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Zwingle Critical Facilities



### Legend

-  County Boundary
-  Corporate Boundary
- 1. Sandfilter System & Lift Station
- 2. Sandfilter Lift Station
- 3. City Hall Sandfilter Lift Station



Appendix G:

Jackson County  
Licensed Day Care Centers & Preschools

## Jackson County Daycare Centers

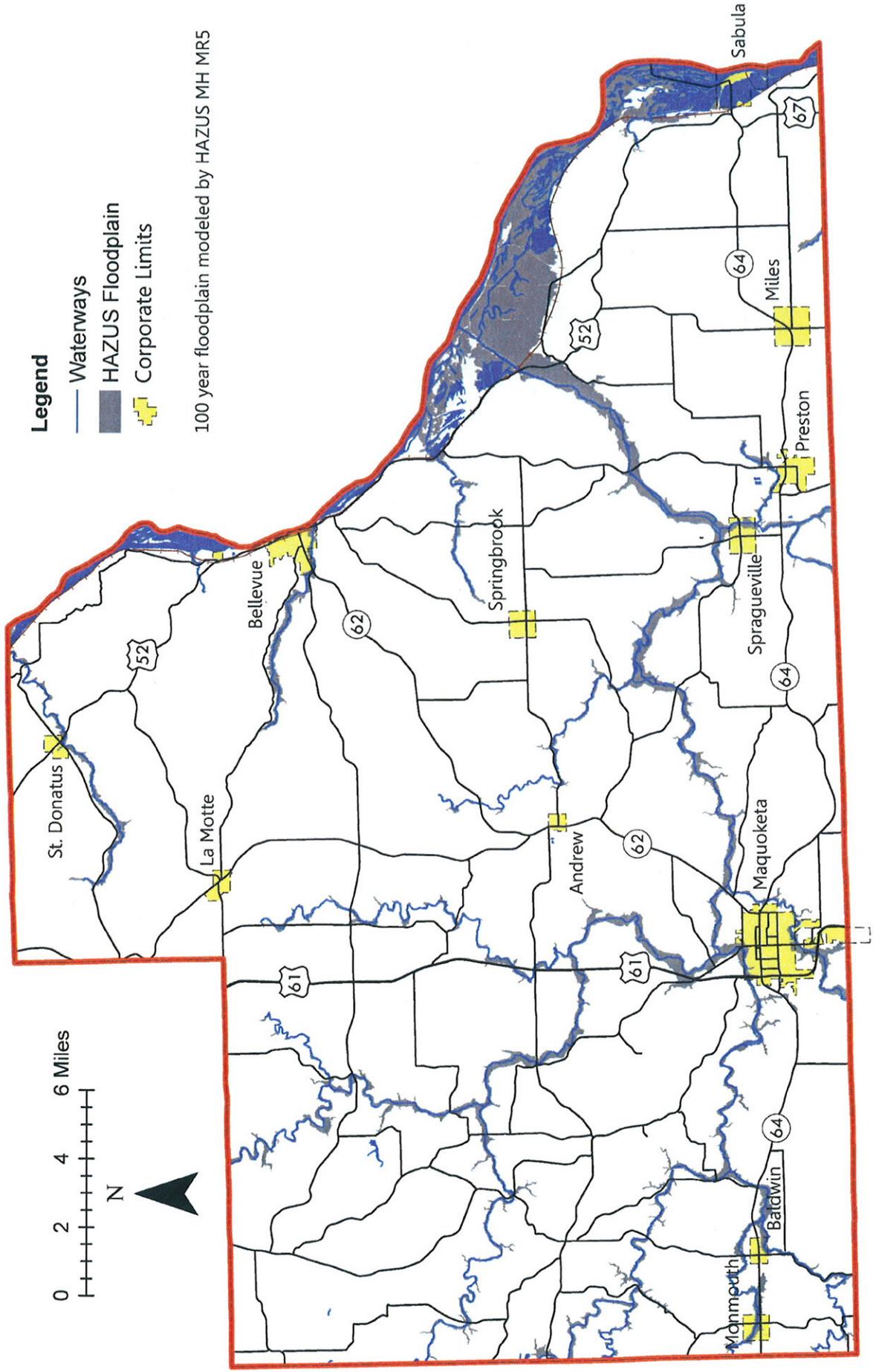
| Registered Daycare                    | Address                      | City         | Phone        |
|---------------------------------------|------------------------------|--------------|--------------|
| Giesemann, Becky                      | 300 North 3 <sup>rd</sup> St | Bellevue     | 563-872-4349 |
| Fondell, Suzanne & Jessalyn           | 1203 Mulberry St             | Bellevue     | 563-872-4522 |
| St. Joseph Childcare                  | 403 Park St                  | Bellevue     | 563-872-3285 |
| Wee Care Young People                 | 1 South Main                 | Preston      | 563-689-3350 |
| Bauer, Sarah                          | 123 South Division St        | Spragueville | 563-689-6381 |
| Kilburg, Charleen & Ambrosy, Jennifer | 24387 Mill Creek Rd          | LaMotte      | 563-773-8885 |
| Child Dev Inc-Sunshine                | 101 Creslane Dr              | Maquoketa    | 563-652-2847 |
| Christ, Charity                       | 414 Cynthia Dr               | Maquoketa    | 563-652-4709 |
| Evans, Donna                          | 410 Butternutt St            | Maquoketa    | 563-652-4625 |
| Howell, Katie                         | 104 North Walnut             | Maquoketa    | 563-652-4507 |
| Muhlhausen, Michelle & Kallie         | 105 East Maple St            | Maquoketa    | 563-652-4941 |
| Price, Helen                          | 216 North Olive St           | Maquoketa    | 563-652-1873 |
| Risden, Shirley                       | 206 North Olive St           | Maquoketa    | 563-652-2351 |
| Shady, Korene                         | 13820 188 <sup>th</sup> Ave  | Maquoketa    | 563-652-4550 |
|                                       |                              |              |              |
|                                       |                              |              |              |

Appendix H:

HAZUS 100-Year Flood Plain Maps

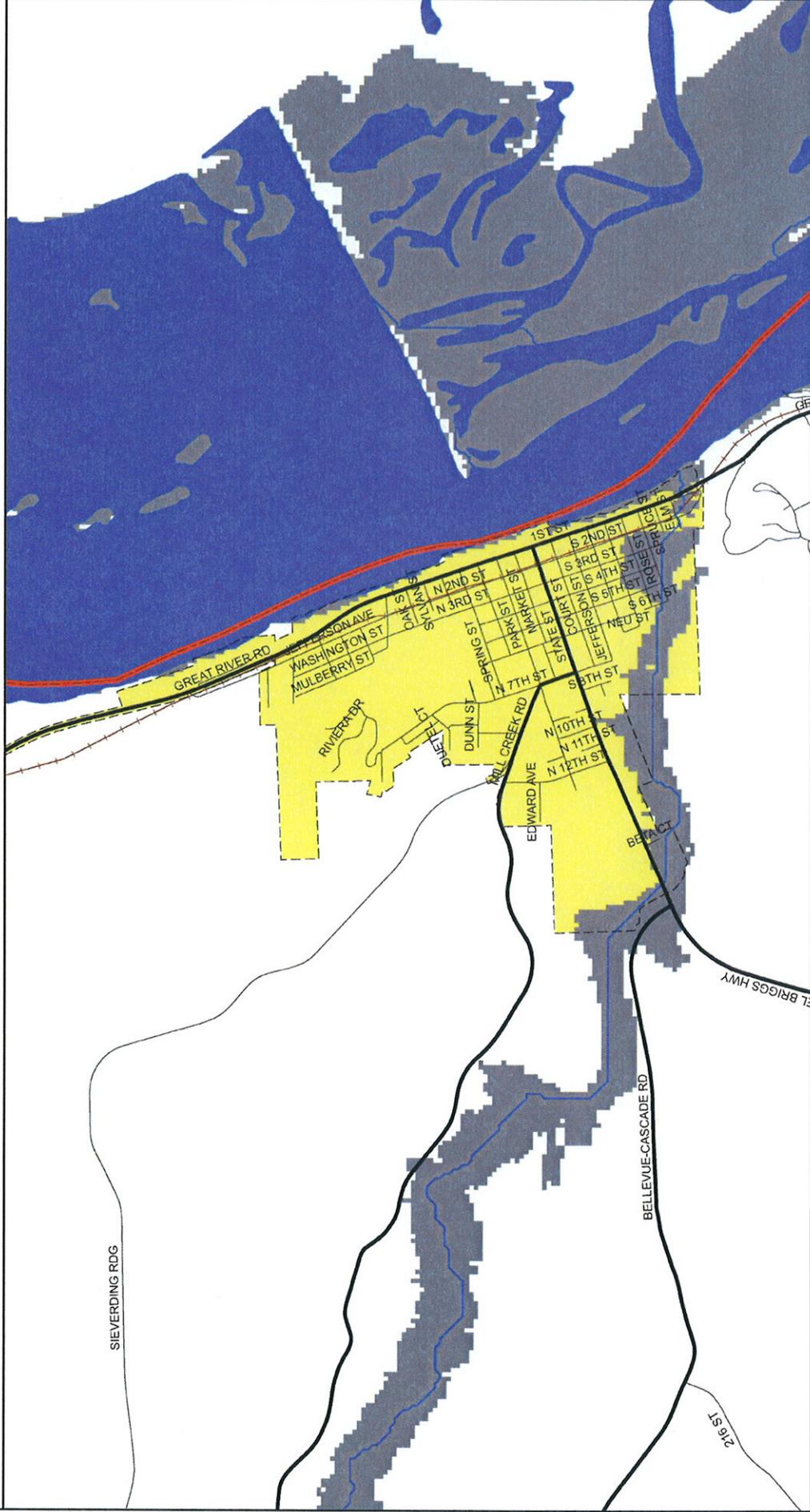
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## Jackson County HAZUS Floodplain



# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Bellevue HAZUS Floodplain



### Legend

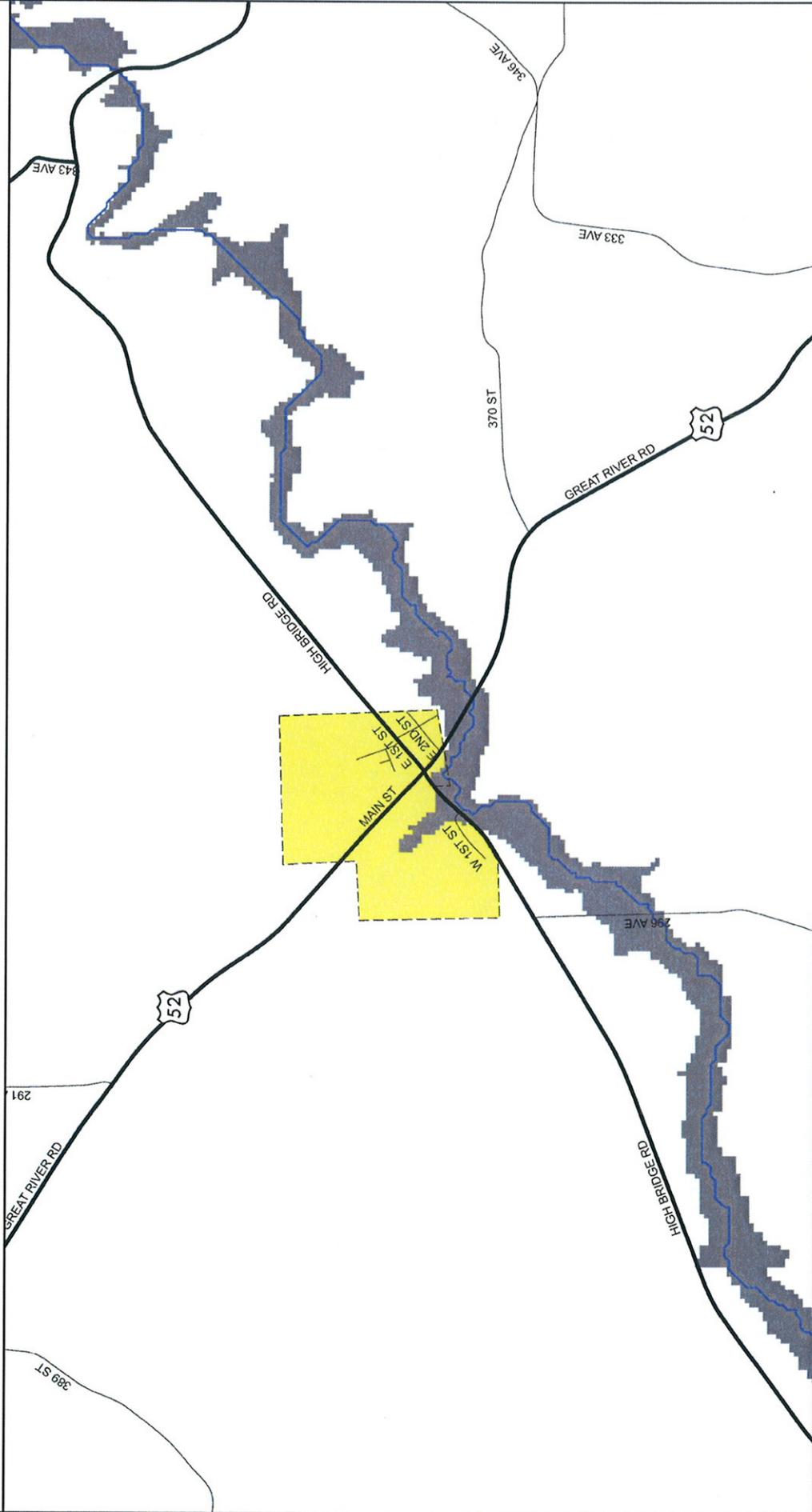
- Waterways
- HAZUS Floodplain
- Corporate Limits



100 year floodplain and waterways modeled by HAZUS MH MR5

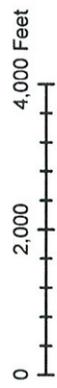
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of St. Donatus HAZUS Floodplain



### Legend

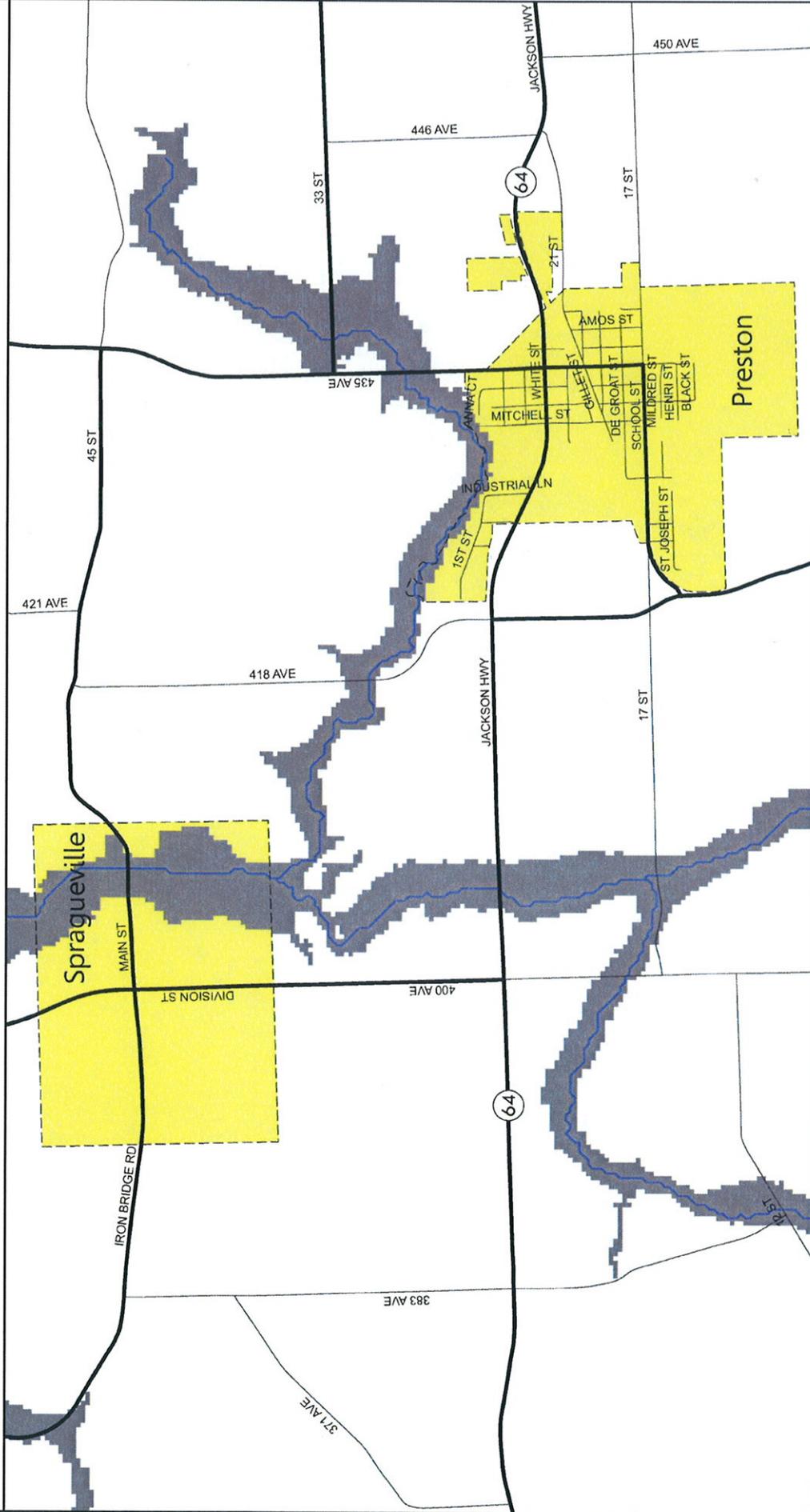
- Waterways
- HAZUS Floodplain
- Corporate Limits



