

# **Dubuque County Multi-Jurisdictional Multi-Hazard Mitigation Plan**

**2012**

Developed by ECIA, Dubuque, Iowa

Homeland Security and Emergency Management Programs

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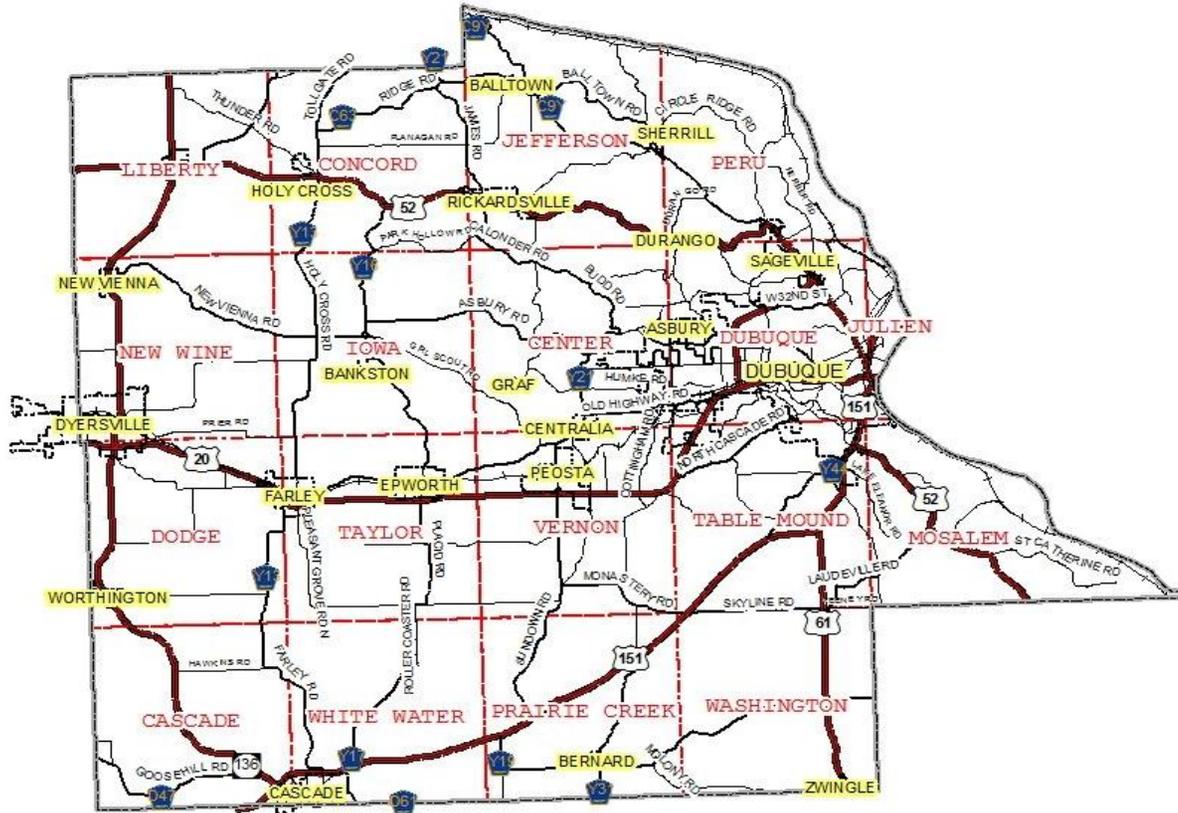
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# Dubuque County Planning Area &

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Multi-Jurisdictional Hazard Mitigation Plan

# Jurisdictions



Dubuque County  
Multi-Jurisdictional Hazard Mitigation Plan

## 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. Dubuque 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 Dubuque County, identifies natural hazards and risks within the vulnerability and make the communities of Dubuque 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 will be adopted and resolutions included for each participating jurisdiction after preliminary approval from the Iowa Homeland Security and Emergency Management Division (IAHSEMD) and the Federal Emergency Management Agency.)

If a jurisdiction had an existing single jurisdiction hazard mitigation plan in place at the time of submission for review, the date the plan was approved is noted.

JURISDICTION	APPROVAL DATE OF PREVIOUS PLAN
Dubuque County, Lead Jurisdiction	02/08/2011
City of Asbury	10/16/2009
City of Balltown	No plan
City of Bankston	10/07/2009
City of Bernard	03/31/2009
City of Cascade	07/11/2005
City of Centralia	2003
City of Dubuque	01/27/2011
City of Durango	No plan
City of Dyersville	03/25/2011
City of Epworth	06/23/2005
City of Farley	06/29/2005
City of Graf	06/03/2008
City of Holy Cross	11/09/2010
City of Luxemburg	12/07/2009
City of New Vienna	07/14/2009
City of Peosta	06/16/2009
City of Rickardsville	2003
City of Sageville	02/02/2007
City of Sherrill	05/29/2009
City of Worthington	07/09/2009
City of Zwingle	2002
Dubuque School District	No plan
Western Dubuque School District	No plan

## 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 Dubuque County in the preparation of the mitigation plan, the State of Iowa Homeland Security and Emergency Management Division (IAHSEMD) (IDEM) awarded a contract to Dubuque County who in turn contracted with East Central Intergovernmental Association (ECIA). ECIA's role is to assist Dubuque 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 Dubuque 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 Dubuque 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 Dubuque County Emergency Management Agency serving as the contact agency. ECIA, in conjunction with Dubuque 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 Dubuque County Hazard Mitigation Planning Team (HMPT)
- Participate in HMPT meetings
- 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 a table that shows the attendance of representatives at each HMPT meeting including sign-in sheets and agendas.

### 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.**

At the initial kickoff meetings, attendees discussed methods that are routinely used to engage the public in Dubuque County. Examples included e-mail to parents of students in the public school districts and informational notes included on local utility bills. Many members of the group also suggested the use of websites and newsletters.

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.

The County placed Public Notices that the plan draft was available for review and comment at the Dubuque County Court House from July 1, 2012 to July 31, 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, Linn, Buchanan, Fayette and Clayton 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, Dubuque 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.

## **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 Dubuque 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 that *have occurred*,

*potentially could occur* or are *unlikely to occur* within Dubuque 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 to 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 Dubuque 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 Dubuque 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 June 5, 2012.

### **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 profiled 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 Dubuque 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 Dubuque County website for review and comment by the public and other agencies and interested stakeholders from July 1 – 31, 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 (HSEMD) 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 June 5, 2012 meeting. This strategy is described in Chapter 5.

## CHAPTER 2: PLANNING AREA DESCRIPTIONS & CAPABILITIES

### 2.1 Dubuque County Planning Area

#### History

The population of Dubuque County was 93,653 in the 2010 census, an increase from 89,143 in the 2000 census. The county seat is the city of Dubuque. Dubuque County is coterminous with the Dubuque, Iowa Metropolitan Statistical Area, and is the seventh largest county by population in the state. It is named for Julien Dubuque, the first European settler of Iowa. It is one of Iowa's two original counties along with Des Moines County; both were organized by the Michigan Territorial legislature in 1834.

The city of Dubuque was chartered in 1833 as the first city in Iowa.

#### Geography

According to the 2000 census, the county has a total area of 616.56 square miles, of which 608.16 square miles (or 98.64%) is land and 8.41 square miles (or 1.36%) is water.

The county seat is Dubuque, Iowa, which is located along the Mississippi River in the east-central portion of the county. Eastern Dubuque County is markedly different from the western portion in that its topography is very uneven. The city of Dubuque and surrounding areas adjacent to the Mississippi River have many steep hills, bluffs, and ravines. Also, the eastern portion is more heavily wooded than the west, which is mostly rolling farmland.

Dubuque County is widely-known for its impressive bluffs along the Mississippi River, which run along the entire length of the county's riverbanks. These form part of Iowa's Coulee Region, otherwise known as the Driftless Area. During the last ice age, much of the Mississippi Valley near Dubuque County was bypassed by glacial flows, which flattened the surrounding land in eastern Illinois, Wisconsin, and western Iowa, leaving the Driftless Area unusually rugged.

#### Major highways

-  US Highway 20
-  US Highway 52
-  US Highway 61
-  US Highway 151
-  Iowa Highway 3
-  Iowa Highway 32
-  Iowa Highway 136

## Demographics

Below is a chart comparing the population of Dubuque County and the State of Iowa from 1950 to 2010.

<b>Year</b>	<b>Dubuque County</b>	<b>% of Change</b>	<b>State of Iowa</b>	<b>% of Change</b>	<b>County as % of State</b>
1950	71,337	11.9	2,621,073	--	2.72
1960	80,048	12.2	2,757,537	5.2	2.90
1970	90,609	13.2	2,824,376	2.5	3.21
1980	83,745	3.5	2,913,808	3.1	3.22
1990	86,403	-7.8	2,776,831	-4.7	3.11
2000	89,143	3.2	2,926,324	5.4	3.05
2010	93,653	10.8	3,046,355	1.0	3.17

Source: ECIA – Community Development Strategy, 2000  
Census 2010

## Major Rivers and Watersheds

The four major watersheds in Dubuque County are Grant-Little Maquoketa, Turkey, Apple-Plum, and Maquoketa. Major rivers in Dubuque include: Mississippi River; Catfish Creek; South Fork, Middle Fork, and North Fork Catfish Creek; Little Maquoketa River.

Dubuque County is mostly a dissected upland per the US Department of Agriculture Soil Conservation Service Soil Survey of Dubuque County. Dubuque County lies in the east central portion of the county bordering the Mississippi River on the east. The US Army Corps of Engineers and the City of Dubuque constructed a floodwall along the Mississippi River in the early 1970s that has greatly reduced flood damage caused directly from the Mississippi River. However, its tributaries continue to cause concern. The Federal Emergency Management Agency has defined these areas in the Dubuque County Flood Insurance Study completed in 1989. An updated study was adopted October 18, 2011.

## 2.2 Jurisdictional Descriptions and Capabilities

### Unincorporated Dubuque County

#### Description of community

The unincorporated areas of Dubuque 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.

Dubuque County is located in the northeastern part of Iowa, where the borders of Iowa, Wisconsin, and Illinois meet, separated by the Mississippi River. The County is bordered by Jackson and Jones counties on the south, Delaware County on the west, and Clayton County on the north.

Numerous major US and state highways run through Dubuque County. The City of Dubuque is the major hub for the four-lane US Highway 20 that runs east west through Dubuque County extending into Iowa and Illinois. Four-lane US Highway 61 extends north south from the City of Dubuque and extending into Wisconsin on the north and to the Quad Cities and beyond to the south. Four-lane US Highway 151 extends from the City of Dubuque and into Wisconsin on the north and to Cedar Rapids and beyond to the southwest. US Highway 52 runs north-south generally following the Mississippi River and extending north from Dubuque County through Iowa into Minnesota and to the south through Bellevue and Sabula before entering into Illinois.

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

Dubuque County contains a land area of 617 square miles, or 391,680 acres. The County has 17 townships and 21 incorporated cities, the most incorporated cities of any other county in Iowa. The City of Dubuque is the county seat and is located on the east edge of the county along the west bank of the Mississippi River. Dubuque County is ranked as the 7<sup>th</sup> most populated county in Iowa. The population for the County as of the 2010 census was 93,653.

There are 3 four-lane highways that provide access into the county: US Highway 20, US Highway 151 and US Highway 61 South. Additionally, there are two main two-lane highways that provide access into and around the county: US Highway 52 and Iowa Highway 136 which is on the west end of the county. These five highways provide access to three-quarters of the cities in the County. The Dubuque Regional Airport is located in the County, south of the City of Dubuque. It is accessed by US Highway 61 South and is undergoing a \$40 million renovation for a new terminal and access road.

There are seven county parks, six preserves and one state park and one preserve in the County. The County also operates one golf course and maintains 26 miles of a hike and bike trail called Heritage Trail that was part of an old abandoned railroad right of way. Flooding occurs frequently in the County and affects mostly farm fields, roads and bridges, including bridges along the Heritage Trail. These floods can be very costly so some of the old railroad bridges along Heritage Trail have been replaced by newer designs that allow the water to flow more freely and reduce flood damage.

### **Agricultural**

The County's primary land use is agricultural and is found throughout the unincorporated areas of the County. The topography ranges from gently undulating relief in the southwest portion of the County, to hilly and steep relief in the north and eastern portions of the County. Along the Mississippi River and its tributaries, the topography is very steep and rugged, with high limestone bluffs and outcrops. Much of this area containing the steep terrain is heavily wooded.

The steep landscape has restricted development and farming activities to some extent. About 20% of the single family homes that have recently been built in the County have been placed on agricultural land.

## **Residential**

Residential development in the County's unincorporated areas have generally occurred according to previously established development patterns and most recently is following the Future Land Use Development Map. Residential uses are primarily located near incorporated cities, along major highway and roadway corridors and are found in clusters up and down the Mississippi River. Most of the new residential growth in the County is occurring within 2-4 miles of the City of Dubuque and near the larger cities in the county, such as Cascade, Dyersville, Epworth, Farley and the fastest growing city in the state, Peosta.

## **Commercial**

Commercial development is located mostly along the highway corridors with most of the commercial uses found along US Highways 151 and 61 south from the City of Dubuque to the Airport, along US Highway 20 from the Dubuque City limits to Peosta and along US Highway 52 from the City of Dubuque to Mud Lake Road. Some new commercial development is occurring in the flood plain along the Couler Valley and Little Maquoketa River north of the City of Dubuque. Property owners are filling in the old barrow pits along Highway 52 North that are in the flood plain and then marketing the property for new commercial and industrial uses. The County is looking into amending the Flood Plain Management Ordinance to restrict the filling in of flood plain and to reduce the occurrence of flooding in that area and in the County as a whole.

## **Industrial**

Industrial uses in Dubuque County are primarily located in three areas around the City of Dubuque. The first area is to the south along Highways 52, 151 and 61. New development is occurring in Tamarak Park and near the airport. Another industrial area is located west of the City of Dubuque along Highway 20. This area is mostly developed from the Dubuque city limits to Peosta. The third area is along Highway 52 North in the Couler Valley and Little Maquoketa River outlet to the Mississippi River. John Deere Dubuque is located just outside the flood plain of the Little Maquoketa River. Over the last few years, Flood Plain Permits have been issued for filling in the flood plain along Highway 52 North. Some older more established businesses are seeing flooding in the Couler Valley watershed that have not flooded before. New development will occur along this corridor until the Flood Plain Management Ordinance is amended to restrict filling in and development of the flood plain in this area.

Both the South and West commercial and industrial corridors will be affected by the proposed four-lane highway, the Southwest Arterial that will be built in the next 10 -15 years between US Highways 151/61 and US Highway 20. Residential, commercial and industrial development is expected to occur from the city limits on the southwest side of the City of Dubuque to beyond

the Southwest Arterial after the new highway is built. This change in land use will be put into the Future Land Use Development Map at some future date as construction of the highway is nearing completion.

### **Comprehensive Land Use Development Plan and Map**

Dubuque County's Comprehensive Land Use Development Plan and Map is the community's guide to future development of the unincorporated areas of Dubuque County. The development plan and map guide development decisions made by the Board of Supervisors. The Comprehensive Land Use Development Plan is not an ordinance. It contains the long-range goals and objectives for the County that was compiled after several public meetings and hearings to determine a community vision for the future of Dubuque County.

The first Comprehensive Plan for the County was adopted on January 21, 1969 and was recently updated and readopted on September 23, 2002. Dubuque County will continue to use the plan to shape policies and land use decisions where county government has authority and influence. The Comprehensive Plan is being updated in 2011-2012 to incorporate the 10 Smart Planning Principles and 13 Comprehensive Planning Elements adopted by the State of Iowa during their last legislative session. This update should further protect property in the County from flood hazards since that will be a focus of the new update.

The elements of the current Comprehensive Plan include:

- Planning and Land Use Development
- Natural, Environmental and Resource Management
- Public Facilities and Services
- Transportation
- Future Land Use Development Map

### **Technical and Fiscal Resources**

Revenues for governmental uses flow primarily from property taxes collected. There is a local 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).

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

### **Existing Plans and Policies**

The County's most recent single-jurisdiction Hazard Mitigation Plan was approved in 2011.

See [Appendix H](#) for a table of Mass Care Shelter Locations and Generator Support for all jurisdictions.

## **Other Mitigation Activities**

See [Appendix I](#) for all Mitigation Activities.

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## **Asbury**

### **Description of community**

The City of Asbury has a population of 4,357 persons in the 2010 Census. The City is located in eastern Dubuque County, adjacent to the west side of the City of Dubuque. Asbury is located north of US Highway 20, south of US Highway 52. The Northwest Arterial Road connects Asbury's main thoroughfare, Asbury Road, with US Highways 20 and 52.

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

Since the adoption of the May 2003 Hazard Mitigation Plan, the City of Asbury has grown substantially. While the late 1990s saw the greatest growth to date in the city, Asbury continues to grow at a substantial rate. In the past few years the City has annexed the following areas: Sandwedge, Sandpiper, Berry Lane, Mill Creek, Brick Mason Lane, and areas off of Hales Mill Road. The City of Asbury purchased the 152-acre Meadows Golf Course and annexed another 160 acres west of the course for Tuscan Ridge and Legacy subdivisions in 2009. The most active areas of growth in the City of Asbury are Carver Heights and Clay Ridge subdivisions, which are both near the new Dubuque public elementary and middle schools. The City of Asbury has a Comprehensive Land Use Plan. The plan was last updated in October 2009.