100 year floodplain and waterways modeled by HAZUS MH MR5

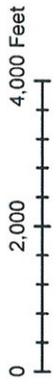
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## Cities of Preston & Spragueville HAZUS Floodplain



### Legend

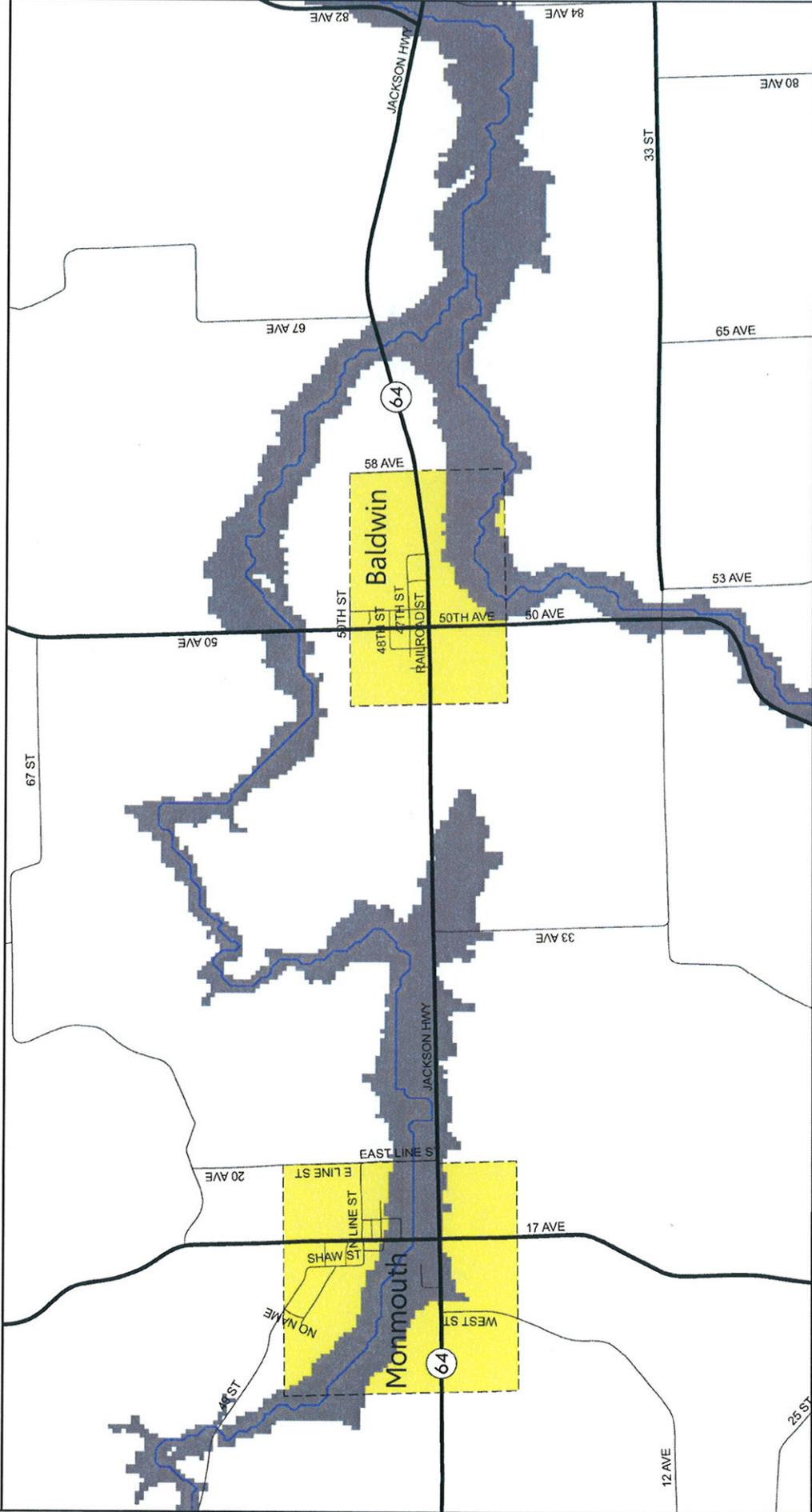
- Waterways
- HAZUS Floodplain
- Corporate Limits



100 year floodplain and waterways modeled by HAZUS MH MR5

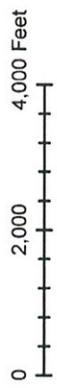
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## Cities of Monmouth & Baldwin HAZUS Floodplain



### Legend

- Waterways
- HAZUS Floodplain
- Corporate Limits



100 year floodplain and waterways modeled by HAZUS MH MR5

# Community Overview

|                               |             |
|-------------------------------|-------------|
| Community: MAQUOKETA, CITY OF | State: IOWA |
| County: JACKSON COUNTY        | CID: 190160 |

|  |  |                                  |
|--|--|----------------------------------|
| Program: Regular   | Emergency Entry: 09/10/1976            | Regular Entry: 08/05/1986        |
| Status: PARTICIPATING                                      |  | Status Effective: 09/12/1988     |
| Current Map: 08/05/1986                                    | Study Underway: NO                     | Level of Regs:                   |
| FIRM Status: ALL ZONE A, C AND X - NO ELEVATION DETERMINED |  | Initial FIRM: 08/05/1986         |
| FHBM Status: SUPERCEDED BY FIRM                            |  | Initial FHBM: 06/28/1974         |
| Probation Status:  |  |                                  |
| Probation Effective:                                       | Probation Ended:                       |                                  |
| Suspension Effective: 06/03/1988                           | Reinstated Effective: 09/12/1988       |                                  |
| Withdrawal Effective:                                      | Reinstated Effective:                  |                                  |
| CRS Class / Discount:                                      |  | Policies in Force: 5             |
| Effective Date:  |  | Insurance in Force: \$538,600.00 |
| CAV Date:  | Workshop Date:                         | No. of Paid Losses: 6            |
| CAC Date: 08/08/2008                                       | GTA Date:                              | Total Losses Paid: \$13,855.53   |
|  |  | Sub. Damage Claims Since 1978: 0 |
| <input type="checkbox"/> Tribal Community                  | <input type="checkbox"/> HMGP Projects |                                  |
| <input type="checkbox"/> Upton Jones Claims                | <input type="checkbox"/> FMA Projects  |                                  |
| <input type="checkbox"/> ICC Claims                        |  |                                  |

# Community Repetitive Loss

COMMUNITY : SABULA, CITY OF

|                        | AE, A1-30, AO,<br>AH, A | VE, V1-30, V | B, C, X     | TOTAL       |
|------------------------|-------------------------|--------------|-------------|-------------|
| RL Buildings (Total)   | 0                       | 0            | 1           | 1           |
| RL Buildings (Insured) | 0                       | 0            | 1           | 1           |
| RL Losses (Total)      | 0                       | 0            | 3           | 3           |
| RL Losses (Insured)    | 0                       | 0            |             | 3           |
| RL Payments (Total)    | \$ .00                  | \$ .00       | \$38,818.74 | \$38,818.74 |
| Building               | \$ .00                  | \$ .00       | \$27,142.56 | \$27,142.56 |
| Contents               | \$ .00                  | \$ .00       | \$11,676.18 | \$11,676.18 |
| RL Payments (Insured)  | \$ .00                  | \$ .00       | \$38,818.74 | \$38,818.74 |
| Building               | \$ .00                  | \$ .00       | \$27,142.56 | \$27,142.56 |
| Contents               | \$ .00                  | \$ .00       | \$11,676.18 | \$11,676.18 |

Post - FIRM SFHA RL Buildings: 0

Insured Buildings with 4 or More Losses: 0

Insured Buildings with 2-3 Losses > Building Value: 1

Total Target RL Buildings: 1

Appendix I:

Mitigation Measures from Previous Single Jurisdiction  
Mitigation Plans

# APPENDIX I

## How the HMPT Reviewed & Analyzed Each Section of Previous Plans

At each planning meeting, the HPT reviewed all of the past and current hazard mitigation plans for each jurisdiction and determined which sections would be kept and which would not be included in the updated plan. When the decision was made that the information was required and or important to the updated plan, the HPT carefully updated the information to be current and pertinent to the multi-jurisdictional plan.

| <b>Section</b>   | <b>Location in Updated<br/>Multi-Jurisdictional Plan</b> |
|--|--|
| Planning Process   | Chapter 2  |
| Summary of Planning Process  | Chapter 1  |
| Location of City   | Chapter 2  |
| Identifying Hazards  | Chapter 3  |
| Profiling of Hazards   | Chapter 3  |
| Hazard Analysis and Ratings  | Chapter 3  |
| Matrix of Hazard Values  | Chapter 3  |
| Mitigation Goals   | Chapter 4  |
| Prioritization of Activities                                       | Chapter 4  |
| Mitigation Strategies  | Chapter 4  |
| Monitoring, Evaluating and Updating Plan                           | Chapter 5  |
| Implementation through Existing Plans                              | Chapter 5  |
| Responsible Parties  | Chapter 5  |
| Continuing Public Involvement                                      | Chapter 5  |
| Plan Adoption  | Appendix D   |
| Appendix A: Planning Team  | Appendix A   |
| Appendix B-F: NOAA Records   | Appendix E   |
| Appendix G: Housing Units by Year Built                            | Not included   |
| Appendix H: Critical Facilities                                    | Chapter 3  |
| Appendix I: Resolution Approving & Adopting Hazard Mitigation Plan | Appendix D   |
| Appendix J: Notice of Public Hearings                              | Appendix B   |
| Appendix K: Region VII Crosswalk                                   | Not included   |
| Appendix L: Iowa Open Meetings Law                                 | Not included   |
| Appendix M: Letter Requesting Planning Team                        | Appendix B   |
| Appendix N: Copy of Public Notice                                  | Appendix B   |
| Appendix O: Copy of TOPO Map                                       | Not included   |
| Appendix P: Worksheets   | Not included   |

## Mitigation Measures from Previous Community Mitigation Plans

The tables below reflect the status of mitigation measures (or action items) from individual community Hazard Mitigation Plans at the time the Jackson County Multi-Jurisdictional Hazard Mitigation Plan was developed. The cities of Baldwin, Miles, Monmouth, and the Unincorporated County did not have hazard mitigation plans and therefore are not included in this update. All jurisdictions have completed several action items. Several other action items are considered “ongoing” and many have been carried over as action items in the new, multi-jurisdiction plan.

C = Complete

I = Incomplete

O = Ongoing

IP = In Process

N/A = No longer applicable

### Andrew - 2009

| Number | Mitigation Action  | Status |
|--------|--|--------|
| 1      | Continue to maintain and enforce snow removal policy.  | O      |
| 2      | Maintain backup generators to provide electricity in event of power outage.  | O      |
| 3      | Replace 1992 1-ton snow plow with newer, more efficient model.   | C      |
| 4      | Continue quarterly newsletter to relay information, announcements and warnings about the dangers of severe winter storms.                          | C      |
| 5      | Make fire station temporarily available to individuals suffering from the effects of severe winter weather.  | C      |
| 6      | Consider the building of a safe room in conjunction with any new city building projects...And in the meantime, continue “shelter in place” policy. | O      |
| 7      | Purchase bunker gear and air packs for 15 fire/rescue personnel.   | O      |
| 8      | Replace tanker truck with newer model with up-to-date safety features for better response to fire/rescue situations.                               | C      |
| 9      | In the event of serious damage from future flash flooding, upgrade storm sewers and culverts as needed.  | O      |
| 10     | In the event of serious damage from future flash flooding, elevate or acquire structures in the path of repeat flooding.                           | O      |
| 11     | In the event of serious damage from future flash flooding, and if deemed appropriate, add lift stations.   | O      |
| 12     | Continue to refer persons suffering from the effects of Extreme Heat to Jackson County Medical Center, Maquoketa.                                  | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**Bellevue - 2009**

| Number | Mitigation Action   | Status |
|--------|---|--------|
| 1      | Continue to maintain snow removal policy.   | O      |
| 2      | Provide announcements to local cable channel and radio.   | O      |
| 3      | Continue to maintain a list of people on oxygen in the event of a power outage.   | O      |
| 4      | Continue to maintain backup generators.   | O      |
| 5      | Create access from one side of city to the other when railroads are blocking all access. Currently can take up to 10 minutes for each (of approximately 8 trains per day) to pass through city.                 | I      |
| 6      | Continue maintenance on sirens and perform routine checks for the safety of all current and future buildings and people.  | O      |
| 7      | Continue to improve public knowledge of the City's warning system and enhance the City's current TV warning system.   | C      |
| 8      | Continue to maintain list of shelter spaces for emergency evacuations.  | O      |
| 9      | Continue to make City facilities available to people for protection during tornado watch/warning.   | O      |
| 10     | Explore possibility of working with manufactured home park owner south of town to build a community safe room.  | I      |
| 11     | Obtain a FEMA-approved Hazard Mitigation Plan.  | C      |
| 12     | Continue enforcement of flood plain ordinances.   | O      |
| 13     | Continue to monitor effectiveness of FEMA recommended water sump pumps for homes that have repeated backup in basements. And continue to offer \$500 rebates from municipal utilities for back flow preventers. | O      |
| 14     | In the event of serious damage from future flash flooding, reinforce culverts to counteract washouts, elevate or acquire structures in the path, and if deemed appropriate, add lift stations.                  | O      |
| 15     | Continue to improve awareness through public service announcements of Cable TV and radio or newsletters.  | O      |
| 16     | Maintain a recovery plan for victims suffering from extreme heat conditions.  | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**LaMotte - 2007**

| Number | Mitigation Action  | Status |
|--------|--|--------|
| 1      | Discourage building development in flood plain areas.  | O      |
| 2      | Continue to maintain the existing outdoor weather siren as an early warning signal for tornadoes.  | O      |
| 3      | Encourage local fire department to continue training of weather spotters for early warning to residents of tornado.                                    | O      |
| 4      | Promote the use of NOAA indoor weather radios by residents in the community to assist in appropriate planned responses to a tornado event.             | C      |
| 5      | Continue to enforce snow removal policy.   | O      |
| 6      | Continue to utilize the existing snow removal equipment for removal of snow during winter storms.  | O      |
| 7      | Continue to train First Responders and EMTs on a monthly basis.  | O      |
| 8      | Continue to train fire personnel for Firefighter I certification and awareness.  | O      |
| 9      | Continue to participate in conducting fire drills during Fire Prevention Week at the daycare.  | O      |
| 10     | Continue to participate in the Hazardous Materials 28E Agreement with Jackson County through the Davenport Fire Department's Hazardous Materials Team. | O      |
| 11     | Continue to maintain records of facility inventories of stored hazardous materials.  | O      |
| 12     | Continue training on the handling of hazardous materials through the local fire department.  | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**Maquoketa**