### **Technical and Fiscal Resources**

The City has a city hall staff of three full-time and one part-time employee. The Public Works Department has four full-time employees and two seasonal employees. The Police Department has four full-time employees and two part-time employees. Engineering services are contracted. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

### **Existing Plans and Policies**

2009 – Hazard Mitigation Plan

2008 – Dubuque Hazardous Materials Mitigation Completed

2003 – Hazard Mitigation Plan

The Dubuque County Board of Supervisors has a 28E Agreement with the Dubuque Fire Department Hazardous Materials team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Asbury is included in this coverage.

The Asbury Community Fire Department is a member of the Dubuque County Emergency Medical Services Association and Asbury is a partner in the EMS Mutual Aid Agreement.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Asbury is included in this coverage. Asbury has its own high angle rescue team.

The City of Asbury has representation on the Dubuque County Emergency Management Commission and the commission has a compliant Multi Hazard Plan on file with the State of Iowa Emergency Management Division.

The Asbury Police Department has a 28E Agreement with the Dubuque County Sheriff's Office and the City of Dubuque Police Department.

### **Other Mitigation Activities**

The City of Asbury participates with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for all current Mitigation Activities.

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## **Balltown**

### **Description of community**

The City of Balltown has a population of 68 persons as of the 2010 US Census. The City of Balltown is located approximately 15 miles north of Dubuque on the Great River Road (C9Y).

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

The City of Balltown's current land uses are residential, commercial, and agricultural.

### **Technical and Fiscal Resources**

The City of Balltown 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**

This is the City's only Hazard Mitigation Plan. The City of Balltown has not addressed participation in the National Flood Insurance Program, and there have been no special flood hazards identified within the city limits.

### **Other Mitigation Activities**

The City of Balltown has 1 outdoor warning siren located adjacent to the residence at 421 Horseshoe Road. By the end of 2012, the frequency will change on the sirens and the City will need to replace it.

The City contracts with Dubuque County to perform snow removal.

The City of Balltown owns two waste water treatment facilities and one lift station. Citizens all have private wells, but Breitbach's Restaurant owns a 40,000 gallon cistern that is available to the City in the event of a fire. The town purchased the valve on the cistern that allows them access to the water in an emergency situation.

The City contracts with the Sherrill Fire Protection Association, an all-volunteer fire department, to assist with any fire and rescue needs.

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## **Bankston**

### **Description of community**

The City of Bankston is an incorporated municipality supporting a population of 27 persons (2010). It is located northwest of Dubuque in Dubuque County. Bankston is located six miles north of Farley on New Vienna Road and seven miles north of Epworth on Girl Scout Road.

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

Since the adoption of the May 2003 Hazard Mitigation Plan, one new house has been built in the City of Bankston. In the past few years, the City has annexed land adjacent to the west side of the city limit of a half lot size and annexed the land on the east adjunct the city limit which is where the sewer treatment is located. The City of Bankston does not have a Comprehensive Land Use Plan.

### **Technical and Fiscal Resources**

The City has a part-time City Clerk and two part-time Public Works employees. The Police Department has four full-time and two part-time employees. Revenues are from local option sales tax, road tax and water and sewer payments.

### **Existing Plans and Policies**

2009 – FEMA Hazard Mitigation Plan.

2008 – Dubuque Hazardous Materials Mitigation Completed

2003 – Hazard Mitigation Plan

The City of Bankston does not have a fire department, but has a contract with the Epworth Fire Department to respond to the community.

### **Other Mitigation Activities**

The City of Bankston participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for a complete list of mitigation activities.

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## **Bernard**

### **Description of community**

The City of Bernard has a population of 112 persons (2010). The City of Bernard is located in southeastern Dubuque County in northeastern Iowa. Bernard is approximately 15 miles southwest of Dubuque and about 10 miles east of Cascade.

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

The existing land uses in Bernard are residential, commercial, industrial, and agricultural. The City of Bernard has no current subdivision developments and has had no land annexations.

### **Technical and Fiscal Resources**

The City has a small workforce, including a part-time City Clerk, a part-time Wastewater Treatment Operator, and a seasonal part-time snow removal and lawn care employee. There is also a volunteer fire department and volunteer first responder team. Engineering services are contracted. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

### **Existing Plans and Policies**

The City of Bernard's most recent Hazard Mitigation Plan was approved by FEMA in 2010. Currently, the City is not a participant in the National Flood Insurance Program.

### **Other Mitigation Activities**

The City of Bernard participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for a list of current mitigation activities.

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## **Cascade**

### **Description of Community**

The City of Cascade is an incorporated municipality supporting a population of 2,159 persons (2010). The City is located in the southwest corner of Dubuque County with a small section located in the northeast corner of Jones County, Iowa. Cascade sits along US Highway 151 between the cities of Dubuque and Cedar Rapids.

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

The City of Cascade adopted the 2007 Future Land Use Plan as its Comprehensive Development Plan. The basic purpose of the Plan is to guide the growth and development of a community

through analysis, recommendations and proposals of a community's base elements of population, economy, housing, transportation, community facilities and land use.

### **Technical & Fiscal Resources**

The City of Cascade has several departments that are vital to the safety and well-being of the community. The City of Cascade Administration and Public Works Department has five full-time and four part-time employees; the Cascade Police Department has two full-time and two part-time officers; the Cascade Fire Department has up to thirty volunteer firefighters and up to five junior firefighters; the Cascade Emergency Medical Service currently has eighteen Paramedics or EMT-B volunteers; the Cascade Municipal Utility Company employs six full-time administrative and utility line staff. These support systems include water supply, sanitary sewer facilities, solid waste disposal, city streets, storm water removal, energy supply, and communication networks along with the emergency response services. If a disaster were to occur, the City of Cascade has the ability to provide the necessary essential, safety, and protective services to its residents.

### **Existing Plans and Policies**

The City of Cascade has a Planning & Zoning Commission and adopted a zoning ordinance in 1982 with yearly revisions. The City issues building permits for new construction.

The City of Cascade's most recent Hazard Mitigation Plan is dated August 2002 and Pre-Disaster Mitigation Plan from July 2005.

### **Other Mitigation Activities**

The City of Cascade has five outdoor warning sirens located within city limits.

Cascade is included in a 28E Agreement between the Dubuque County Board of Supervisors and the Dubuque Fire Department Hazardous Materials Team.

The Cascade Fire Department is a member of the Dubuque County Fire Fighters Association and is a partner in the EMS Mutual Aid Agreement.

The City of Cascade has signed the Dubuque County/Municipal Disaster Mutual Aid Agreement with other communities within Dubuque County.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team, which includes the City of Cascade in providing response to incidents within the response areas of the Dubuque County Fire Departments.

The City of Cascade has representation on the Dubuque County Emergency Management Commission and the commission has on file a compliant Multi Hazard Plan with the State of Iowa Emergency Management Division.

The Cascade Fire Department and the Cascade Emergency Medical Service have 28E Agreements with the surrounding townships to provide fire and ambulance service to those townships.

The City of Cascade Police Department has a 28E Agreement with the Dubuque and Jones Counties Sheriff's Departments. The Cascade Police Department is a member of the Jones County Emergency Response Team giving emergency support to members within Jones County.

The City of Cascade participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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## **Centralia**

### **Description of Community**

The City of Centralia has a population of 114 persons (2010). The City of Centralia is located in Vernon and Center Townships on Old Highway Road. It is approximately four miles west of the Dubuque city limits and less than one mile north and east of Peosta.

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

The City of Centralia has had no land annexations but does have zoning ordinances which were adopted in 2007 and which will be updated in 2012.

The City's current primary land uses are residential and agricultural.

### **Technical and Fiscal Resources**

Centralia employs only the City Council and City Clerk. The City has a joint volunteer fire department and ambulance service with the City of Peosta which provides full response to both cities. The City has private well water and septic systems, but is currently in the process of bringing the City of Peosta's water system to the residents of Centralia, which is partially funded through CDBG funds to provide water and to serve fire hydrants.

### **Existing Plans and Policies**

The City of Centralia's most recent Hazard Mitigation Plan dates from 2003. The City is not a participant in the National Flood Insurance Program and has no specially designated flood prone areas.

### **Other Mitigation Activities**

The City has one outdoor warning siren located at the fire house. The City is in the process of refurbishing the siren and has updated the radio system.

The City of Centralia has no generators, but the Centralia-Peosta Fire Department does and it would be available to the citizens of Peosta in the event of an emergency. The City of Centralia owns the fire station, but not the equipment. Centralia owns no other structures.

Snow removal is contracted for side streets, while Dubuque County is responsible for clearing and maintaining the main thoroughfare, Old Highway Road.

The City has no designated shelters and functions on a “shelter in place” philosophy.

The City of Centralia participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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## Dubuque

### Description of community

The city of Dubuque is located on the Mississippi River in northeast Iowa adjacent to the states of Illinois and Wisconsin. Iowa’s oldest city, Dubuque was established in 1833. The city currently has a land area of 31.06 square miles and a 2010 census population of 57,686. As the largest city in the tri-state area, Dubuque serves as the major retail, medical, education and employment center for the tri-state area estimated at 250,000 people. The community has a stable and diversified manufacturing base, a growing service sector, and a significant increase in technology based companies. Dubuque also has key employment in publishing, health care, tourism and education. Tourism continues to be a major economic force with over 1.5 million visitors annually.

### Land Use and Development Trends

In the early 1900s, most of Dubuque was located below the bluff lines in the historic floodplain carved by the Mississippi River between the limestone bluffs. The Mississippi River was the focus of the community, primarily as a transportation artery. Most of the city’s key industries were located adjacent to or near the river. Rail lines served as conduit to the rest of the nation, concentrated in areas near the Mississippi River. The city’s commercial hub was concentrated along Main Street, populated by the giants of the retail industry at the time. Residential development also was concentrated below the bluffs, although an increasing number of homes and institutions were built west on the bluff tops in areas heading to the north, south and west. The town had distinct geographic areas defined not only by prominent land forms but also ethnic concentrations.

The city’s development pattern did not substantially change until the 1950s and 1960s, when, like much of America, Dubuque entered an era of growth and prosperity that fueled substantial changes to development patterns which saw the decline of Main Street as the commercial core of the city, and the rise of the John F. Kennedy Road corridor and Kennedy Mall as the primary commercial shopping area. Long-time industries along the riverfront closed or relocated to the west end. Hundreds of new housing units were constructed in suburban development patterns on the west and north edges of Dubuque.

This pattern of westward expansion for industry, commercial and residential development continued until the 1980s. The community then worked to expand and diversify its local

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economy, and to obtain transportation and communication connections with the nation and the world; through these efforts, the development and pattern of Dubuque again began to change significantly. New highway construction provided Dubuque with better connectivity to the large Midwestern cities and the interstate highway system.

The City of Dubuque has annexed thousands of acres since 2000 to provide opportunities for additional residential, commercial and industrial growth. Additional local industries were relocated to new industrial parks developed on the city's south and west ends during the 1990s and new residential developments began on the south side of the city as well as the west end. With construction of the Northwest Arterial (Highway 32) the new commercial retail center shifted to Asbury Plaza Shopping Center. In addition to extending City services for new industrial parks, Dubuque has maintained its commitment to neighborhood and downtown revitalization. As part of the city's economic rebirth, the community also looked back to a long-neglected attribute – its historic architecture. Downtown became the center for financial, insurance and other service oriented commercial uses, and then for arts, culture, and entertainment.

The riverfront was dramatically transformed from industrial brownfields to an area for recreation and entertainment with the redevelopment of the Port of Dubuque beginning in 2000. There has been a continuing trend of redevelopment in the downtown and surrounding commercial and residential areas, such as the Washington and North End Neighborhoods and the historic Dubuque Millwork District.

### **Technical and Fiscal Resources**

The community of Dubuque is a metropolitan service area for seven surrounding counties. Dubuque is connected by four-lane highways to Davenport, Des Moines, Madison and Minneapolis. The majority of the way to Chicago is also four-lane highway.

The City's annual operating and capital budget is over \$181 million and funds a full range of municipal services. The City has more than 680 FTE employees. The City of Dubuque provides public safety, public works, health, engineering, cultural, recreation, community development, housing, planning, zoning, inspection, community and economic development services to its citizens. The City provides water, sanitary sewer, storm sewer, solid waste collection, parking (ramps, lots and meters), transit, civic center, convention center, golf course, parks, pools, trails, cable TV programming, public library and airport operations. The City operates the sanitary landfill with Dubuque County. The City's web site is [www.cityofdubuque.org](http://www.cityofdubuque.org).

### **Existing Plans and Policies**

Dubuque's first Comprehensive Plan was adopted in 1936. The Comprehensive Plan is Dubuque's principal guide for future development, public policies and decision making. The current plan was adopted in 1995, and then updated in 2002 and again in 2008.

The City's 2001 Drainage Basin Master Plan is a planning study that identifies a generalized area that appears to be at risk from storm sewer backups or overflows. The Drainage Basin Master

Plan was intended to address storm sewer conveyance problems – not flooding associated with a creek or river. Storm water system improvements are funded in part by a local stormwater utility.

The previous Hazard Mitigation Plan was approved in 2011 and was updated to incorporate into the Multi-Jurisdictional Plan. The City is a participant in the National Flood Insurance Program.

### **Other Mitigation Activities**

The 1965 Mississippi River flood was the great motivator to build Dubuque's floodwall and levee system. The River rose to a record 26.8 feet, flooding downtown and causing millions of dollars in damage. The \$12.5 million flood control project was begun in 1968, and completed in time to prevent flooding from the 1973 flood which crested at 21.9 feet. The floodwall system includes 5 miles of earthen levees and 1.4 miles of concrete walls that provide 30-foot flood stage protection with a 3-foot freeboard. FEMA certified Dubuque's floodwall and levee system in 2011 as providing protection from the 100-year flood.

Dubuque was the first community in Iowa to join the National Flood Insurance Program (NFIP) on April 2, 1971. The City has regulated floodplain development since 1990. Dubuque has been very conscientious in following the NFIP requirements. The city has never approved a variance from the NFIP requirements. The City has not allowed a single new residential structure to be built in any flood hazard area. The only new structures built in flood hazard areas have been commercial structures elevated and/or flood proofed in compliance with the NFIP requirements.

The City of Dubuque adopted revised floodplain development regulations in 2011 based on the latest digital flood insurance rate maps (DFIRMs) and flood insurance study (FIS) prepared for the community by FEMA.

The history of localized street flooding and basement flooding experienced in the North End of Dubuque (dating from the late 1800s) is the focus of drainage basin improvements like the Bee Branch Creek Restoration Project. This multi-year project replaces an underground storm sewer with an open waterway and other public amenities, reducing the risk of flood damage to 1,150 properties and improving water quality in some of Dubuque's oldest neighborhoods. The City also has installed upstream storm water management facilities to alleviate problems with the storm water system such as the Carter Road dam and 32<sup>nd</sup> Street detention areas that address existing storm water issues.

The City of Dubuque participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for ongoing mitigation activities.

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## Durango

### Description of community

The population as of the 2010 census was 22. The City of Durango is located in the northwestern part of Dubuque County on Highways 52 and 3. It is approximately 6 miles north of Dubuque.

### Land Use and Development Trends

The City of Durango does not have a Comprehensive Land Use Plan and there have been no subdivisions or land annexations. The City's current land uses are residential, commercial, and agricultural.

### Technical and Fiscal Resources

The City of Durango has two part-time employees. The Fire Department is served by volunteers and the ambulance is overseen by the Sherrill Fire Association. The City has the ability to issue general obligation bonds and revenue debt. The City does benefit from the Road Use Tax and receives a small portion of property taxes.

### Existing Plans and Policies

The City of Durango is a long-time participant in the National Flood Insurance Program. New flood ordinances were passed in 2011.

### Other Mitigation Activities

The City of Durango has one outdoor warning siren located between Burton's Furnace Road and US Highway 52. In the event of power outages, the Handle Bar and some private citizens have their own generators.

Each individual property owner has well and septic. The City of Durango contracts with Dubuque County to clear snow. Repairs for roads are hired out by the City.

The City of Durango participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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## Dyersville

### Description of community

The 2010 population of the City of Dyersville was 4,058. The City of Dyersville, founded in 1847, is located in Delaware and Dubuque Counties directly off of US Highway 20.

### Land Use and Development Trends

Early development within Dyersville grew around the North Fork Maquoketa River and along First Avenue (old US Highway 20). As the City grew and the highway was relocated to the south edge of the City, residential development spread to the east and north and the commercial

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development grew along the north edge of US Highway 20 and adjoining State Highway 136. Development trends continue to move away from the floodplain area. In recent development, a new subdivision and school have been approved on the west side of Dyersville, while a two-phase residential subdivision on the north side of the city is in process. Also, south of US Highway 20 another residential subdivision has been approved.

The City adopted a zoning ordinance, including floodplain regulations in November 1977. The City continues to enforce the floodplain provisions and is in the process of updating the ordinance.

The 1999, 2002 and 2008 floods resulted in the City pursuing federal funds for the acquisition and demolition of flood-damaged properties. All properties were located in the 100-year floodplain that is generally west of the North Fork Maquoketa River and extends from approximately five blocks south of First Avenue to the north edge of the City. Damaged properties included residential and commercial properties. Initially the 1999 application requested funds for all properties in the floodplain. Upon review and discussion with the Iowa Emergency Management Division staff, the application was reduced to include 13 flood damaged properties. Through a grant and follow-up amendments, the City acquired 8 properties and received additional funds in 2003 to acquire four more properties through that program. (Note: One property was later added to the original application due to structural damage occurring one year after the flood and two owners withdrew from the application.)