| Number | Mitigation Action  | Status |
|--------|--|--------|
| 1      | Maintain, enforce and update floodplain ordinances as needed.  | O      |
| 2      | Install river level flood gauge in the Maquoketa River north of the City to provide advance warning of flooding from the north.            | I      |
| 3      | Maintain and improve early warning sirens or signals, including the addition of two new sirens.  | IP     |
| 4      | Improve public awareness of potential risks of tornadoes through education programs.   | I      |
| 5      | Adopt plan for Maquoketa Municipal Electric Utility (MMEU) to recover from power loss or down power lines.                                 | I      |
| 6      | Consider the adoption of a minimum building code to lessen property damage (new construction) from strong winds and severe winter weather. | I      |
| 7      | Maintain Hazardous Materials Agreement with the Davenport Fire Department Materials Team.  | O      |
| 8      | Review, develop and revise evacuation plans with local fire and police departments.  | I      |
| 9      | Review existing policies and practices related to hazard regulation.   | I      |
| 10     | Provide training on a regular basis with local fire departments, police and emergency personnel.   | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**Preston**

| Number | Mitigation Action  | Status |
|--------|--|--------|
| 1      | Continue to install a new storm sewer including curb and gutter in east side of community.                           | IP     |
| 2      | Continue to maintain and improve the outdoor weather warning siren.  | O      |
| 3      | Continue to improve public awareness of the potential risks of hazards.  | O      |
| 4      | Acquire a rotational outdoor weather warning siren system through Federal and State funded programs.                 | I      |
| 5      | Provide NOAA indoor weather radios to citizens in the community.   | O      |
| 6      | Continue to utilize underground burial of power lines in new subdivisions.   | O      |
| 7      | Upgrade snow removal equipment.  | O      |
| 8      | Maintain a list of persons in the community vulnerable to severe weather.  | O      |
| 9      | Continue to train fire department personnel on a monthly basis.  | O      |
| 10     | Continue to offer education awareness programs to elementary students during Fire Prevention Week.                   | O      |
| 11     | Continue to participate in Hazardous Materials 28E Agreement with Davenport Fire Department's Hazard Materials Team. | O      |
| 12     | Continue to train fire, police and ambulance personnel at awareness level for handling hazardous materials.          | O      |
| 13     | Continue to utilize services of Bear Creek Narcotics Task Force.   | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**Sabula**

| Number | Mitigation Action   | Status |
|--------|---|--------|
| 1      | Consturct a new flood pump station through application to IDDED for CDBG Grant.                                     | O      |
| 2      | Purchase a trailer mounted alternate pump for City's storm pump.  | O      |
| 3      | Purchase erosion protection matting and material for south level.   | IP     |
| 4      | Install storm drain around 900 block of Cottage Street.   | N/A    |
| 5      | Purchase backup generator for City Hall   | I      |
| 6      | Continue to maintain and improve the outdoor warning system.  | O      |
| 7      | Continue to educate the public of appropriate response to hazards.  | O      |
| 8      | Continue to train weather spotters through local fire department.   | O      |
| 9      | Evaluate and monitor potential risks with utility placements.   | O      |
| 10     | Remove dead trees, trim trees and clean areas vulnerable to high winds.   | O      |
| 11     | Continue to improved coordination with power companies in response to downed power lines.                           | O      |
| 12     | Continue to trim dead or weak tree branches from trees throughout the City.   | O      |
| 13     | Upgrade snow removal equipment.   | O      |
| 14     | Continue to maintain and improve protocol for response to ice storms.   | O      |
| 15     | Upgrade fire equipment.   | O      |
| 16     | Continue to train fire department personnel   | O      |
| 17     | Provide security fencing, surveillance camera equipment, backup generator and/or alarm systems for small utilities. | O      |
| 18     | Continue to participate in Hazardous Materials 28E Agreement.   | O      |
| 19     | Continue to educate the public in identifying indicators of hazardous materials.                                    | O      |
| 20     | Continue to educate and train fire and police personnel in identification and handling hazardous materials.         | O      |
| 21     | Continue to support the offer of public facilities to counter extreme temperatures.                                 | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**St. Donatus - 2009**

| Number | Mitigation Action   | Status |
|--------|---|--------|
| 1      | Continue to maintain snow removal policy.   | O      |
| 2      | Purchase mobile backup generator to provide electricity in the event of a power outage.   | O      |
| 3      | Consider the possibility of building a community safe room in conjunction with any future government building projects.   | O      |
| 4      | Purchase outdoor weather siren for safety of all citizens.  | O      |
| 5      | Discourage development in flood plain areas.  | O      |
| 6      | Install storm sewers for entire town, with West First Street a priority.  | O      |
| 7      | Designate community shelters in the event of homes being flooded.   | O      |
| 8      | In the event of serious damage from flash flooding, elevate or acquire structures in the path, reinforce culverts to counteract washouts, or add lift stations if deemed appropriate. | O      |

**Spragueville - 2009**

| Number | Mitigation Action   | Status |
|--------|---|--------|
| 1      | Acquire an outdoor weather warning siren.   | O      |
| 2      | Acquire a permanent backup power generator at the community center.                                     | O      |
| 3      | Improve public awareness of potential risk of natural hazards by distribution of flyers to citizens.    | O      |
| 4      | Maintain a storm debris cleanup plan.   | O      |
| 5      | Maintain a recovery plan for victims suffering from heat by accommodating them at the community center. | O      |
| 6      | In the event of repeat flood damage, acquire or elevate structures in the hazard path.                  | O      |

C = Complete  
 I = Incomplete  
 O = Ongoing  
 IP = In Process  
 N/A = No longer applicable

**Springbrook - 2009**

| Number | Mitigation Action  | Status |
|--------|--|--------|
| 1      | Promote the use of NOAA indoor weather radios by residents in the community to assist in appropriate planned responses to tornado events.  | O      |
| 2      | Improve public awareness of the potential risk of natural hazards through utility bill notices.  | O      |
| 3      | Continue to train weather spotters for spotting tornadoes.   | O      |
| 4      | Continue to maintain the two outdoor warning system sirens to assure operability as an alert system to reduce damages to existing as well as new buildings and infrastructure in the event of a tornado. | O      |
| 5      | Implement a plan for generator power for city water.   | O      |
| 6      | Continue to coordinate recovery of downed power lines with Alliant Energy, local fire department personnel and law enforcement personnel.  | O      |
| 7      | Continue to maintain snow removal with private contractor.   | O      |
| 8      | Continue to train fire department personnel for Firefighter I Cert and Awareness Level Training.   | O      |
| 9      | Upgrade fire equipment through grant applications for Federal, State and private funding.  | O      |
| 10     | Continue to maintain the 28E Contract with the Davenport Fire Department's Hazardous Materials Team.   | O      |
| 11     | Continue to maintain a record of SARA Tier II facilities that contain hazardous materials.   | O      |
| 12     | In the event of extreme temperatures, the City will accommodate citizens at the Springbrook Fire Station.  | O      |

**Zwingle**

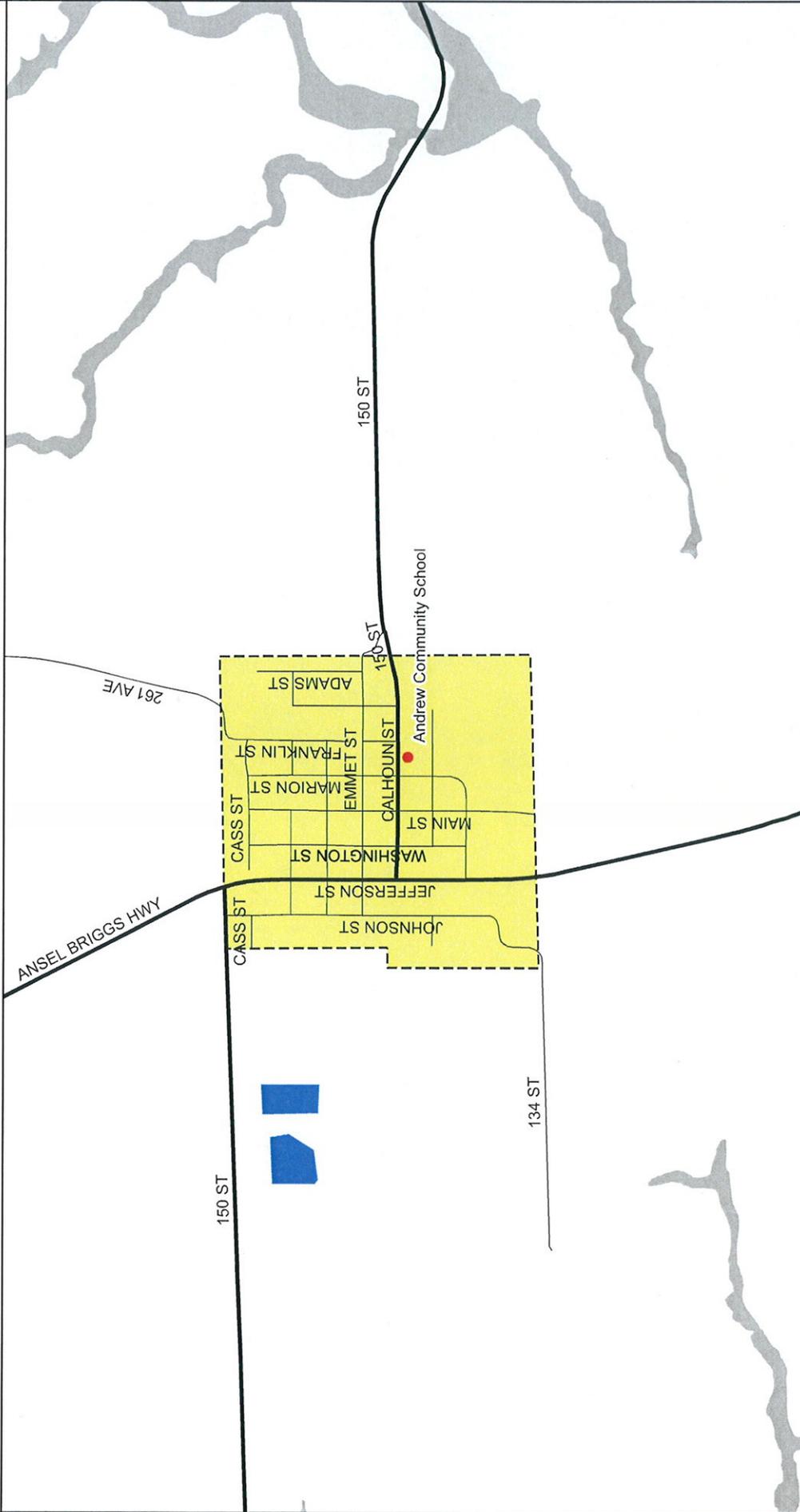
| Number | Mitigation Action   | Status |
|--------|---|--------|
| 1      | Install 1 outdoor weather siren as early warning signals to alert individuals of tornadoes. | I      |
| 2      | Continue to maintain and enforce snow removal policy.                                       | O      |
| 3      | Improve public awareness through educational programs.                                      | IP     |
| 4      | Develop an evacuation plan as referenced out of the Multi-Hazard Plan.                      | IP     |
| 5      | Review existing policies and practices related to hazard regulation.                        | O      |
| 6      | Provide ongoing community awareness and education programs.                                 | O      |