A June 2002 flood resulted in a follow-up application for additional funding to acquire properties that were damaged in 2002. While the impacts of this flood were diminished in that 8 structures were removed from the floodplain prior to this flood, the application included an additional 45 damaged properties. Due to funding limitations, the application was revised to 34 properties. The City received funding to acquire and demolish 8 flood-damaged properties.

From the June 2008 flood, 37 applicants were identified. Following the 2010 flood, no new applicants were identified; however, several applicants previously identified in 2008 opted to take the buyout.

### **Comprehensive Land Use Plan**

The City of Dyersville has a Comprehensive Land Use Plan that was first adopted in 1962, and it was updated in 1974 and 1975 as the Comprehensive Development Plan for Dyersville, Iowa Planning Area. The Comprehensive Development Plan is a long-range plan intended to guide the growth and development of the community through analysis, recommendations and proposals of a community's basic elements of population, economy, housing, transportation, community facilities and land use. Each element in turn will contain goals and objectives establishing the direction and ideas to which the comprehensive plan is intended to satisfy. The plan is currently in the process of being updated.

### **Description of Land Uses**

The City of Dyersville's current land uses are residential, commercial, industrial, recreational open space and conservation, institutional and agricultural. The City's residences are disbursed throughout the community. The majority of the commercial businesses are located on or within approximately two blocks of Main and Franklin streets. The majority of the industrial businesses are located in the industrial park in the southwest portion of the City, just north of US Highway 20 and east of State Highway 13. Open spaces are limited to industrial space in the southwest, commercial space in the west portion of the City near State Highway 13, several areas proposed for residential development to the north and east of the City, and areas of floodplain where development will not occur.

### **Technical and Fiscal Resources**

The City of Dyersville has 18 full-time, 12 part-time and 47 seasonal 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**

Dyersville's most recent Hazard Mitigation Plan was approved in 2011. The City is a member of the National Flood Insurance Program.

### **Other Mitigation Activities**

The City of Dyersville participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

Current Mitigation Activities in the City of Dyersville have been addressed and included in this multi-jurisdictional hazard mitigation plan in [Appendix I](#).

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## **Epworth**

### **Description of the Community**

The City of Epworth is located in central Dubuque County, along the US Highway 20 corridor, approximately 10 miles west of Dubuque and 10 miles east of Dyersville. US Highway 20 provides four-lane east-west access and County Highway Y17 provides access to the north and south. Population is 1,860 (2010).

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

The City of Epworth has zoning ordinances and issues building permits for new construction. The City has experienced 30% residential growth in the past ten years, and currently has several active subdivisions under development.

## **Technical and Fiscal Resources**

The City of Epworth has four full-time and three part-time staff. The City contracts for planners/engineers to manage land development and management issues. Snow removal is a combination of City-covered and contracted service. Two full-time employees are responsible for the oversight of the day-to-day operations of the water and sewer utilities, as well as all public works operations. The Epworth Volunteer Fire Department has 40 active members involved in fire suppression, rescue services and advanced life support emergency medical transport services; due to training and advanced equipment, the Epworth area has a class 4 insurance rating which results in lower insurance rates. The City's funding sources are primarily property tax, local option sales tax, road use tax, and fees for services. The City has the ability to issue general obligation bonds and revenue debt.

## **Existing Plans and Policies**

The previous Hazard Mitigation Plan dates from 2002 and the Pre-Disaster Mitigation Plan dates from 2005 while the most recent Land Use Plan was written in 2006. These combined documents and planning elements act as the Comprehensive Plan for the City. The City is part of the Dubuque County Regional Smart Planning Consortium that is developing a regional comprehensive plan and the City will update the comprehensive plan as a result of the Smart Planning process. A storm water management ordinance was adopted in 2011. The City is a participant in the National Flood Insurance Program.

The Epworth Fire Department is a member of the Dubuque County Fire Fighters Association and the Dubuque County Emergency Medical Services Association. The city is a signatory on the Dubuque County Fire Association Mutual Aid and Contingency Agreement.

The City of Epworth has representation on the Dubuque County Emergency Management Commission and the commission has on file with the State of Iowa Homeland Security and Emergency Management a compliant Comprehensive Emergency Operations Plan and Disaster Recovery Plan.

The Dubuque County Board of Supervisors has a 28E Agreement with the Dubuque Fire Department Hazardous Materials team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Epworth is included in this coverage.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team to provide response to incidents within the response areas of the Dubuque County Fire Departments. The Dubuque Fire Department also provides trench and rescue operations and have a firefighting foam trailer available to mutual aid departments. Epworth is included in this coverage.

The Epworth Police Department has a Mutual Aid agreement with the Dubuque County Sheriff's Department, the City of Peosta Police Department, and the City of Farley Police Department.

## **Other Mitigation Activities**

The City of Epworth has two outdoor warning sirens coordinated through the fire department. The fire and EMS services are 100% volunteer. There is a stationary backup generator located at the Fire Station/City Hall and at a well site. The City is looking to add generator capabilities at the lift station locations.

The City of Epworth participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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## **Farley**

### **Description of community**

The City of Farley is an incorporated municipality supporting a population of 1,537. The City of Farley is located off of US Highway 20 in western Dubuque County. The City of Farley is approximately 20 miles west of the county seat, Dubuque.

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

The City of Farley's current land uses are residential, commercial, industrial and agricultural. The City has a comprehensive plan and is in the process of participating in the creation of a seven city Smart Plan. Zoning ordinances are in place and the City of Farley does issue building permits for new construction. The City of Farley has one large subdivision with 73 homes.

### **Technical and Fiscal Resources**

The City of Farley has two to three part-time and four full-time staff members. The City contracts for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is a combination of City-covered and contracted. Two full-time certified employees are 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 City of Farley is a current participant in the Dubuque County Smart Planning Consortium.

The previous Hazard Mitigation Plan dates from 2005 and the City of Farley is a participant in the National Flood Insurance Program as of October 2011.

### **Other Mitigation Activities**

The City of Farley has three outdoor warning sirens and plans to add another one for the northeast section of town by the school and park. The fire and EMS services are 100% volunteer. There is a backup generator located on the water system and the sewer treatment system. The City has an additional portable generator for the lift station and community shelter.

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The City of Farley participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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## **Graf**

### **Description of community**

The City of Graf has a population of 79 persons (2010). The City is located in Dubuque County, approximately 4.5 miles North of Peosta. Graf is located north of US Highway 20, south of US Highway 52. Five points road connects Graf with Highway 52 and Graf road connects to US Highway 20.

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

Since the September 2003 Hazard Mitigation Plan, the City of Graf has grown slightly from 73 to 79 (2010). The City of Graf has a Restricted Residence Ordinance that restricts land use within the city limits.

### **Technical and Fiscal Resources**

The City has one part-time employee, the City Clerk. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

### **Existing Plans and Policies**

2007 – Pre-Disaster Mitigation Plan

2003 – Hazard Mitigation Plan

The Dubuque County Board of Supervisors has a 28E Agreement with the Dubuque Fire Department Hazardous Materials team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Graf is included in this coverage.

Graf contracts with the Epworth Fire Department for emergency services.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Graf is included in this coverage.

Graf does not have a Police department so it relies on the Dubuque County Sheriff for protection.

### **Other Mitigation Activities**

The City of Graf participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

# Holy Cross

## Description of Community

The City of Holy Cross is located in northern Dubuque County, along US Highway 52 and State Highway 3. The City lies approximately 22 miles northwest of the City of Dubuque. The population is 374.

## Land Use and Development Trends

The existing land uses are residential, commercial, industrial, and agricultural. The City of Holy Cross does not have a comprehensive land use plan and there are no development trends.

## Technical and Fiscal Resources

The City of Holy Cross has one part-time staff member at city hall. Public Works has two part-time employees and one part-time season employee. Engineering services are contracted. Revenues are provided through property taxes, local option sales tax, sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

## Existing Plans and Policies

The previous Hazard Mitigation Plan was approved in 2010 and currently, the City of Holy Cross is a participant in the National Flood Insurance Program.

## Other Mitigation Activities

The City of Holy Cross participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for a list of all current mitigation activities.

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# Luxemburg

## Description of Community

The City of Luxemburg is an incorporated municipality located in the northwest corner of Dubuque County at the junctions of US Highway 52 and State Highways 3 and 136. It is approximately 25 miles northwest of the City of Dubuque, 10 miles north of Dyersville and 13 miles south of Guttenberg.

## Land Use and Development Trends

The existing land uses are residential, commercial, industrial, and agricultural. The City of Luxemburg does not have a comprehensive land use plan and there are no development trends.

## Technical and Fiscal Resources

The City of Luxemburg has four part-time employees. The City contracts 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.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan was approved in 2010. Currently, the City of Luxemburg is not a participant in the National Flood Insurance Program.

### **Other Mitigation Activities**

The City of Luxemburg participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See Appendix I for a list of all current mitigation activities.

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## **New Vienna**

### **Description of Community**

The City of New Vienna is located in west-central Dubuque County. It is five miles north of the City of Dyersville and 30 miles west of Dubuque. The City is well-served by State Highway 136, which provides access north and south and County Highway C64 to the west and D17 to the east. Highway 136 provides access to US Highway 20, a four-lane east-west expressway, and locates five miles from New Vienna. The population is 407.

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

The existing land uses are residential, commercial, industrial, and agricultural. The City of New Vienna does not have a comprehensive land use plan and there are no development trends.

### **Technical and Fiscal Resources**

The City of New Vienna has 1 full-time employee and three part-time employees. Cleaning of streets and snow removal is done by City staff, but contract for hauling snow away. The City's funding sources are property taxes, fees for city services, local option, road use taxes. The City has authority to levy taxes for specific purposes.

### **Existing Plans and Policies**

The previous Hazard Mitigation Plan was approved in 2009. Currently, the City of New Vienna is a participant in the National Flood Insurance Program.

### **Other Mitigation Activities**

The City of New Vienna participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See Appendix I for a complete list of current mitigation activities.

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## **Peosta**

### **Description of community**

The City of Peosta has a population of 1,377 persons (2010). The City is located in central Dubuque County on County Road Y21, a short distance north of four-lane US Highway 20. The City is four miles west of the city limits of Dubuque

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

Since the June, 2009 Hazard Mitigation Plan, the City of Peosta has grown at a modest pace. The City of Peosta does have a Comprehensive Land Use Plan. The plan was last updated in June, 2005.

### **Technical and Fiscal Resources**

The City has a city hall staff of two full-time employees. Public Works has two full-time employees and the Police Department has two full-time employees. Engineering services are contracted. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

### **Existing Plans and Policies**

2009 – Hazard Mitigation Plan

The Dubuque County Board of Supervisors has a 28E Agreement with the Dubuque Fire Department Hazardous Materials team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Peosta is included in this coverage.

The City of Peosta has a 28E Agreement with the Centralia/Peosta Fire Department to provide fire protection and EMS services to Peosta residents

The Centralia/Peosta Fire Department is a member of the Dubuque County Fire Fighters Association and Peosta is a partner in the Mutual Aid Agreement.

The Centralia/Peosta Fire Department is a member of the Dubuque County Emergency Medical Services Association and Peosta is a partner in the EMS Mutual Aid Agreement.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Peosta is included in this coverage.

The City of Peosta has representation on the Dubuque County Emergency Management Commission and the commission has on file with the State of Iowa Emergency Management Division a compliant Multi Hazard Plan.

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The Peosta Police Department has a 28E Agreement with the Dubuque County Sheriff's Office and the City of Epworth.

### **Other Mitigation Activities**

Dubuque County, Cities in Dubuque County and both School Districts are signatories on the Iowa Mutual Aid Compact (IMAC) as established in Chapter 29C of the Iowa Code which allows mutual aid assistance among political subdivisions within the state of Iowa.

See Appendix X for a list of all mitigation activities.

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## **Rickardsville**

### **Description of Community**

The City of Rickardsville has a population of 182 (2010). The City is located approximately 15 miles northwest of Dubuque on US Highway 52.

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

The existing land uses are residential, commercial, and agricultural. The City of Rickardsville does not have a comprehensive land use plan and there are no development trends.

### **Technical and Fiscal Resources**

The City of Rickardsville has a mayor, five city council members, a city clerk, a sewer operator and a planning and zoning administrator, all of whom are considered to be part-time employees of the City. The City contracts for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is contracted with Dubuque County. The City's funding sources are property taxes and fees for city services. The Local Option Sales Tax revenue pays for garbage removal, so the citizens of Rickardsville only pay for sewage. 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 200. Currently, the City of Rickardsville is not a participant in the National Flood Insurance Program and does not have specially designated flood areas. The City of Rickardsville does not have a Comprehensive Plan. The City issues building permits for new construction and additions, but does not have a building code. The City enacted zoning ordinances for businesses and residential on April 13, 1968 with revisions made as needed.

### **Other Mitigation Activities**

The City of Rickardsville does not have an outdoor warning siren for alerting citizens of all hazards. While the mayor and city council would like to have one in the city, the cost has been prohibitive.

All entities have private well water, but the community does have a sewage treatment plant and does have a generator at that site. The City has no other backup generators available for power outages.

The City of Rickardsville participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

The Sherrill Volunteer Fire Department, which also services Rickardsville, has signed a 28E Agreement with the Dubuque Fire Department.

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## **Sageville**

### **Description of Community**

The City of Sageville has a population of 122 as of the 2010 census, a number City representatives believe to be inaccurate. The 2000 US Census recorded 203 persons in Sageville and officials think this number was closer to the actual number than what was recorded and are attempting to change it. The City is located approximately three miles north of Dubuque on US Highway 52.

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

The existing land uses are residential, commercial, industrial, and agricultural. The City of Sageville does not have a comprehensive land use plan and there are no development trends.

### **Technical and Fiscal Resources**

The City of Sageville has one part-time staff member. The City contracts for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is contracted. The City's funding sources are local options taxes, road-use taxes, and state shared revenues. 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 2007. Currently, the City of Sageville is a participant in the National Flood Insurance Program.

### **Other Mitigation Activities**

The City of Sageville has one outdoor warning siren for alerting citizens of all hazards.

The City of Sageville participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

The City issues building permits and prohibits building in the flood zone. The City has applied for FEMA flood buyouts of 37 properties severely damaged by the July 2011 flood. The fire department rescued a number of citizens when Sageville experienced severe flash flooding at the mobile home park and surrounding area. Sageville sits in a low-lying area of Dubuque County that has experienced increased flash flooding due to development of the surrounding area. During the July 2011 flood, heavy downpours flood nearby Heritage Pond, the Sageville Drainage ditch and the Little Maquoketa River. Debris in the Little Maquoketa River prevented excess water from draining into the Mississippi River and the area experienced extensive damage and loss. A total of 37 mobile homes were damaged, but two were removed after the flood. Thirty-five mobile homes, one house and the owner of the land where the entire mobile home park was located are considering applying for FEMA flood buyout assistance at this time.

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## **Sherrill**

### **Description of community**

The City of Sherrill has a population of 177 (2010). The City is located in north eastern Dubuque County. Sherrill is located north of Sageville on Highway 52.

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

The City of Sherrill does not have a Comprehensive Land Use Plan and has no development or annexations plans for the near future.

### **Technical and Fiscal Resources**

The City has a city hall staff of one part-time employee. Public Works has two part-time employees. Engineering services are contracted. Revenues are provided through property taxes, local option sales tax, and user fees. The City has the ability to issue general obligation bonds and revenue debt.

### **Existing Plans and Policies**

2009 – Hazard Mitigation Plan

2007– Pre-Disaster Mitigation Plan

The City of Sherrill has a contract with the Sherrill Fire Association to provide Fire and EMS coverage within the Sherrill city limits.

The Dubuque County Board of Supervisors has a 28E Agreement with the Dubuque Fire Department Hazardous Materials team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Sherrill Fire Department is included in this coverage.

The Sherrill Fire Department is a member of the Dubuque County Fire Fighters Association and Sherrill Fire Department is a partner in the Mutual Aid Agreement.

The Sherrill Fire Department is a member of the Dubuque County Emergency Medical Services Association and the Sherrill Fire Department is a partner in the EMS Mutual Aid Agreement.

The Dubuque County Board of Supervisors has a 28E Agreement with the City of Dubuque Fire Department High Angle Rescue team to provide response to incidents within the response areas of the Dubuque County Fire Departments. Sherrill Fire Department is included in this coverage.

The Sherrill Fire Department has representation on the Dubuque County Emergency Management Commission and the commission has on file with the State of Iowa Emergency Management Division a compliant Multi Hazard Plan.

The City of Sherrill has a 50 Kilowatt Generator that can power a lift station and/or a fire station.

### **Other Mitigation Activities**

The City of Sherrill participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for all Mitigation Activities.

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## **Worthington**

### **Description of Community**

The City of Worthington has a population of 401. The City is located in southwestern Dubuque County. It is six miles south of the City of Dyersville and 10 miles northwest of Cascade. The City is well served by State Highway 136, which provides access to four-lane US Highway 20, located five miles north, and to US Highway 151, located 10 miles south. Worthington is 30 miles from Dubuque, 65 miles from Waterloo, and 55 miles from Cedar Rapids, placing Worthington within an hour commute of three of Iowa's metropolitan areas.

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

The City of Worthington's current land uses are residential, commercial, industrial and agricultural.

The City of Worthington has two subdivisions. Sunset View Subdivision is to the north and has 12 full lots. There are seven lots left with five new homes. The subdivision to the south is being developed by a land surveyor and a partner. They are still in the developing stages.

Recent annexations include 40 acres including land north of the Sunset View subdivision and which is now the Industrial Park.

The City of Worthington does not have a comprehensive land use plan.

## **Technical and Fiscal Resources**

The City of Worthington has one full-time and 2 part-time staff members as well as five PRN workers. The City is able to contract for planners/engineers to manage land development and management issues. Cleaning of streets and snow removal is done by city staff. The City's funding sources are property taxes and fees for city services, local option sales tax, road use tax and State Shared Revenues. 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 2009. Currently, the City of Worthington is a participant in the National Flood Insurance Program.

## **Other Mitigation Activities**

The City of Worthington participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

See [Appendix I](#) for other mitigation activities.

The City has two outdoor warning sirens – one on the east side of town and one on the west.

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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. The population is 91.

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

Land uses are residential, commercial and agricultural. There are no subdivisions or land annexations and no significant growth 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 contracts 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 systems. 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 and the City of Zwingle is not a participant in the National Flood Insurance Program.

## Other Mitigation Activities

The City of Zwingle has one outdoor warning siren.

The City of Zwingle participated with all other cities and school districts within Dubuque County as a member of the Iowa Mutual Aid Compact (IMAC). IMAC is established in Iowa Code Section 29C.22.

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

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

Capability	Dubuque County
Master/Comprehensive Plan	Yes
Emergency Operations Plan	20% of the plan is updated on an annual rotating basis.
Capital Improvements Plan	None, other than Secondary Roads Plan.
Building Code	No
Building Code Year	NA
Fire Department ISO Rating	Varies by department.
Storm Water Management Ordinance	Yes
Floodplain Management Ordinance	Yes
Zoning Ordinance	Yes
Subdivision Ordinance	Yes
Erosion Management Ordinance	Yes
National Flood Insurance Program Participant	Yes
Flood Insurance Rate Map Delineation Date	October 18, 2011
Elevations Certificates Maintained	Yes
Letter of Map Adjustments (LOMA)	Yes

## Dubuque County School Districts

### Description of community

There are two Unified School Districts that serve Dubuque County. They are Dubuque and Western Dubuque School Districts. Both chose to participate in this multi-jurisdictional hazard mitigation plan and provided additional data. None of the school districts identified any hazards unique to their campuses and agreed that their rankings are reflected in the County assessment. The Dubuque Community School District's Stephen Hempstead High School does have property in the flood zone; however, there are no structures in that area. See [Appendix M](#) for overlay maps of school structures and HAZUS flood maps. Furthermore, Hempstead is in the process of an extensive renovation process that may include the addition of a tornado safe room. Architectural and engineering plans have not been yet finalized.

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Holy Family Catholic Schools and Dyersville Beckman Catholic High School also are located in Dubuque County and representatives from each were invited to planning meetings. A representative from Dyersville Beckman was able to attend a planning session.

Information on capabilities with the public school districts is provided below in Table 2.3:

**Table 2.3 School District Capabilities**

District	Regulatory Tools	Public Safety Officer on Site	Financial Resources	Current Education & Mitigation Activities
Dubuque	Crisis Management Plan	Three school resource police officers	PPEL, SILO	Evacuation Plan for students/staff in all facilities. Four fire and tornado drills/year and routine practice of lockdowns and evacuations.
Western Dubuque	Crisis Plan	No	PPEL, Sales Tax	Evacuation Plan for all students in buildings. Routine fire, tornado and intruder drills.

## 3 Risk Assessment

**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 Dubuque County, including loss of life, personal injury, property damage, and economic loss, from a hazard event. The risk assessment process allows communities in Dubuque 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 Dubuque 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             | 9. Landslide                 |
| 2. Drought                 | 10. Levee Failure            |
| 3. Earthquake              | 11. River Flood              |
| 4. Expansive Soil          | 12. Severe Winter Storm      |
| 5. Extreme Heat            | 13. Sinkhole                 |
| 6. Flash Flood             | 14. Thunderstorm & Lightning |
| 7. Grass or Wild Land Fire | 15. Tornado                  |
| 8. Hailstorm               | 16. Windstorm                |

Data on the past impacts and future probability of these hazards in the Dubuque 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
Earthquake	Unlikely to occur in this region.
Expansive Soils	Are not found in area.

The HMPT identified 14 hazards that significantly affect the planning area and organized these hazards to be consistent with the Iowa Hazard Mitigation Plan (2007). Eight of the 14 hazards are considered to be, by the Dubuque County HMPT, county-wide concerns and were rated as “Has Occurred” or “Could Occur”. They are:

- Drought
- Extreme Heat
- Grass or Wild Land Fire
- Hailstorm
- Severe Winter Storms
- Thunderstorm & Lightning
- Tornado
- Windstorm

These hazards are profiled in further detail in the next section. All other man-made hazards are addressed in the Dubuque 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 Dubuque 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 roll them into the multi-jurisdiction plan. **UNL = Unlike to Occur; X = Has occurred or Could occur**

Jurisdiction	Dam Failure	Flash Flood	Landslide	Levee Failure	River Flood	Sinkhole
Dubuque County	UNL	X	X	UNL	X	X
Asbury	UNL	X	UNL	UNL	UNL	UNL
Balltown	UNL	UNL	UNL	UNL	UNL	UNL
Bankston	UNL	X	UNL	UNL	UNL	X
Bernard	UNL	X	UNL	UNL	UNL	UNL
Cascade	UNL	X	UNL	X	X	UNL
Centralia	UNL	X	UNL	UNL	UNL	UNL
Dubuque	X	X	X	X	X	X

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Jurisdiction	Dam Failure	Flash Flood	Landslide	Levee Failure	River Flood	Sinkhole
Durango	UNL	X	UNL	UNL	X	UNL
Dyersville	UNL	X	UNL	UNL	X	UNL
Epworth	UNL	X	UNL	UNL	UNL	X
Farley	UNL	X	UNL	UNL	UNL	UNL
Graf	UNL	X	UNL	UNL	X	UNL
Holy Cross	UNL	X	UNL	UNL	UNL	UNL
Luxemburg	UNL	UNL	UNL	UNL	UNL	UNL
New Vienna	UNL	X	UNL	UNL	X	UNL
Peosta	UNL	X	UNL	UNL	UNL	UNL
Rickardsville	UNL	X	UNL	UNL	UNL	UNL
Sageville	UNL	X	UNL	UNL	X	UNL
Sherrill	UNL	X	UNL	UNL	UNL	UNL
Worthington	UNL	X	UNL	UNL	X	UNL
Zwingle	UNL	X	UNL	UNL	UNL	UNL

### 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 provisions 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 Dubuque County in the past 10 years. Many of the disaster events were regional or statewide; therefore, reported costs are not accurate reflections of losses to Dubuque County and are not included.

**Table 3.1.2 Disaster Declaration History in Dubuque County, 2001 – 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	Severe Storms, Tornadoes, Flooding
1518	05/25/2004	Severe Storms, Tornadoes, Flooding
1420	06/19/2002	Flood, Severe Storms
1367	05/02/2001	Severe Storms and Flooding
<b>Emergency Declarations</b>		
3239	09/10/2005	Hurricane Katrina Evacuation
<b>USDA Declarations for Dubuque County</b>		
S2902	04/01/2010	Excessive Rainfall and Flooding
S2898	05/15/2009	Severe Storms, Hail and Flooding
S3035	09/20/2010	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 Dubuque 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 Dubuque County.

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

<b>Historical Occurrence:</b> the number of times that a hazard has occurred in the past 25 years		
<b>Score</b>	<b>Description</b>	
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	

<b>Probability:</b> reflects the likelihood of the hazard's occurring again in the future, sometimes without regard to the hazard's historical occurrence		
<b>Score</b>	<b>Description</b>	
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 100% 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

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

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<b>Maximum Threat:</b> the potential spatial extent of the impacted area		
<b>Score</b>	<b>Description</b>	
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.		
<b>Score</b>	<b>Description</b>	
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	
<b>Score</b>	<b>Description</b>
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 Dubuque County**

Hazard	Historical Occurrence	Probability	Vulnerability	Maximum Geographic Extent	Severity	Speed of Onset	Total	Ranking
Drought	3	3	2	4	1	1	14	7
Extreme Heat	4	3	1	4	2	1	15	4
Grass of Wild Land Fire	1	1	1	1	1	4	9	8
Hailstorm	4	3	1	1	2	4	15	6
Severe Winter Storm	4	4	4	4	3	2	21	1
Thunderstorm & Lightning	4	4	1	2	2	4	17	3
Tornado	4	3	1	1	2	4	15	5
Windstorm	4	4	2	2	2	4	18	2

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

Table 3.2C below illustrates the resulting scores for each of the eight 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	Drought
8	Grass or Wild Land Fires

In the table above, earthquake, extreme heat and hailstorm 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. Once each of the eight identified hazards had been assessed, scored and ranked, the next step for the Dubuque County Planning Team was to prioritize the eight 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	Hailstorm	Drought
Windstorm		Grass or Wild Land Fire
Thunderstorm & Lightning		
Extreme Heat		
Tornado		

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, or with a UNL for unlikely to occur. 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						
<b>Uninc. Co.</b>	UNL	19	10	UNL	13	9
<b>Asbury</b>	UNL	9	UNL	UNL	UNL	UNL
<b>Balltown</b>	UNL	UNL	UNL	UNL	UNL	UNL
<b>Bankston</b>	UNL	12	UNL	UNL	UNL	10
<b>Bernard</b>	UNL	15	UNL	UNL	UNL	UNL
<b>Cascade</b>	UNL	13	UNL	19	10	UNL
<b>Centralia</b>	UNL	10	UNL	UNL	UNL	UNL
<b>Dubuque</b>	9	17	11	15	16	9
<b>Durango</b>	UNL	24	UNL	UNL	24	UNL
<b>Dyersville</b>	UNL	20	UNL	UNL	18	UNL
<b>Epworth</b>	UNL	17	UNL	UNL	UNL	12
<b>Farley</b>	UNL	16	UNL	UNL	UNL	UNL
<b>Graf</b>	UNL	16	UNL	UNL	UNL	UNL
<b>Holy Cross</b>	UNL	UNL	UNL	UNL	UNL	UNL
<b>Luxemburg</b>	UNL	15	UNL	UNL	UNL	UNL
<b>New Vienna</b>	UNL	14	UNL	UNL	6	UNL
<b>Peosta</b>	UNL	19	UNL	UNL	UNL	UNL
<b>Rickardsville</b>	UNL	13	UNL	UNL	UNL	UNL
<b>Sageville</b>	UNL	24	UNL	UNL	24	UNL
<b>Sherrill</b>	UNL	14	UNL	UNL	UNL	UNL
<b>Worthington</b>	UNL	13	UNL	UNL	20	UNL
<b>Zwingle</b>	UNL	UNL	UNL	UNL	UNL	UNL

From this point forward, the Dubuque 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, Extreme Heat, Tornado and Hailstorm) as well as all six hazards that were identified as specific to at least one or more jurisdictions.

### 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).
- **Significant 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**

#### **City of Dubuque**

There are no dams with a permanent pool of water that would impact the City of Dubuque. However, there are multiple storm-water detention basins within the city that are classified as dams as they will impound storm-water during heavy rains.

The regional Carter Road Detention Basin is classified by the Iowa Department of Natural Resources as a high-hazard dam because if it should fail it could “lead to the loss of human life or result in serious damage to residential, industrial or commercial areas, important public utilities, public buildings, or major transportation facilities.” Construction of the detention basin was completed in 2003. The City inspects the facility on an annual basis and after each heavy rain. The Iowa Department of Natural Resources inspects the facility every other year. Their last inspection was in 2009.

The regional W. 32<sup>nd</sup> Street Detention Basin is classified by the Iowa Department of Natural Resources as a moderate-hazard dam because “failure may damage isolated homes or cabins, industrial or commercial buildings, moderately traveled roads or railroads, interrupt major utility services, but without substantial risk of loss of human life.” Construction of the detention basin was completed in 2009. The City inspects the facility on an annual basis and after each heavy rain. The Iowa Department of Natural Resources inspects the facility every other year. Their last inspection was in 2009.

## **Levees**

### **City of Cascade**

The North Fork of the Maquoketa River flows through the City of Cascade between Filmore and Pierce Streets. Several small ephemeral streams flow through the community into the North Fork of the Maquoketa River. In 1925, the City of Cascade experienced a catastrophic and unprecedented flood following cloudbursts. Property damage was estimated at \$500,000. The area that received the most damage is located southward along Johnson Street.

According to a 1992 FEMA Flood Insurance Study of the City of Cascade, Dubuque and Jones Counties, the following flood protection measures were taken:

Upstream of the US Highway 151 Bridge, levees were constructed on both banks; downstream of the bridge, a levee was built only on the west bank, since the east bank was sufficiently high. Portions of the levee have been sandbagged during high-flow conditions. The levee on the west bank of the river, upstream of the bridge, is responsible for protecting the highly developed saddle-like area that was damaged in the 1925 flood.

In April 1990, the Rock Island District COE inspected and evaluated the existing condition of the city's flood-control project under Public Law 84-99. Based upon the results of the field inspection and the evaluation, the overall condition of the levee in the City of Cascade is rated unacceptable. The levee crown was rated at approximately a 10-year frequency.

Based on the 1990 COE inspection and evaluation, the City of Cascade completed two installments of levees. In 1999-2000, the City constructed a levee on the south portion of the west bank of the river and the second portion was installed in fall 2011. The Corps of Engineers inspects annually and makes recommendations; however, the second extension has not yet been tested as there have been no heavy rains since it was constructed. This portion of the levee was locally funded.

In 2009, rip rap and rocks were put in to stabilize the north side of the western back bank as well. The bank on the north end is not completely rip-rapped and is only an earthen levee due to funding. Downstream from the bend in the North Fork of the Maquoketa River is rip-rapped, which is where the force of the water is greatest. The City of Cascade looks to complete the project as soon as funding is available.

### **City of Dubuque**

No events of levee failure in Dubuque have occurred since the completion of its 6.4 mile long earthen and concrete levee in 1973. The levee was designed and constructed by the US Army Corps of Engineers, which also inspects the levee every year. The levee protects almost all of the city of Dubuque from Mississippi River flooding to an elevation

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of 615.47 msl (river state 30.0'). Only Dubuque's Chaplain Schmitt Island and Catfish Creek valley lie outside the protection of Dubuque's floodwall levee. The levee has withstood river crests as high as 611.93 msl (river state 26.46'). It is the concerted opinion of Corps and City engineers that "overtopping" at some time in the future is a more likely scenario than levee failure.

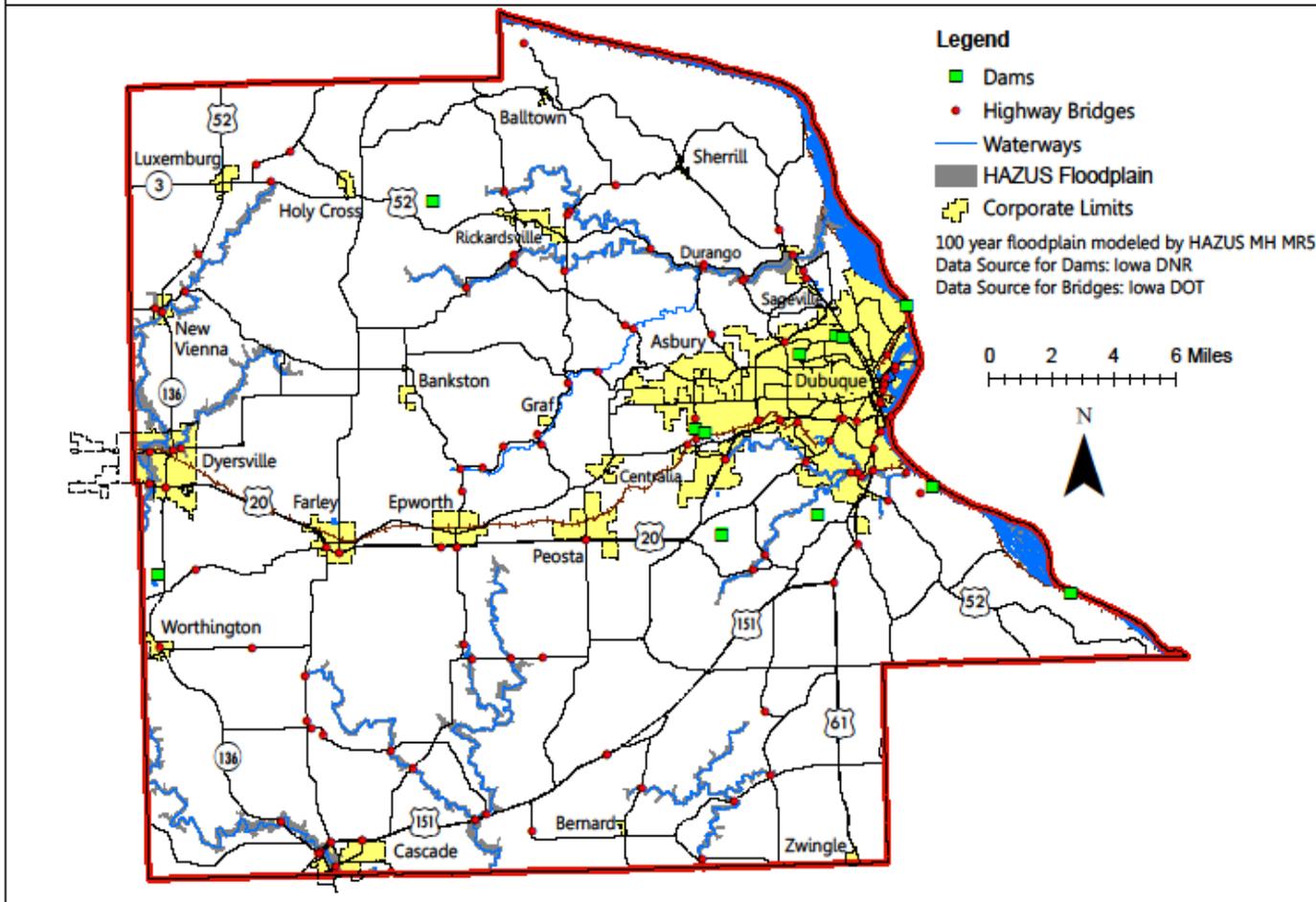
FEMA certified Dubuque's floodwall and levee system in 2011. The City had set aside funding in 2010 for a study to identify actions that could be taken in the event of a levee failure that might reduce the flood limits and reduce both public and private property damage.