## Appendix J:

Overlay maps of school structures and HAZUS flood zone

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Andrew Schools



● Schools

500-year Floodplain

100-year Floodplain

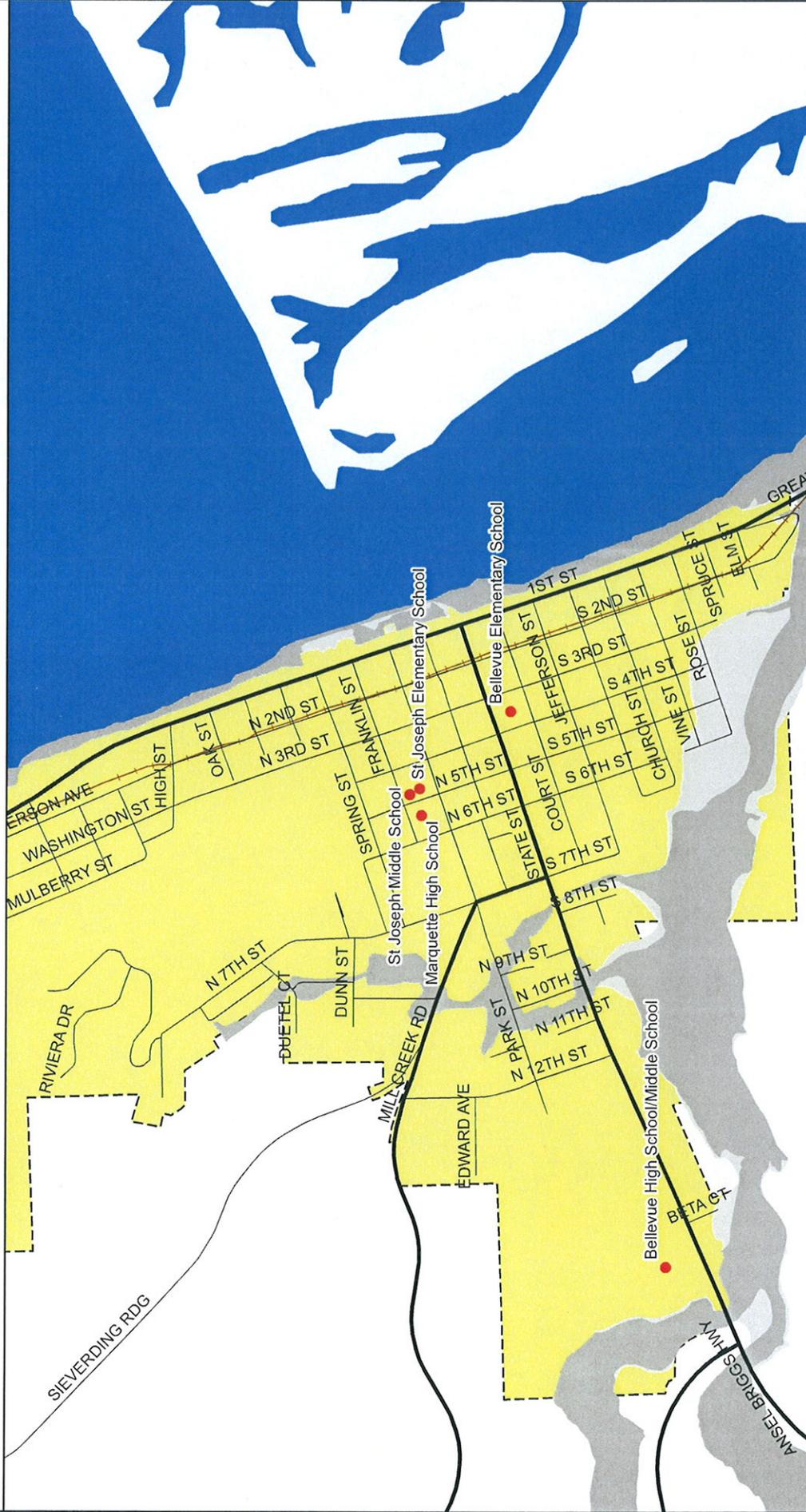
Corporate Boundary



Floodplain source: FEMA Digital FIRM

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Bellevue Schools



● Schools

■ 500-year Floodplain

■ 100-year Floodplain

■ Corporate Boundary

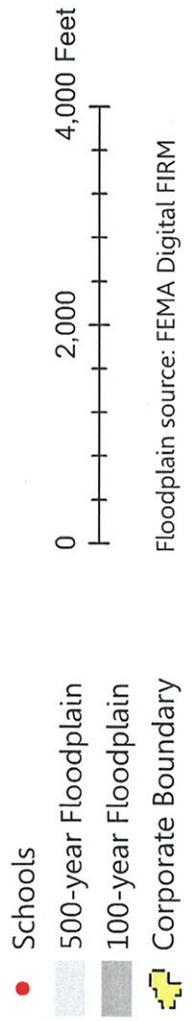
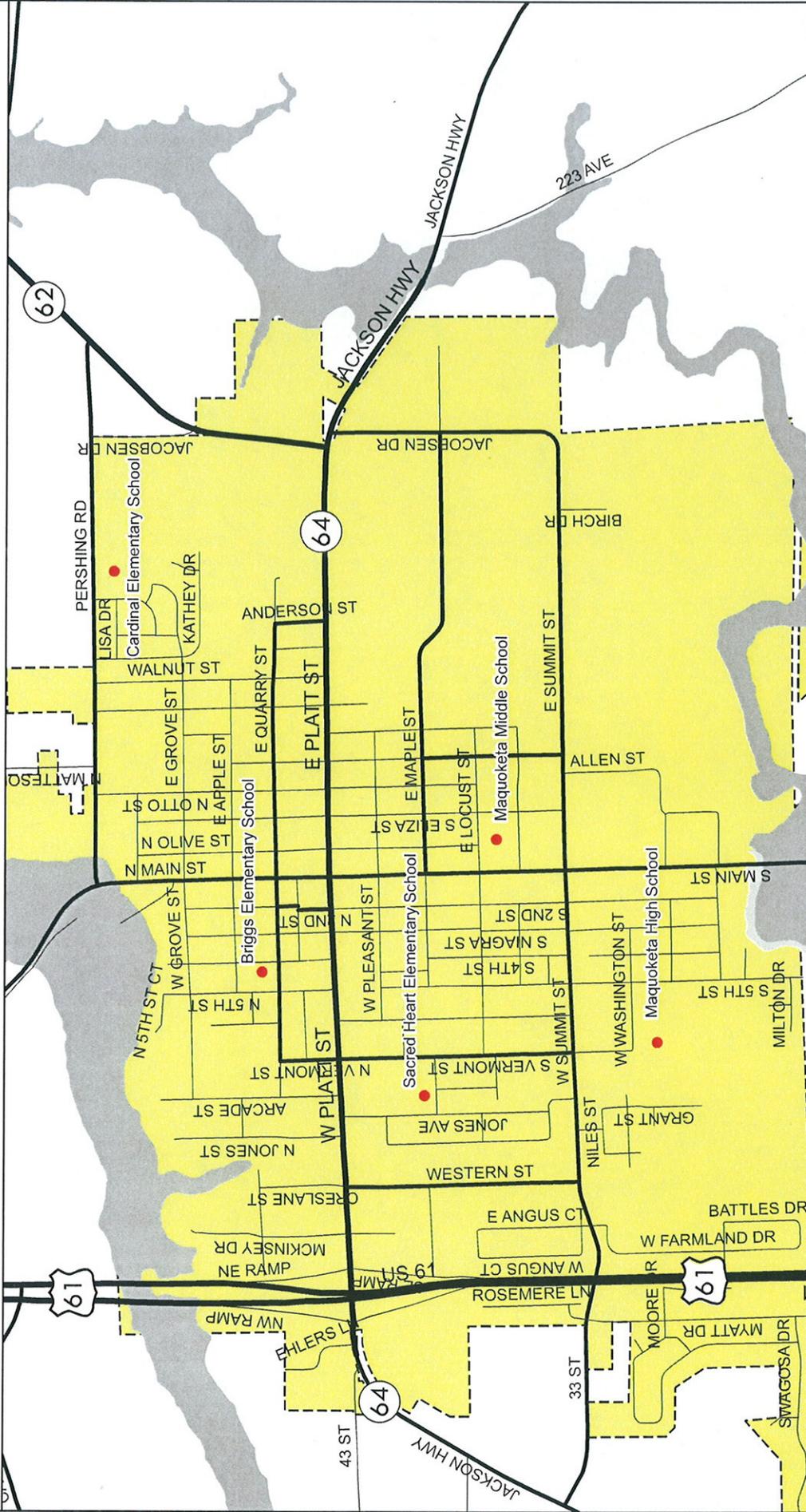
0 2,000 Feet



Floodplain source: FEMA Digital FIRM

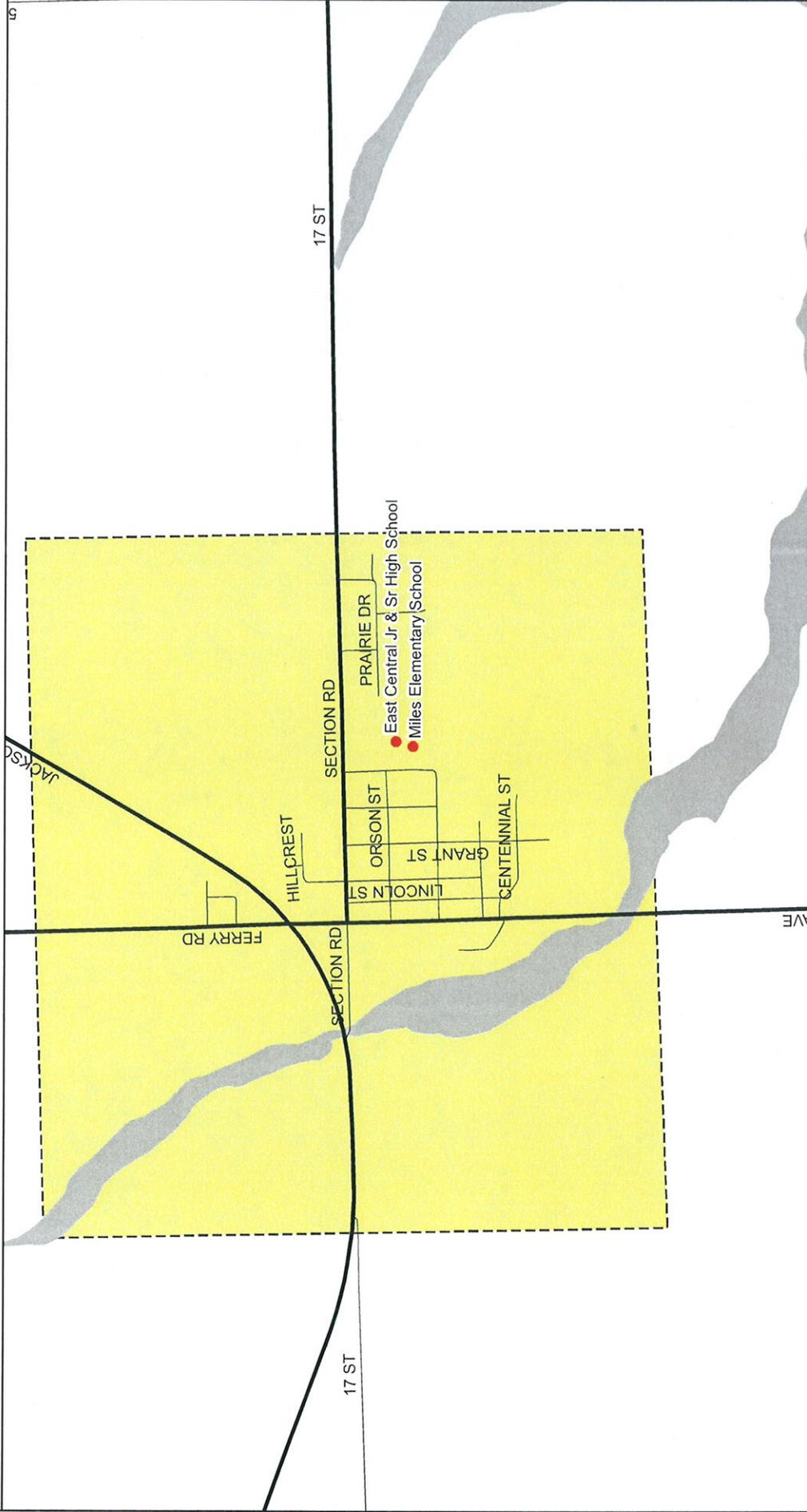
# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Maquoketa Schools



# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

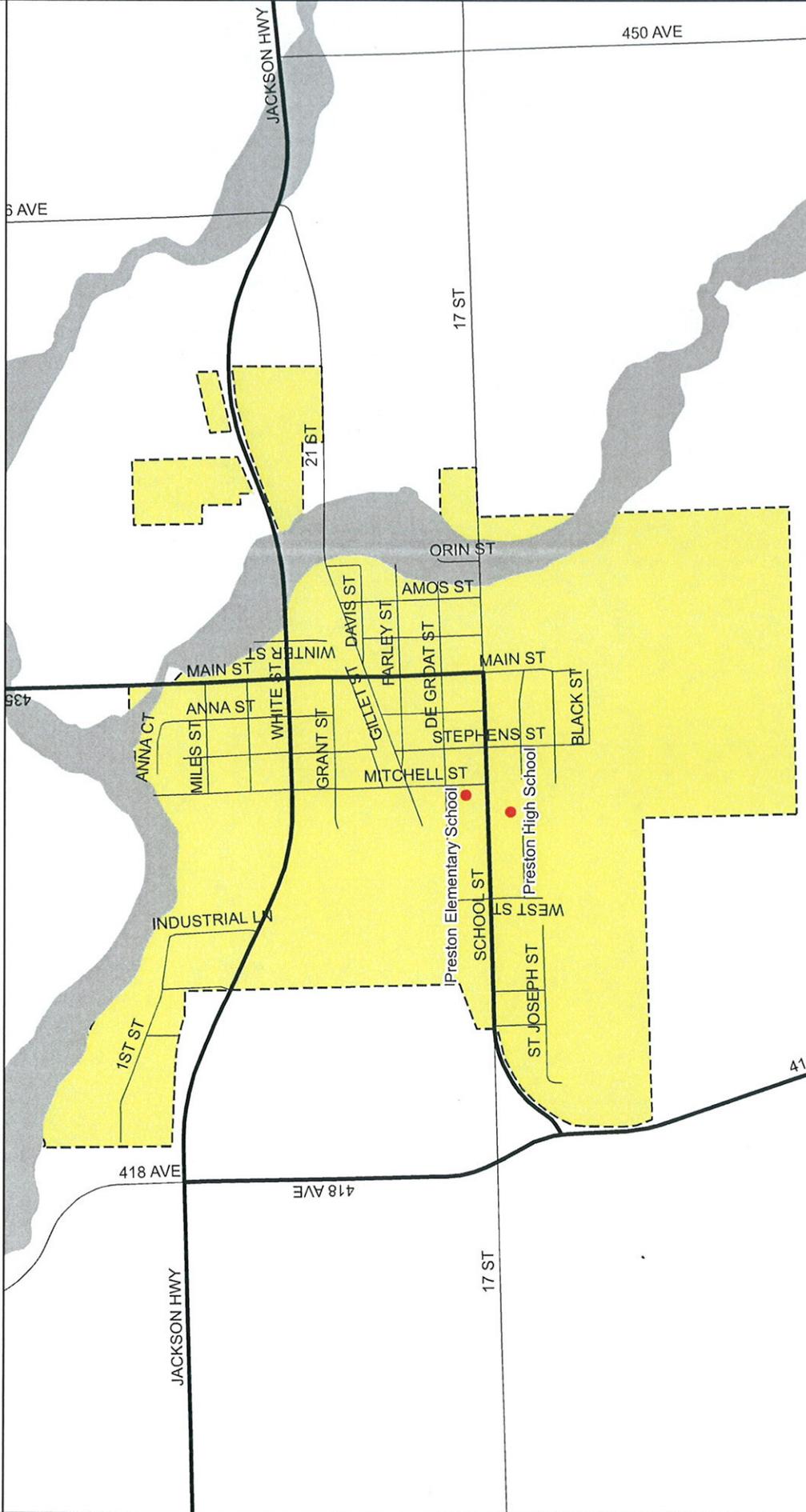
## City of Miles Schools



- Schools
  - 500-year Floodplain
  - 100-year Floodplain
  - Corporate Boundary
- Floodplain source: FEMA Digital FIRM

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Preston Schools

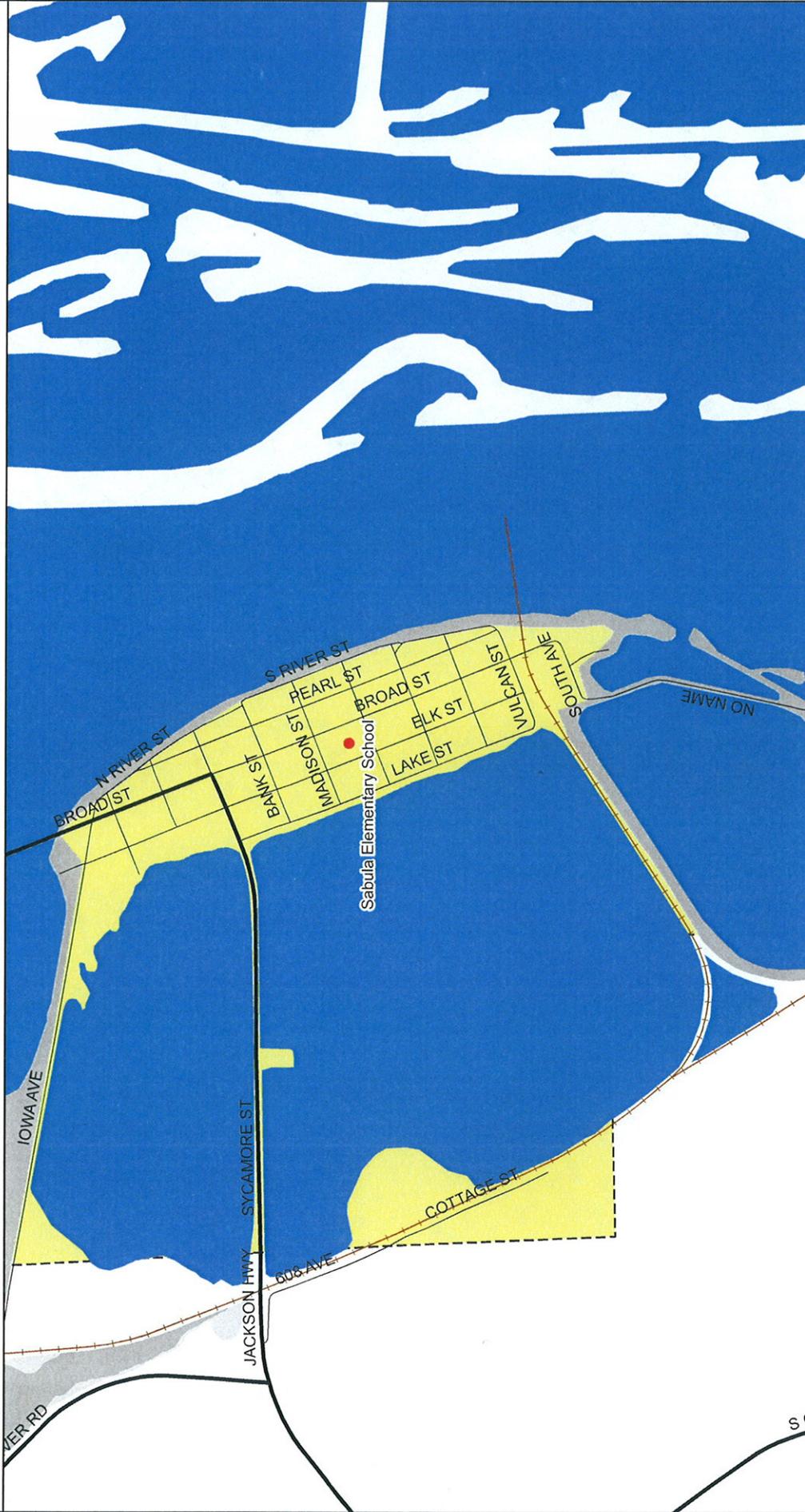


- Schools
- 500-year Floodplain
- 100-year Floodplain
- Corporate Boundary

Floodplain source: FEMA Digital FIRM

# Jackson County Multi-Jurisdictional Hazard Mitigation Planning

## City of Sabula Schools



- Schools
- 500-year Floodplain
- 100-year Floodplain
- Corporate Boundary



Floodplain source: FEMA Digital FIRM