For more information on dams and levees in Dubuque County see:

<http://www.iowadnr.gov/Recreation/CanoeingKayaking/LowHeadDams/DamMitigationSafety.aspx>

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# Dubuque County Dams and Highway Bridges



For additional information on inventoried dams on major rivers see [Appendix F](#) for the Iowa DNR Map of Inventoried Dams in Various Classifications.

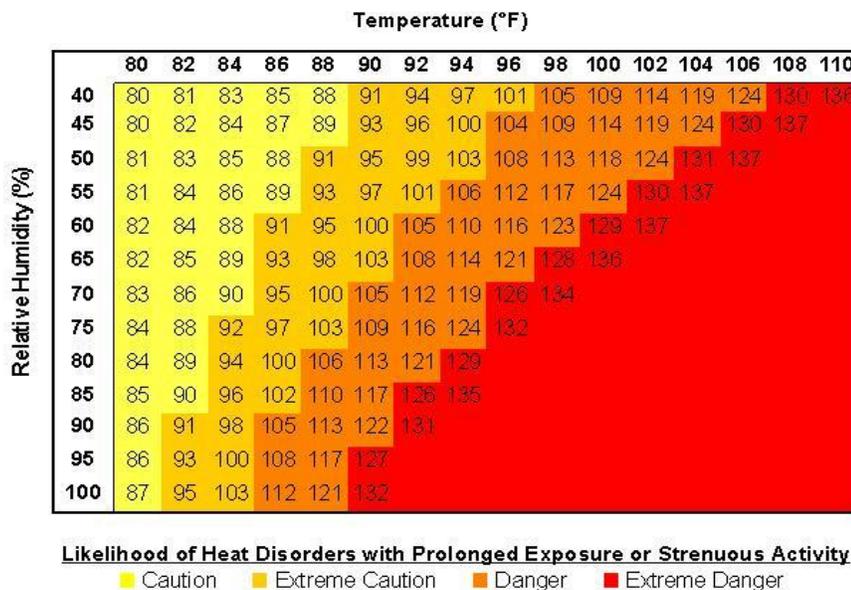
### 3.2.3 Extreme Heat

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 Dubuque County between January 1, 1950 and October 31, 2010. 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**



### 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. Last year, 2011, was a record year for flood events in Iowa that exceeded all measurement tools.

There are several different types of potential flood events in Dubuque 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 67 flood events in Dubuque County from January 1, 1950 through September 30, 2011. NCDC cites more than \$188 million in damages in Dubuque County in that same 61 year span. See [Appendix G](#) for further information on NCDC data regarding flooding in Dubuque County.

Flash Flood was identified by several participating communities in Dubuque County, as well as the unincorporated areas, as being a hazard of concern. In 2011, the City of Sageville experienced more than \$2.2 million in damage due to flash flood. Some communities, for example, Rickardsville, who have no rivers nearby still have problems with water in basements and flash flooding in low-lying areas of the city. All jurisdictions to some degree have had some problem with flooding in the past 25 years.

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 Dubuque 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 July 2010, Dubuque County experienced severe flooding. The City of Durango reported heavy downpours, thunder and lightning. According to the HMPT, there are lots of options for water ways to flood in the City of Durango. Water came over Highway 52 and the worst came from the north, from the area of the City of Sherrill and "ragged" down Highway 52. As water came over the highway, it poured into doors and into homes. There were twelve houses in Durango and 3 or 4 of those are presently considering FEMA buyouts.

According to residents of Durango who participated on the Planning Team, three of the creeks are filling in as the floods bring soil through. The waterways are not as deep or wide and consequently, flooding occurs more easily.

Historically, the Mississippi River has flooded the City of Dubuque's low-lying riverfront properties many times over the last 150 years. After the record flood of 1965, a concerted effort by local, state, and federal officials to construct a protective levee system was initiated. Finally completed in 1973, the 6.4 mile long earthen and concrete floodwall system has protected Dubuque from numerous Mississippi River flood events since. Those flood events include four of the ten highest flood crests ever measured, including Dubuque's second highest ever crest of 25.40 feet in 2001. Only Dubuque's Chaplain Schmitt Island and Catfish Creek valley lie outside the protection of Dubuque's floodwall.

The City of Dyersville has a long history of dealing with flash and river flood events. The City submitted two 404 Hazard Mitigation Grant Program applications to the Iowa Homeland Security and Emergency Management Division (HSEMD) in Des Moines, IA, the first in 1999 and the second in 2002. The initial 1999 application consisted of the acquisition and demolition of all properties located in the 100-year floodplain and was revised to include 13 flood damaged properties from the 1999 flood located in Zone AE of the NFIP Floodplain. A 14<sup>th</sup> property was added with an amendment as a result of major structural deterioration. Due to IEMD funding limitations, the City acquired and demolished eight properties with more on the waiting list. The area experienced another major flood in 2002 resulting from heavy rains

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and floods overflowing the banks of the North Fork of the Maquoketa River and Bear Creek. The impact of flooding was diminished as a result of the acquisition and demolition of these eight properties.

In 2003 the City of Dyersville received funding under the 1999 HSEMD program to acquire and demolish four more properties. The balance of the properties submitted in the 1999 application have either been addressed or withdrawn from the program.

The City's second application was submitted for acquisition and demolition of 45 properties as a result of the June 2002 Flood, designated Disaster #1420. Due to funding limitations, the application was revised to 34 properties and was approved to provide funding for acquisition and demolition of eight flood-damaged properties.

In 2009, the City of Dyersville was awarded \$3,336,800 through the HMGP which has provided the City with the funding to acquire 27 properties that have severe flood damage. To date, 11 of the properties have been acquired and the process continues. In 2009 the City was also awarded CDBG funds in the amount of \$1,100,000 for the acquisition of an additional 10 properties. That process also continues and is expected to be completed by Fall 2012.

In the event of future significant damage due to flash flooding, Dubuque 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 Dubuque 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 Dubuque County.

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# Dubuque County HAZUS Floodplain

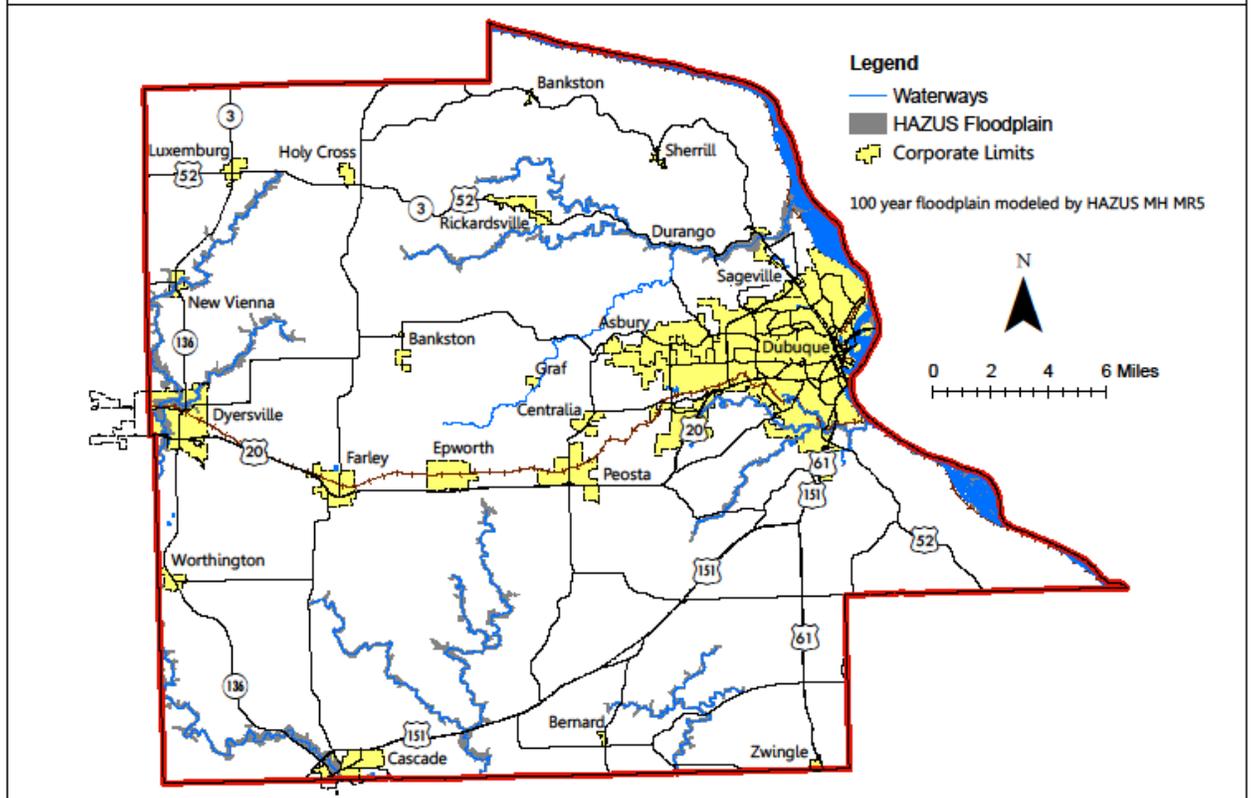


Table 3.2A identifies which jurisdictions in Dubuque County are currently participants in the National Flood Insurance Program. Those that are not presently members will meet all requirements once mapping is completed. FEMA/DNR has draft maps for all incorporated communities in Dubuque County and NFIP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

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

City	NFIP Participant	
	YES	NO
Unincorporated Dubuque County	X	
Asbury		X
Balltown		X
Bankston		X
Bernard	X	
Cascade	X	
Centralia		X
Dubuque	X	
Durango	X	
Dyersville	X	
Epworth	X	
Farley	X	
Graf	X	
Holy Cross	X	
Luxemburg		X
New Vienna	X	
Peosta	X*	
Rickardsville		X
Sageville	X	
Sherrill		X
Worthington	X	
Zwingle	X	

\*Application in process.

### **3.2.5 Hailstorm**

#### **Description**

Hailstorms are an outgrowth of severe thunderstorms in which balls or irregularly shaped lumps of ice greater than 1.00 inch in diameter fall with rain. Hail is often produced by strong thunderstorms. Strong rising currents of air within a storm carry water droplets to a height where freezing occurs. Ice particles grow in size until they are too heavy to be supported by the updraft. Hail can be smaller than a pea or as large as a softball and can be very destructive to plants and crops. Pets and livestock are particularly vulnerable to hail. The Dubuque County Planning Team has indicated that hailstorms have occurred in the community. NCDC data indicated that 126 hail events have been reported in Dubuque County between January 1, 1950 and September 30, 2011. The Planning Team recognized that hailstorms have the potential to impact the entire jurisdiction. For this reason, hailstorms do not have a defined hazard boundary. However, structures that are not in good repair, cedar shake shingles, and vehicles are vulnerable to damages from hail.

### **3.2.6 Landslide**

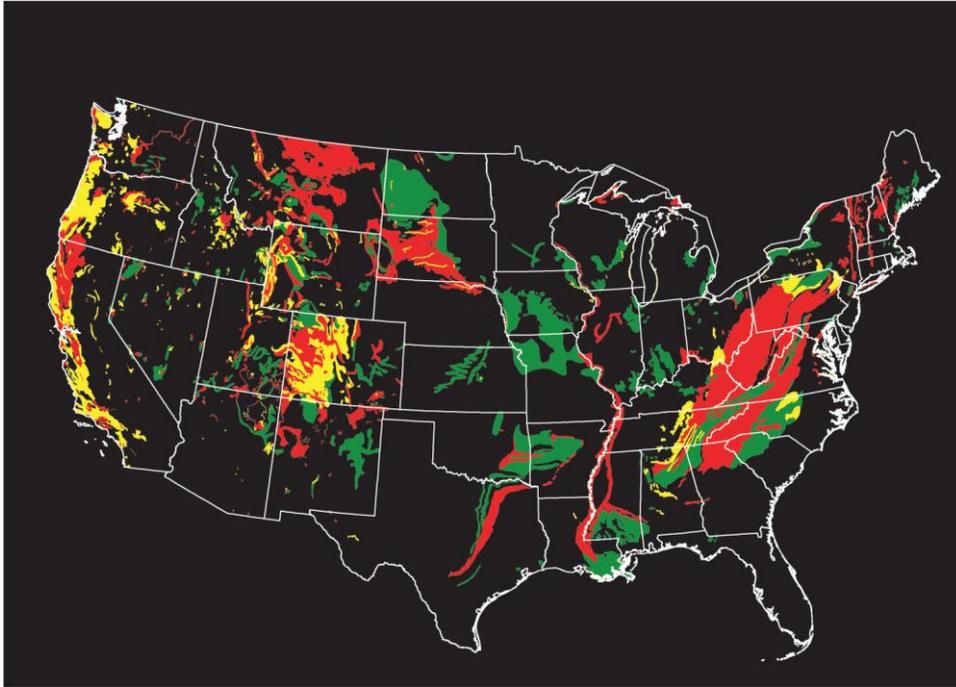
#### **Description**

Both the Unincorporated County and the City of Dubuque noted that landslides have occurred. Dubuque County, including the City of Dubuque, is located on the bluff lands of the Mississippi River Valley, which falls into the area for potential landslides.

The HMPT noted landslides in the County in the areas of: Park Hollow, Heritage Trail and Highway 52. The events are infrequent and are not considered to be of significant concern. The HMPT did not identify any mitigation actions for the Unincorporated County regarding landslides.

However, as development continues to occur on the high bluffs surrounding the banks of the Mississippi River and other areas where high embankments exist within the city limits, the city continues to witness occasional landslide events at various locations around the city. The City has an active inspection program which monitors construction activities and associated erosion control measures on a quarterly basis and after heavy rainfall events. A part of these activities include the inspector being cognizant of possible landslides due to construction or other activities in the area.

## Landslide Hazards—A National Threat



Landslide potential of the conterminous United States: Red areas have very high potential, yellow areas have high potential, and green areas have moderate potential. Landslides can and do occur in the black areas, but the potential is low. Map not to scale. Sources: the National Atlas and the USGS. <http://pubs.usgs.gov/fs/2005/3156/2005-3156.pdf>

Another area of concern for the City of Dubuque is retaining walls. Development of the City of Dubuque has included many retaining walls over the years. Many of the walls are on private property either along the street right-of-way line or between lots. Some retaining walls have been constructed along the right-of-way in order to allow for the construction of the street. Surface runoff and subsurface water occasionally cause movement in the wall or stones being displaced. The City relies on maintenance workers and the general public to keep abreast of any changes in the structural stability of the walls. When notification of minor movement in the wall is received, after examination, City Engineering may set up control points to monitor the movement. If the wall is an immediate hazard, the area of influence will be barricaded off to protect the public. The wall will then be examined for corrective action or reconstruction. Since there are a number of retaining walls that are considered public, the City has an annual Capital Improvement Project budget for such repairs or reconstruction.

### 3.2.7 Severe Winter Storms

#### 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 cause 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.

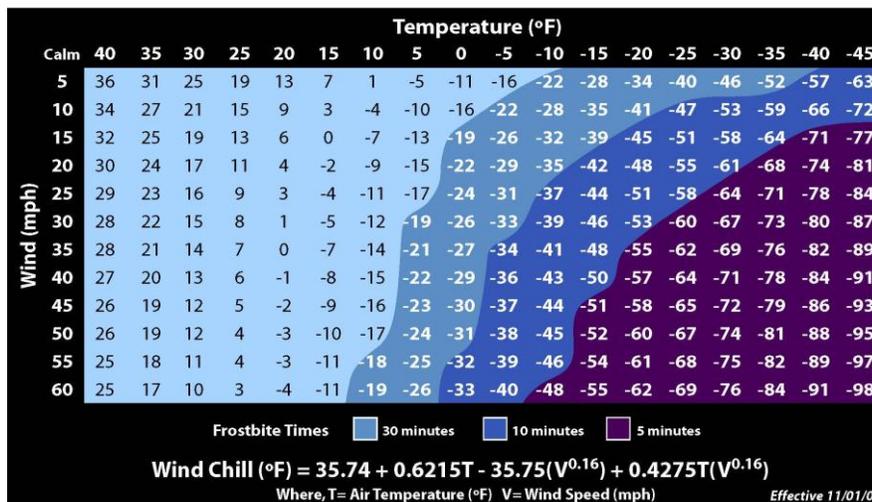
Dubuque County receives large amounts of snow, freezing rain, sleet and extreme wind chills each year. Heavy snowfall and extreme cold can immobilize an entire region.

Below is the National Weather Service Wind Chill Chart of temperatures and onset of windchill.

**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 123 snow and ice storms in Dubuque County between January 1, 1950 and September 30, 2011, with dozens of severe cold temperatures during that same period.

### **3.2.8 Sinkholes**

#### **Description**

Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that can naturally be dissolved by ground water or surface water migrating through them. As the rock dissolves or is displaced, voids and caverns develop underground. The land above the sinkhole usually stays intact until the underground voids become too large to support weight of the load above. A dramatic result can occur when the soils eventually give way creating an opening on the surface. These types of occurrences are rare, sporadic and unpredictable. The City of Dubuque addresses such occurrences by immediately barricading or closing the area to vehicle and pedestrian traffic. Depending on the size and cause of the sinkhole, it may be filled with rock, stone or other material. In certain situations a structural slab may be built over the void area.

### **3.2.9 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

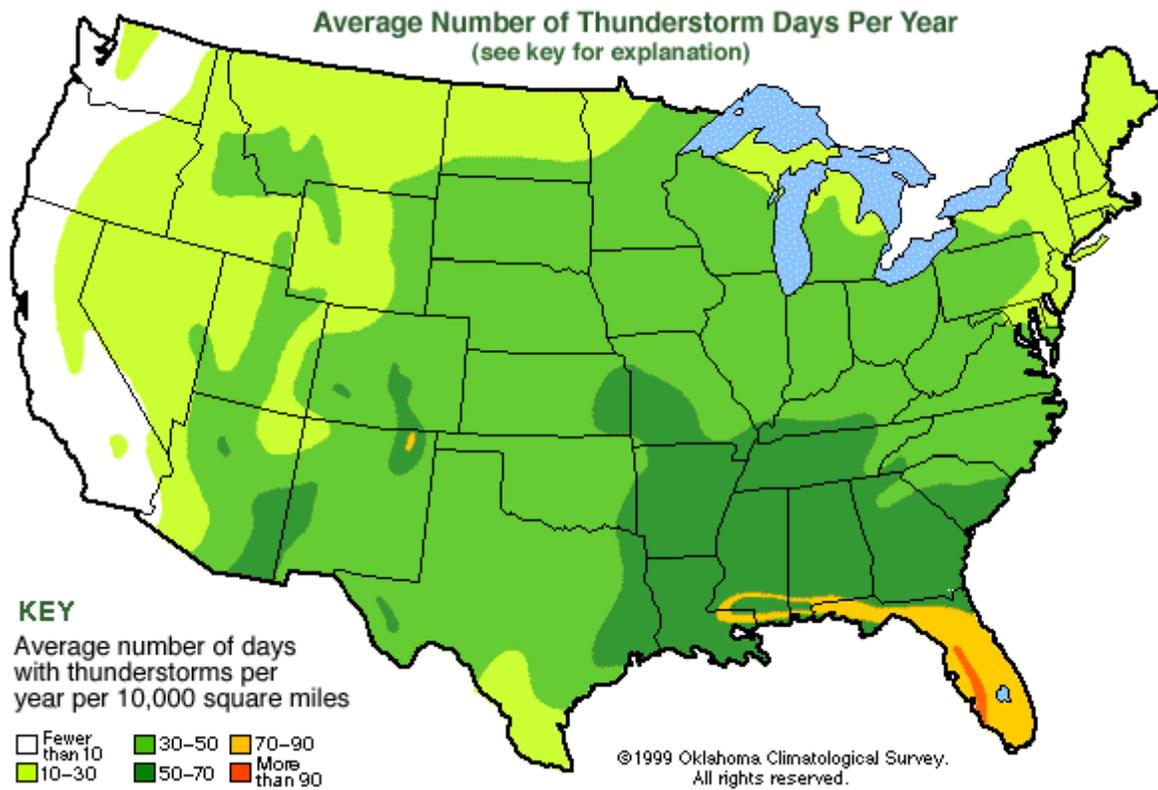
winds can often exceed 60 mph and are common occurrences, and are often mistaken for tornadoes.

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 are 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, 206 thunderstorm and wind events were recorded in Dubuque County between January 1, 1950 and September 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 three lightning events in Dubuque County during the same time period and also cites over \$4 million in property and crop damages from thunder, wind and lightning storms during the same period.

The Planning Team 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 Dubuque 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.

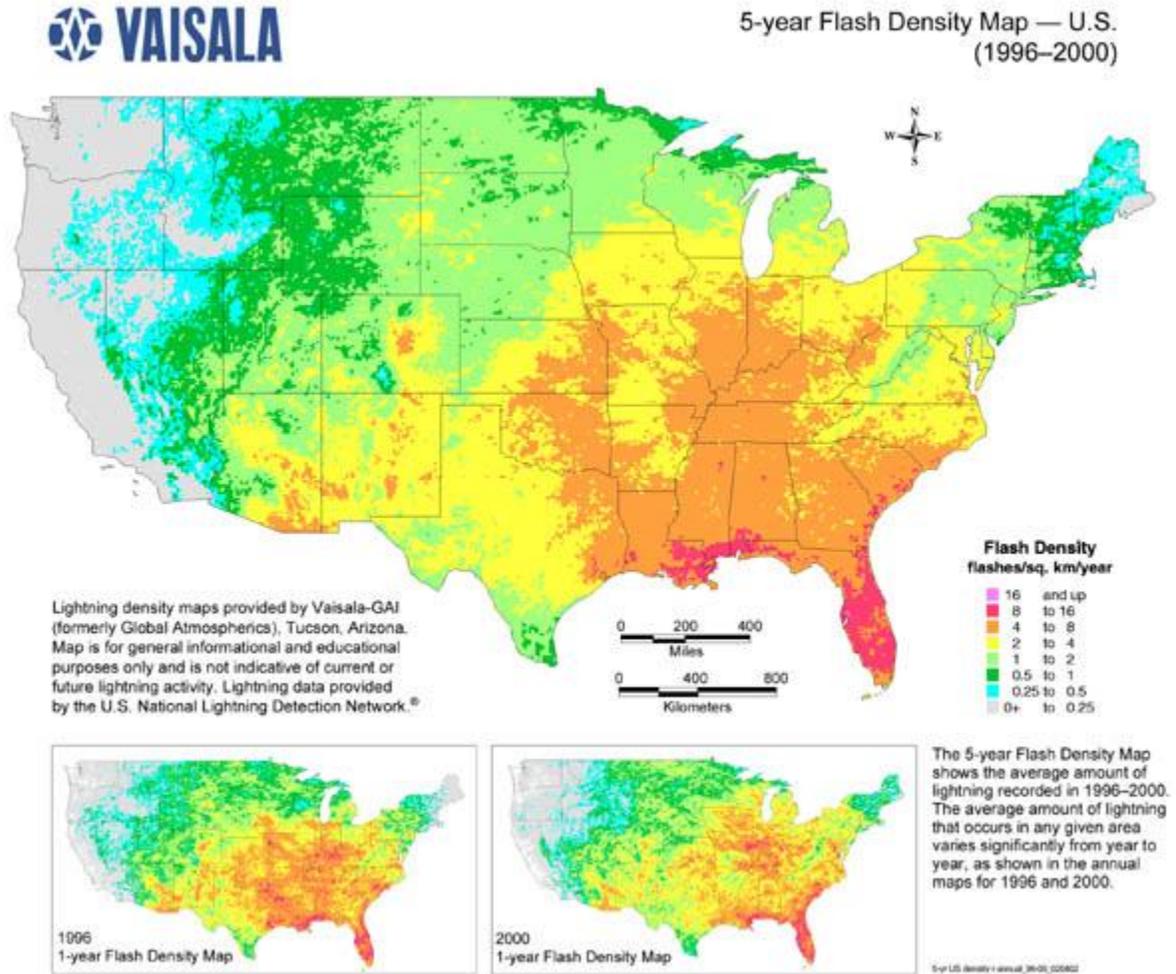
Figure 3.2F Distribution and Frequency of Thunderstorms



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**Figure 3.2G Location and Frequency of Lightning in Iowa**



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

### 3.2.10 Tornado

#### Description

Tornadoes are relatively common in Iowa, including Dubuque 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

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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 Dubuque County, the NCDC cited 22 tornadoes between January 1, 1950 and September 30, 2011. For more information on NCDC listings of tornadoes in Dubuque County see [Appendix G](#).

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

### 3.2.11 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 3.21 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 may reduce visibility	Slight structural damage 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 Team recognized that windstorms have the potential to impact the entire jurisdiction equally; therefore the hazard boundary can be depicted as jurisdiction-wide.

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NCDC classifies windstorm tracking in the same category as thunderstorms. See the previous section for NCDC data as well as [Appendix G](#).

### 3.3 Vulnerability Assessment

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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 Dubuque 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 Dubuque County that are at risk to identified hazards.

#### Total Exposure of Population and Structures

Table 3.3.2 shows the estimated values for key building occupancies. 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.

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**Table 3.3A Estimated Values for the Key Building Occupancies (Uses) for Unincorporated Dubuque County (2011 Valuations)\***

Residential	Commercial	Industrial	Ag Dwelling	Total
\$795,894,750	\$61,047,289	\$39,940,166	\$198,279,600	\$1,095,161,805

\*Data from the Dubuque County Tax Assessor Records

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

<b>Community</b>	<b>Population (from 2010 Census)</b>	<b>Total Structure Value (\$)</b>
Dubuque County	93,653	1,123,970,165
Asbury	4,170	275,652,605
Balltown	68	3,683,734
Bankston	25	3,209,192
Bernard	112	1,384,160
Cascade	2,159	86,806,424
Centralia	134	5,247,740
Dubuque	57,637	2,791,994,080
Durango	22	1,001,866
Dyersville	4,058	222,207,921
Epworth	1,860	71,506,354
Farley	1,537	81,927,184
Graf	79	2,903,780
Holy Cross	374	12,737,648
Luxemburg	240	9,434,407
New Vienna	407	18,349,906
Peosta	1,377	130,756,303
Rickardsville	182	8,948,710
Sageville	122	8,023,268
Sherrill	177	6,656,460
Worthington	401	14,899,270
Zwingle	91	1,873,630
<b>Total</b>		<b>4,883,174,807</b>

**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, schools, 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 Dubuque County Hazard Mitigation Planning Team determined the following facilities are critical facilities and sites located in Dubuque County, along with their estimated replacement valuations, if known:

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The following alphabetically-ordered tables indicate the critical facilities and their replacement values by jurisdiction. The City of Graf reported no critical facilities. See [Appendix H](#) for maps of each jurisdiction’s critical facilities.

**Unincorporated Dubuque County**

#	Critical Facility	Address, if Structure	Estimated Replacement Value if Known in \$
<b>Structures</b>			
1	Dubuque Regional Airport	11000 Airport Road Dubuque, Iowa 52003	\$22,895,946
2	Highway Services Building	50 W. 13th St. Dubuque, IA 52001	399,755
3	Dyersville DOT Shop		
4	Key West DOT Shop	11000 Highway 61 S	
5	Farley DOT Shop	14117 Iowa 136 Dyersville	
6	Dubuque County Courthouse	720 Central Avenue Dubuque, IA 52001	14,471,375
7	Dubuque Law Enforcement Center	770 Iowa St. Dubuque, IA 52001	10,136,441
8	Dubuque County Fairgrounds	14569 Old Highway Road Dubuque, IA 52002	4,420,180
9	Fire Training Facility	10250 Sundown Road Peosta Iowa 52068	1,163,244
<b>911 System &amp; Communication Towers</b>			
10	West Third Water Tower		
11	Sunny Crest		
12	Cascade		
13	Dubuque I		
14	Dubuque II		
15	Dyersville		
16	LaMotte		
17	Peosta		
18	Sherrill		
<b>Lifeline Utility Systems</b>			
19	Alliant Energy		
20	Aquila/Black Hills Energy		
21	AT&T		
22	BP Pipeline		
23	Bernard Telephone Company		
24	Cascade Communications		
25	Cascade Municipal Utilities		
26	CIPCO		
27	Windstream Communications		
28	LaMotte Telephone Co.		
29	Magellan Pipeline		
30	Maquoketa Valle Electric Co-Op		
31	Mediacom		
32	Mid America Energy		
33	Northern Natural Gas		
34	Qwest Communications		
35	Williams Pipeline (MAPCO)		
<b>Transportation Systems</b>			
36	US Highway 20		

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#	Critical Facility	Address, if Structure	Estimated Replacement Value if Known in \$
37	US Highway 52		
38	US Highway 61		
39	US Highway 151		
40	State Highway 32		
41	State Highway 3		
42	State Highway 136		
43	Canadian National Railway		
44	Canadian Pacific Rail Systems		
45	Key Line Transit and Regional Transit Authority		

### Asbury

#	Critical Facility	Address	Estimated Replacement Value if Known in \$
1	Asbury Park	5500 Asbury Road	308,500
2	Police Department	4985 Asbury Road	226,000
3	City Hall	5080 Asbury Road	285,000
4	Asbury Community Fire Department	5485 Saratoga Road	500,000
5	Arrowhead Lift Station	6335 Pawnee Lane	83,333
6	Wedgewood Lift Station	15373 Middle Road	83,333
7	Wedgewood Well	1994 Spyglass	277,000
8	Colonial Estates Well	5380 Saratoga Road	455,000
9	Woodmoor Well	15992 Woodmoor Drive	25,000
10	WWTF & Public Works Facility	6200 Willow Wood Drive	2,366,667
11	Water Tower/Pressure Station	6524 Asbury Road	1,500,000
12	Asbury Court Lift Station	4750 Asbury Court	17,200
13	Radford Road Lift Station	2305 Radford Road	140,380
14	Willowood Lift Station	6200 Willowwood Drive	83,333
15	Brookhaven Lift Station	3299 Brook Park Drive	61,111
16	Hales Mill Road Lift Station	5000 Autumn Drive	554,000
17	Asbury Park Siren	550 Asbury Road	29,000
18	Maple Hills Siren	3285 Maple Hills Drive	29,000
19	Hales Mill Siren	3154 Hales Mill Road	29,000
20	Seippel Road Siren	2300 Seippel Road	29,000
21	Wedgewood Siren	6060 Palmer Drive	29,000
22	Tuscany Ridge Siren	2080 Legacy Heights Ridge	29,000

### Balltown

#	Critical Facility	Address	Replacement Value if Known in \$
1	Warning Siren	Adjacent to 421 Horseshoe Road, across from church	*

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2	Waste Water Treatment Facility		
3	Lift Station	455 Balltown Road	

\*The City carries only liability insurance on its critical facilities.

### Bankston

#	Critical Facility	Address	Estimated Replacement Value if Known in \$
1	A & D Agri Supply	15644 Bankston Park Road, Epworth	
2	Sewer		348,000
3	Well		350,000

### Bernard

#	Critical Facility	Address	Replacement Value if Known in \$
1	Emergency Services Center	547 Rolus	850,000
2	Water Building/Siren	549 Lefler	500,000
3	Old City Hall	268 Bernard	75,000
4	Lift Station	Jess Street	500,000
5	Post Office	157 Jess Street	
6	Telephone Building	110 Jess Street	
7	School	867 Bernard	
8	Lagoon	Higgensport Road	600,000

### Balltown

#	Critical Facility	Address	Replacement Value if Known in \$
1	Warning Siren	Adjacent to 421 Horseshoe Road, across from church	*
2	Waste Water Treatment Facility		
3	Lift Station	455 Balltown Road	

\*The City carries only liability insurance on its critical facilities.

### Cascade

#	Critical Facility	Address	Replacement Value if Known in \$
1	Well #4	817 7 <sup>th</sup> Ave SW	104,478
2	Well #5	1413 Delong Ave SE	115,470
3	Well #6 (in by end of 21012)	2024 1 <sup>st</sup> Ave E	150,000
4	Sewer Plant & Lift Station	501 5 <sup>th</sup> Ave SW	2,966,068
5	CMU Warehouse	220 Pierce St SW	126,970

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6	Cascade Municipal Utility	201 Pierce St SW	7,946,213
7	Cascade Communications Co. Switch Station		
9	Fire Station	807 1 <sup>st</sup> Ave E	555,071
10	Town Border Station (Natural Gas Junction)	Monroe St NE	7,000
11	Cascade Immediate Care (Finley Clinic)	610 2 <sup>nd</sup> Ave NE	
12	Cascade Family Health Center (Mercy Clinic)	805 Johnson St SW	
13	Cascade Communications	106 Taylor St SE	
14	1 <sup>st</sup> Avenue Bridge	1 <sup>st</sup> Ave @ North Fork Maquoketa River	2,000,000
15	City Hall/Police Station	320 1 <sup>st</sup> Ave W	1,712,248
16	City Garage/Public Works	200 & 201 Buchanan St NW	687,449
17	Shady Rest	701 Johnson St NW	
18	Cascade High School	505 Johnson St NW	
20	Aquin High School	608 3 <sup>rd</sup> Ave NW	
21	Cascade Elementary	110 Harrison St SE	
22	Water Tower 1	121 Fox St SE	366,527
23	Water Tower 2	605 McKinley St SW	385,590
24	Water Tower 3 (online est. 2013 and will replace 1 &2)	2123 1 <sup>st</sup> Ave E	1,300,000
25	Cascade Emergency Medical Service	803 1 <sup>st</sup> Ave W	200,000
26	Water Booster Pump Station	113 Industrial Park Rd	132,641
27	Lift Station 1	900 Johnson St NW	79,358
28	Lift Station 2	619 Tyler St NE	79,358
29	Lift Station 3	600 Polk St SE	108,018
30	Electrical Substation	908 Tyler St NE	1,173,000
31	Siren 1	817 7 <sup>th</sup> Ave SW	22,081
32	Siren 2	200 Buchanan St NW	22,081
33	Siren 3	709 6 <sup>th</sup> Ave NW	22,081
34	Siren 4	807 1 <sup>st</sup> Ave E	22,081
35	Siren 5	1413 Delong St SE	22,081
36	Webber Community Center (owned by Western Dubuque Schools)	Located next to Cascade High School-505 Johnson St NW	

## Centralia

#	Critical Facility	Address	Replacement Value if Known in \$
1	Fire Station		

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## Dubuque

#	Critical Facility	Address	Replacement Value if Known in \$
1	Dubuque Regional Airport	11000 Airport Road Dubuque, Iowa 52003	\$22,895,946
2	City Hall	50 West 13th Street, Dubuque, Iowa 52001	4,130,585
3	City Hall Annex Building	1300 Main St. City Hall Annex Dubuque, IA 52001	1,026,735
4	Dubuque County Courthouse	720 Central Avenue Dubuque	
5	Fire Station – Department Headquarters	11 W Ninth ST Dubuque 52001	2,312,710
6	Fire Station 2	2180 JFK Rd., Dubuque IA	956,626
7	Fire Station 3	3155 Central Ave., Dubuque IA	885,836
8	Fire Station 4	1697 University Ave., Dubuque IA	841,304
9	Fire Station 5	689 South Grandview, Dubuque IA	313,936
10	Fire Station 6	1500 Rhomberg Ave., Dubuque IA	318,038
11	Historic Federal Building	350 West 6th Street	18,154,961
12	American Red Cross	2400 Asbury Road Dubuque, IA 52001-3076	
13	Mississippi Valley Regional Blood Center	4867 Asbury Road Dubuque, IA 52001	
14	The Finley Hospital	350 North Grandview Avenue Dubuque, IA 52001	
15	Mercy Medical Center	250 Mercy Drive Dubuque, IA 52001	
16	Crescent Community Health Center	1789 Elm Street Dubuque, IA 52001	
17	Medical Associates East	1000 Langworthy Street	
18	Medical Associates West	1500 Associates Drive Dubuque, IA 52002	
19	Dubuque Internal Medicine	1515 Delhi St # 100	
20	VNA	1454 Iowa Street Dubuque	
21	Dubuque Municipal Services Center	925 Kerper Ct.	9,021,666
22	Dubuque Municipal Water plant, wells, remote pumping stations and storage tanks		40,632,858
23	Dubuque County Emergency Responder Training Facility	14928 Public Safety Way	
24	Dubuque Law Enforcement Center	770 Iowa St. Dubuque, IA 52001	
25	Grand River Center	500 Bell St Dubuque, IA 52001	30,288,575
26	Five Flags Civic Center	405 Main Street Dubuque, IA 52001	21,450,000
27	Water Pollution Control Plant, including lift stations		37,126,270
<b>WATER STORAGE FACILITIES IN THE CITY OF DUBUQUE</b>			
28	Eagle Point Park Water Tank – This is an elevated 500,000 gallon tank.	Eagle Point Park, Shiras Avenue	1,156,642
29	West Third Street Reservoir – This is an in-ground 7,500,000 gallon tank.	700 W. Third St.	1,938,468
30	Park Hill Water Tank – This is a 1,400,000 gallon stand pipe.	410 Gay St.	16,961,61
31	College Street Water Tank – This is an elevated 750,000 gallon tank.	W. Third and College Streets, next to The Finley Hospital	1,652,349
32	Asbury Water Tank – This is a 2,400,000 gallon stand pipe.	3036 Asbury Road.	2,907,702
33	Pennsylvania Water Tank – This is a	4100 Pennsylvania Avenue	2,907,702

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#	Critical Facility	Address	Replacement Value if Known in \$
	2,400,000 gallon stand pipe.		
34	Soccer Field Water Tank – this is a 1,250,000 gallon elevated composite tank.	3361 JFK Road next to the soccer complex	1,251,523
<b>OUTDOOR WARNING SIREN LOCATIONS</b>			
35	NE Corner of NW Arterial & Pennsylvania		24,000
36	Public Safety Way	14928 Public Safety Way	24,000
37	Rear of Siegert Funeral Home	2659 JFK	24,000
38	Traffic Control Island	JFK & Wacker Drive	24,000
39	Bunker Hill Golf Course	2200 Bunker Hill Road	24,000
40	University of Dubuque South of Chalmers Field and Baseball Fields (Access road adjacent to maintenance shop)		24,000
41	Rear of Church of Jesus Christ LDS	685 Fremont Ave	24,000
42	East 32 <sup>nd</sup> Street at edge of Flexsteel property	E. 32 <sup>nd</sup> St	24,000
43	Roosevelt Road at the bend	Across from 3251 Roosevelt Rd.	24,000
44	Kerper Blvd	East side of street 2300 block of Kerper Blvd	24,000
45	10 <sup>th</sup> Street between Iowa and Central	10 <sup>th</sup> Street	24,000
46	South Grandview & Grandview Heights	S. Grandview & Grandview Heights	24,000
47	Rear of American Trust Bank	2600 Rockdale Rd.	24,000
48	Thunder Ridge & Copper Mountain Ridge	Alpine Park	24,000
<b>BOOSTER STATIONS</b>			
49	Bunker Hill Pump Station	2500 Kaufmann Avenue	194,802
50	Mt. Carmel Booster Station	701 Mt. Carmel Road	2,222,538
51	Olympic Heights Booster Station	3885 Central Avenue	100,000
52	Stafford Street Booster Station	2550 Stafford Street	100,000
<b>DUBUQUE SCHOOLS: ELEMENTARY &amp; SECONDARY</b>			
53	Dubuque Administration Offices	2300 Chaney	5,000,000
54	Dubuque Schools Warehouse	2300 Chaney	2,700,000
55	Dubuque Schools Transportation	1350 W. Locust St.	1,324,000
56	Dubuque Schools Maintenance	2300 Chaney	1,249,000
57	Audubon School	605 Lincoln Avenue	
58	Bryant School	1280 Rush St.	
59	Carver School	2007 Radford Road Dubuque, IA 52002	
60	Eisenhower School	3170 Spring Valley Rd	
61	Fulton School	2540 Central Avenue	
62	Hoover School	3259 St Anne Drive	
63	Irving School	2520 Pennsylvania Avenue	
64	Kennedy School	2135 Woodland Drive	
65	Lincoln School	555 Nevada St	
66	Marshall School	1450 Rhomberg Avenue	
67	Prescott School	1151 White Street	

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

#	Critical Facility	Address	Replacement Value if Known in \$
68	Sageville Elementary	12015 Sherrill Road	5,769,000
69	Table Mound School	100 Tower Drive	
70	Keystone Area Educational Agency	2310 Chaney Road	
71	Holy Family/Holy Ghost Catholic Elementary	2105 Saint Joseph St	
72	Holy Family/Resurrection Elementary	4300 Asbury Rd	
73	Holy Family/St. Anthony's/Our Lady of Guadalupe Catholic Elementary Schools	2175 Rosedale Street	
74	Holy Family/St. Columbkille's Catholic Elementary	1240 Rush Street	
75	Dubuque Lutheran School K-5	2145 John F Kennedy Road	
76	Wahlert Catholic High School	2005 Kane Street Dubuque	
77	Stephen Hempstead High School	3715 Pennsylvania Ave	
78	Dubuque Senior High School	1800 Clarke Drive	
79	Jefferson Junior High School	2300 Chaney Road	
80	Roosevelt Junior High School	2001 Radford Road	
81	Washington Junior High School	51 North Grandview Avenue	
82	Mazzucchelli Middle School	2005 Kane Street	
<b>ACADEMIC COLLEGES &amp; UNIVERSITIES</b>			
83	Clarke University	1550 Clarke Dr	
84	Emmaus Bible College	2570 Asbury Road	
85	Loras College	1450 Alta Vista St	
86	Northeast Iowa Community College	700 Main St	
87	University of Dubuque	2000 University Ave.	
88	Wartburg College	333 Wartburg Place	
<b>TRANSPORTATION SYSTEMS</b>			
89	US Highway 20		
90	US Highway 52		
91	US Highway 61		
92	US Highway 151		
93	State Highway 32		
94	Chicago Central and Pacific Railroad Company		
95	Canadian Pacific Rail Systems		
96	Key Line Transit and Regional Transit Authority		
<b>LIFELINE UTILITY SYSTEMS</b>			
97	Alliant Energy		
98	Black Hills Natural Gas		
99	Qwest Communications		
100	Mediacom Communications		

## Durango

#	Critical Facility	Address	Estimated Replacement Value if Known in \$
1	Schemmel Residence	833 Highway 52N	
2	Warning Siren through Sherrill		

## Dyersville

#	Critical Facility	Address	Estimated Replacement Value if Known in \$
<b>STRUCTURES</b>			
1	City Hall	340 1st Ave E	\$2,707,864
2	Fire and Rescue Station	1503 6th St. SE	\$1,173,381
3	Mercy Medical Center – St. Mary’s Hospital	1111 3rd St. SW	
4	Wastewater Treatment Facility	23rd Ave SE	\$5,670,980
5	*Wells	Well House - 800 6th Ave NW	\$626,591
		Water Tower – 32161 Olde Castle Road	\$1,664,640
		8th St NW	\$905,000
		Well #2	\$175,411
6	Lift Stations	3rd St SW	\$94,600
		Reservoir – 9th St SE	\$1,419,400
		5th St NW	\$73,000
		13th St SE	\$68,000
		330th Ave	\$114,302
7	**Xavier School	203 2nd St. SW	
8	WD Kindergarten	625 3rd Ave SE	
9	Beckman High School	1325 9th Street Southeast	
<b>TRANSPORTATION SYSTEMS</b>			
10	*Bridges		
11	US Highway 20		
12	State Highway 136		
13	*North Beltline		
14	*Canadian Pacific Rail System rail lines		
<b>LIFELINE UTILITY SYSTEMS</b>			
15	Alliant Energy		
16	Black Hills Energy (Natural Gas)		
17	Telephone		

## Epworth

#	Name of Asset	Address	Replacement Value if Known in \$
1	Fire Station/City Hall	191 Jacoby Drive East	2,600,000

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

2	Police Station/Public Works	212 N Center Ave	695,000
3	Water Tower/Well 2	210 W Main	466,000
4	WWTF & Lift Station	9834 Bierman Rd	233,000
5	2 <sup>nd</sup> Lift Station	316 Second St NW	26,000
6	Epworth Acres Lift Station	634 Crownline	22,000
7	Well 3	212 N Center Ave	466,000
8	Well 4	322 E Main	42,000
9	Siren 1	322 E Main	21,000
10	Siren 2	200 5 <sup>th</sup> Ave	21,000
11	Community Center	110 Bierman Rd	500,000

## Farley

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#	Critical Facility	Address	Replacement Value if Known in \$
1	Water Tower/Well #1	202 2 <sup>nd</sup> St NE	407,875
2	Water Tower/Well #2	900 Janesmeier Rd.	1,029,230
3	Park Well #3	5 <sup>th</sup> Ave NE	30,253
4	Memorial Hall	202 1 <sup>st</sup> St NW	1,019,370
5	Fire/Ambulance Station	103 2 <sup>nd</sup> Ave NW	1,195,072
6	Seton School	210 2 <sup>nd</sup> Ave SE	2,610,000
7	Western Dubuque School	405 3 <sup>rd</sup> Ave NE	22,736,576
8	City Hall	301 1 <sup>st</sup> St SE	359,307
9	Waste Water Treatment Plant	900 1 <sup>st</sup> St NW	1,946,173
10	Lift Station (East Side)	806 1 <sup>st</sup> Ave SE	61,219
11	Lift Station (South Lake)	211 S. Lake Dr.	60,272
12	Farley Speedway	27317 Olde Farley Rd	2,500,000
13	Farley Maintenance Shop	208 1 <sup>st</sup> St. NW	323,363
14	Western Dubuque District Office	310 4 <sup>th</sup> St. SW	915,732
15	Western Dubuque Bus Garage	906 Jamesmeier Rd.	2,393,502

## Holy Cross

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#	Critical Facility	Address	Replacement Value if Known in \$
1	Fire Station	910 Church Street	592,000
2	School	835 Church Street	500,000
3	Water Tower	875 Church Street	496,000
4	Sewer System	Throughout the City	2,000,000
5	City Hall	938 Church Street	287,000
6	Lift Station	520 Main Street	162,000
7	Pump House for Water System	875 Church St.	50,000

## Luxemburg

#	Critical Facility	Address	Estimated Replacement Value if Known in \$
1	City Hall	202 S. Andres St.	150,000
2	Weather Siren		5,000
3	WWTF & 3 Lagoons		\$100,000
4	Ground Water Tank/Reservoir		\$600,000
5	Moser's 4-Way Service Center	101 Main St W	
6	Lift Station #1		\$50,000
7	Lift Station #2		\$50,000
8	Iowa Telecom Telephone Office	202 Andres Street	
9	US Cellular Tower		
10	New Century Communications		
11	Holy Trinity Church/School	103 S Audred	
12	Fidelity Bank & Trust	105 East Main Street	

## New Vienna

#	Critical Facility	Address	Replacement Value if Known in \$
1	Co-Op Oil Company	1829 Wente Road	
2	Co-Op LP Storage		
3	Water Tower		
4	New Vienna Metal Works	6869 Columbus Street	

## Peosta

#	Critical Facility	Address	Replacement Value if Known in \$
1	#2 Well/Water Tower	19179 Kapp Drive	1,000,000
2	#3 Well/Water Tower	8700 Tennis Lane	800,000
3	Northeast Iowa Community College (NICC)	10250 Sundown Road	
4	Peosta Elementary	8522 Burds Road	
5	Seton Catholic Church	7597 Burds Road	
6	St. John the Baptist Church	241 Peosta Street	
7	Fire Station	8579 Tennis Lane	500,000
8	Post Office	8554 Kapp Drive	
9	Wastewater Lagoons	19319 Kapp Drive	250,000
10	Peosta Community Center/City Hall	7896 Burds Road	10,000,000
11	Sports Complex	7896 Burds Road	400,000
12	Phone Box Substation		100,000
13	Main Lift Station	18006 Kapp Drive	160,000
14	NICC Lift Station	10250 Sundown Road	100,000
15	Peosta Acres Lift Station	738 Willow Ridge North	50,000

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

16	Highway 20 Lift Station	97 Peosta Community Parkway	50,000
17	Kapp Court Lift Station		50,000
18	Gingerbread Ridge Lift Station	Not yet constructed	100,000
19	Interstate Power Substation		
20	Public Works Building	8871 Enterprise Drive	520,000
21	Salt Storage Shed	8871 Enterprise Drive	30,000

### **Rickardsville**

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#	Critical Facility	Address	Replacement Value if Known in \$
1	St. Joseph Church	20245 St. Joseph Drive	
2	Sewer Plant	Klein Lane off Highway 52	
3	City Clerk's Home	20494 St. Joseph Drive	

### **Sageville**

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#	Critical Facility	Address	Replacement Value if Known in \$
1	Weather Warning Siren	US52 and Sherrill Rd.	\$25,000

### **Sherrill**

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#	Critical Facility	Address	Replacement Value if Known in \$
1	United Church of Christ	5309 S. Mound Road	
2	St. Peter and Paul Church	5131 Sherrill Rd	
3	Athletic Ball Field		
4	Sherill Catholic Parish Center	5501 S Mound Rd	
5	East Lagoon		
6	The Barn	5090 Sherrill Road	
7	Fire Station	5307 S Mound RD	
8	South Lagoon		
9	Spoerl Chevrolet	5026 Sherrill Road	
10	Dave's Welding Shop		
11	Sherill Feed & Supply	5082 Sherrill Road	
12	Moundside Bakery	5400 South Mound Road	
13	St. Matthews Church	2092 Garfield Ave	
14	City Park/Maintenance Shop	24709 Finleys Landing Rd	
15	Telephone Switching Station		
16	Richard Clemen Welding	5269 Balltown Road	
17	Sherrill Mutual Insurance	4954 Sherrill Road	
18	The Deer Shack	5232 Balltown Road	
19	City Park	24709 Finleys Landing Rd	

## Worthington

#	Critical Facility	Address	Replacement Value if Known in \$
1	City Hall/Fire Station	216 First Ave W	667,461
2	Wastewater Treatment Facility	Fifth Ave	1,204,863
3	Water Tower	Fourth Ave SE	633,618
4	Memorial Hall	300 Park Drive	808,743
5	St. Paul's Catholic School	209 Third Ave SW	
6	St. Paul's Catholic Church	301 Second Ave SW	
7	City Maintenance Shop	405 Third Ave SW	150,000
8	Iowa Telecom Telephone Building		
9	Aquila Natural Gas Substation		
10	Lift Station	Fifth Ave	80,000

## Zwingle

#	Critical Facility	Address	Replacement Value if Known in \$
1	Sewer Station	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 I](#) for a table of licensed daycare centers and preschools in the County. No other vulnerable population centers were identified in Asbury, Balltown, Bernard, Centralia, Graf, Holy Cross, New Vienna, Peosta, Rickardsville, Sherrill, and Zwingle however; the HMPT identified the following vulnerable population centers, by jurisdiction, in Dubuque County:

### Dubuque County

Generator Capability if Known	Name	Address	City
	Terrace Heights Mobile Home Park	4001 Peru Rd	Dubuque
	Alpine Park Community	425 Julien Dubuque Dr	Dubuque
	North End Mobile Home Park	17500 S John Deere	Dubuque

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

Generator Capability if Known	Name	Address	City
		Rd	
None	Table Mound Mobile Home Park	9442 Noonan St. #204	Dubuque
	Tower Hills	1019 Iris Court	Dubuque
None	Memory Acres	Lake Eleanor	Dubuque
	Ace Mobile Home Park	701 Cedar Cross Rd	Dubuque
	Lost Canyon Mobile Home Park	14907 Highway 20 West	Dubuque
	Super 20 Mobile Home Park	14674 N Cascade Rd	Dubuque
	Broadview Mobile Home Park	14671 N Cascade Rd	Dubuque
	Swiss Valley Nature Center & Park	13606 Swiss Valley Rd	Peosta
	New Melleray Abbey	6632 Melleray Circle	Peosta
	Fillmore Recreation Area	21655 Highway 151	Cascade
	Massey Marina	9526 Massey Marina Ln	Dubuque
	Our Lady of the Mississippi Abbey	8400 Abbey Hill Ln	Dubuque
	Lombardi Ballroom	7280 Route 52	Dubuque
	Graf Park	Graf Rd	Graf
	Lore Mobile Home Park	7005 Asbury Rd	Dubuque
	Mud Lake Park	22312 Golf Lake Rd	Dubuque
	Finley's Landing	24500 Finley's Landing Rd.	Dubuque
	Bankston Park	18000 Bankston Park Rd	Holy Cross
<b>Red Cross Designated Shelters</b>			
	Cascade Junior/Senior High	505 Johnson St NW	Cascade
	Cascade-Aquin Elementary	608 3rd Ave NW	Cascade
	Community Presbyterian Church	213 Polk St SE	Cascade
No	Audubon Elementary	605 Lincoln Ave	Dubuque
No	Bryant Elementary	1280 Rush	Dubuque
No	Carver, George W. Elementary	2007 Radford Rd	Dubuque
	Central High School	39 Bluff	
Yes	Dubuque Colts	1101 Central Ave	Dubuque
	Dubuque County Fairgrounds 4H CC	14583 Old Highway Rd	Dubuque
	Dubuque Five Flags Center	405 Main St	Dubuque
	Dubuque Fraternal Order of Eagles	1175 Century Dr	Dubuque
	Dubuque Masonic Temple	1155 Locust St	Dubuque
	Dubuque Moose Lodge	2635 Windsor Ave	Dubuque
	Dubuque Senior High	1800 Clarke Dr	Dubuque
No	Eisenhower Elementary	3170 Spring Valley Rd	Dubuque

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

<b>Generator Capability if Known</b>	<b>Name</b>	<b>Address</b>	<b>City</b>
	Fulton Elementary	2540 Central Ave	Dubuque
	Hempstead, Stephen High	3715 Pennsylvania Ave	Dubuque
	Holy Ghost School	2981 Central Ave	Dubuque
	Hoover Elementary	3259 St Anne Dr	Dubuque
	Irving Elementary	2520 Pennsylvania Ave	Dubuque
	Jefferson, Thomas Middle	1105 Althausen	Dubuque
	Jones Alternative School	1090 Alta Vista	Dubuque
	Kennedy Elementary	2135 Woodland Dr	Dubuque
	Lincoln Elementary	555 Nevada St	Dubuque
	Marshall Elementary	1450 Rhomberg Ave	Dubuque
	Mazzuchelli Middle School	2005 Kane St	Dubuque
Yes	Municipal Services Building	925 Kerper Ct	Dubuque
	Prescott Elementary	1151 White	Dubuque
	Resurrection School	4300 Asbury Rd	Dubuque
	Roosevelt, Eleanor Middle	2001 Radford Rd	Dubuque
	Sageville Elementary	12015 Sherrill	Dubuque
	St. Anthony School	2175 Rosedale	Dubuque
No	St. Columbkille School	1198 Rush St	Dubuque
	Table Mound Elementary	100 Tower Dr	Dubuque
	University of Dubuque	2000 University Ave	Dubuque
	Wahlert High School	2005 Kane St	Dubuque
	Washington, George Middle	51 N Grandview Ave	Dubuque
	New Hope Lutheran Church	106 12th Ave SW	Dyersville
	St Peter & Paul	1625 300th Ave	Dyersville
	St. Francis Xavier School	203 2nd St SW	Dyersville
Yes	Divine Word College	102 Jacoby Dr SW	Epworth
	Western Dubuque High School	302 5 <sup>th</sup> Ave SW	Epworth
	Epworth United Methodist Church	102 Main St	Epworth
	Drexler Elementary/Middle	405 3rd Ave NE	Farley
	Farley City Hall	202 1st St NW	Farley
	Seton Catholic – St Joseph’s	210 2nd Ave SE	Farley
	St Joseph's Catholic Church	206 1st St NW	Farley
	Holy Cross Rectory	875 Church St	Holy Cross
	RHCL Catholic School	100 W Main St	Luxemburg
	Holy Family Hall	16500 Holy Family Ln	Peosta
	Knights Acres	7270 Sundown Rd	Peosta
	Knights of Columbus	7270 Sundown Rd	Peosta
	Northeast Iowa Community College	10250 Sundown Rd	Peosta
	Seton Catholic--St John	10801 Sundown Rd	Peosta

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

<b>Generator Capability if Known</b>	<b>Name</b>	<b>Address</b>	<b>City</b>
	St John The Baptist Catholic Church	10709 Sundown Rd	Peosta
	St Joseph's Catholic Church	20249 St Joseph Dr	Rickardsville
	St Francis Catholic Church	5131 Sherrill Rd	Sherrill
	St Peter & Paul Catholic Church	5131 Sherrill Rd	Sherrill
	St. Paul School	309 3rd Ave SW	Worthington
<b>RETIREMENT HOMES IN DUBUQUE COUNTY</b>			
	Area Residential Care	1251 Adeline st	Dubuque
	Assissi Village	1001 Assissi Dr	Dubuque
	Ellen Kennedy Living Center	1177 7th St SW	Dyersville
	Oakcrest Nursing Home	1111 3rd St SW	Dyersville
	Mt Pleasant Home	1695 Mt Pleasant St	Dubuque
	Oak Park Place	1381 Oak Park Place	Dubuque
	River Bend Retirement Community	813 Tyler St	Cascade
	Stonehill Care Center	3485 Windsor Ave	Dubuque
	Sunnycrest Manor	2375 Roosevelt St	Dubuque
	Sunset Park Place Retirement Community	3730 Pennsylvania Ave	Dubuque
	Chateau Royale	32632 Rockville Rd	Worthington
	Dubuque Retirement Community	2700 Matthew John Dr	Dubuque
	Applewood I Senior Apartments	3125 Pennsylvania Ave	Dubuque
	Applewood II Senior Apartments	3175 Pennsylvania Ave	Dubuque
	Applewood III Senior Apartments	3225 Pennsylvania Ave	Dubuque
	Area Residential Care	1170 Roosevelt St Ext	Dubuque
	Area Residential Care	2417 Beacon Hill Dr	Dubuque
	Area Residential Care	2699 Becker Ct	Dubuque
	Area Residential Care	2085 Bunker Hill Rd	Dubuque
	Area Residential Care	761 Carriage Hill Dr	Dubuque
	Area Residential Care	3025 Castle Woods Ln	Dubuque
	Area Residential Care	2052 Concord Ct	Dubuque
	Area Residential Care	2429 Hacienda Dr	Dubuque
	Area Residential Care	12488 Kennedy Rd	Dubuque
	Area Residential Care	2129 Key Way	Dubuque
	Area Residential Care	400 Maplewood Ct	Dubuque
	Area Residential Care	2951 Pennsylvania Ave	Dubuque
	Area Residential Care	969 Spires Dr	Dubuque
	Area Residential Care	2455 Kerper Blvd	Dubuque

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

<b>Generator Capability if Known</b>	<b>Name</b>	<b>Address</b>	<b>City</b>
	Area Residential Care	2978 W 32nd St	Dubuque
	Bethany Home Retirement Center	1005 Lincoln Ave	Dubuque
	Ecumenical Tower	250 W 6th St	Dubuque
	Heritage Manor	4885 Asbury Rd	Dubuque
	Luther Manor Retirement Community	1890 John F Kennedy Rd	Dubuque
	Luther Manor Retirement Community	3131 Hillcrest Rd	Dubuque
	Luther Manor Retirement Community	3129 Hillcrest Rd	Dubuque
	Luther Manor Retirement Community	5900 Saratoga Rd	Dubuque
	Windsor Park	801 Davis St	Dubuque
	The Woodlands	3460 Starlite Dr	Dubuque
	St Mary's Apartments	2955 Kaufmann Ave	Dubuque

### **Bankston**

<b>Facility</b>	<b>Address</b>
Church Pavilion	24287 New Vienna Road
Church Hall	24287 New Vienna Road

### **Cascade**

<b>Facility</b>	<b>Address</b>
Shady Rest Care Facility	701 Jonson St. NW
Claddaugh Apartments	6th Ave NW
Senior citizens Center	109 1 <sup>st</sup> Ave W

### **Dubuque**

<b>Name</b>	<b>Address</b>
Mercy Medical Center	250 Mercy Drive
The Finley Hospital	350 North Grandview
Bethany Home	1005 Lincoln Avenue
Dubuque Nursing & Rehab Center	2935 Kaufmann Avenue
Ennoble Care	2000 Pasadena Drive
Heritage Manor	4885 Asbury Road
Luther Manor	3131 Hillcrest Road
Manor Care	901 West 3 <sup>rd</sup> Street
Stonehill Care Center	3485 Windsor Avenue
Cozy Corner Senior Daycare	2785 Pennsylvania Avenue
Sunnycrest Manor	2375 Roosevelt Street
Sunset Park Place	3730 Pennsylvania Avenue
Alverno Apartments	3525 Windsor Avenue

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

Name	Address
Applewood Senior Apartments	3125 and 3175 Pennsylvania Avenue
Assisi Village	1001 Assisi Drive
Bethany Home Retirement Center	1005 Lincoln Avenue
Mt. Pleasant Home	1695 Mt. Pleasant Street
Pleasant View Home	2720 Pleasant View Drive
Stonehill Franciscan Care Center	3485 Windsor Avenue
Windsor Park	801 Davis Street
The Woodlands	3460 Starlite Drive
Dubuque Retirement Community	2700 Matthew John Drive
Oak Park Place	1381 Oak Park Place
Caritas Center	1130 Carmel Drive
Mount Carmel	1100 Carmel Drive
BVM Sisters	1130 Carmel Drive
Holy Family Hall	3390 Windsor Avenue
Mt. Loretto	2360 Carter Road
Villa Raphael	1155 Mt. Loretta Avenue
Visitation Sisters	2950 Kaufmann Avenue
Maria House	1561 Jackson Street
Teresa Shelter	1111 Bluff Street
Salvia House	2160 Elm Street
Manasseh House	2080 Elm Street
Catholic Worker House	1592 Locust Street
The Dubuque Rescue Mission	398 Main Street, Dubuque
Washington Neighborhood Center	382 East 21 <sup>st</sup> Street
Area Residential Care & Workshop	3395 Kennedy Circle
Hills & Dales	3505 Stoneman Road
Kennedy Mall	555 J.F. Kennedy Road
Mystique Casino	1855 Greyhound Park Road
Diamond Jo Casino	301 Bell Street
Dubuque Five Flags Center	405 Main Street
Grand River Center	500 Bell Street
Dubuque Montessori School	2605 Pennsylvania Avenue
Grandview Methodist Preschool	3342 John Wesley Drive
Head-Start Operation New View	2155 University Avenue
Humpty Dumpty Preschool	2050 Rosemont Street
Kids of the Kingdom Preschool	2899 Hales Mill Road
Noah's Ark Preschool	1755 Delhi Street
Our Redeemer Preschool	2145 John F Kennedy Road
Resurrection Preschool	4300 Asbury Road
St. Anthony's/OLG Preschool	2175 Rosedale Avenue
McAleece Park & Recreation Center	1801 Admiral Sheehy Drive
Eagle Point Park	2601 Shiras Avenue
Miller-Riverview Park	1851 Admiral Sheehy Drive
Murphy Park	1700 South Grandview Avenue
Dubuque Arboretum & Marshall Park	3800 Arboretum Drive

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

Name	Address
Sutton Pool	1900 Hawthorne Street
Flora Park and Pool	2605 Pennsylvania Avenue
Veteran's Memorial Park	2700 Northview Drive
Washington Park	700 Locust Street
Pyatigorsk Park	16 <sup>th</sup> St & Kerper Blvd
Heritage Trail	22 <sup>nd</sup> & Elm Streets
AY McDonald Park	Hawthorne Street & Volunteer Drive
Roosevelt Park	14000 North Cascade Road
Bergfeld Recreation Area	7600 Chavenelle Drive
Terrace Heights Mobile Home Park	4001 Peru Road
Hawkeye (University Avenue) Mobile Home Park	2641 University Avenue
Midway Mobile Home Park	3100 Brunskill Road
Ace Mobile Home Park	701 Cedar Cross Road
Tower Hills Mobile Home Park	1019 Iris Court
Table Mound Mobile Home Park II & III	Rockdale Road
Alpine Park Mobile Home	4500 Mount Alpine
Dubuque Community Y Preschool and Daycare	35 North Booth Street, Dubuque, Iowa 52001
Trinity Square Day Care Center	1703 Rhomberg Avenue, Dubuque, Iowa 52001
Resurrection Children's Center	4300 Asbury Road, Dubuque, Iowa 52002
St. Columbkille's Child Care Center	1220 Rush Street, Dubuque, Iowa 52003
St. Joseph the Worker Child Care Center	2105 Saint Joseph Street, Dubuque, Iowa 52001
St. Mary's/St. Pat's Child Care Center	180 West 15 <sup>th</sup> Street, Dubuque, Iowa 52001
Frog Hollow (Kinderland) Preschool & Daycare	5005 Asbury Road, Dubuque, Iowa 52002
Little Rascals	1125 Rockdale Road, Dubuque, Iowa 52003
Piglet's Place Children's Center	3495 Windsor Avenue, Dubuque, Iowa 52001
Pooh's Corner Children's Center	3507 Keystone Drive, Dubuque, Iowa 52001
Frog Hollow (Prodigy Inc.) Preschool & Daycare	715 West Locust Street, Dubuque, Iowa 52001
Tigger's Den Children's Center	610 Duggan Drive, Dubuque, Iowa 52003
Young-Uns Child Care Center	3375 Kennedy Circle, Dubuque, Iowa 52002
Grand View Intergenerational Center	3342 John Wesley Drive, Dubuque, Iowa 52001
St. Anthony's/OLG Early Childhood Development Center	2175 Rosedale Avenue, Dubuque, Iowa 52001

### Dyersville

Name	Address
Ellen Kennedy Living Center	1177 Seventh St. SW
Head Start Development Center	750 Fifth St. NW
Kid Project Child Care Center	415 Ninth Ave. SW
Westside Park	3rd St SW
Northside Park	6th Ave NW
Candy Cane Park	2nd St & 3rd St SE
Mercy Medical Center Hospital and Nursing Home	1111 Third St. SW

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

St. Francis Xavier School	203 Second St. SW
Western Dubuque Elementary	813 12th Ave SW

### Epworth

Name	Address
Lamp Light Court Mobile Home Park	500 Second St NE

### Farley

Name	Address
Farley Elementary & Middle School	405 Third Avenue NE
New Hope Lutheran Church	502 Second Avenue SW
Farley Speedway	27317 Olde Farley Road
City Park	Park St. SW
West Side Park	Third Avenue SW & Seventh Street SW

### Luxemburg

Name	Address
St. LaSalle Preschool	100 W. Main Street

### Sageville

Name	Address
Valley Hill Trailer Park	11470 Rupp Hollow Rd.
Granada Mobile Home Park	11941 Route 52N

### Worthington

Name	Address
West Ridge Apartments	317 Second Ave SW

## Cultural and Historic Sites

Assessing the vulnerability of Dubuque 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.

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 Dubuque 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. A complete and continually updated list can be found at:

**<http://www.nationalregisterofhistoricplaces.com/ia/Dubuque/state.html>**

Historic and architectural surveys and archeological evaluations of Dubuque County's cultural resources provide information for hazard mitigation planning and disaster assistance. To receive federal disaster assistance, reviews of potential impacts to cultural resources for federally-funded projects are mandated under Section 106 of the National Historic Preservation Act.

Dubuque County has a rich heritage documented by archeological, historic and architectural sites and structures that are of local, regional, state and national significance. Surveys and evaluations of these resources assist with federal and state applications for disaster assistance.

Since 2000, nearly 5,000 structures in the City of Dubuque's historic districts, conservation districts, and conservation planning areas were evaluated. There are 659 structures in the City's 5 locally designated historic districts and 10 local landmarks that are also listed in the National Register of Historic Places.

The city limits of Dubuque encompass many of Dubuque County's nationally recognized cultural resources, including 1 of the 6 archeological districts, 10 of the 12 historic districts, and 45 of the 56 structures individually listed in the National Register. Two of the County's 3 National Historic Landmarks are in the city of Dubuque.

The Mines of Spain State Recreation Area consists of 1,387 acres of forest and prairie along the Mississippi River in Dubuque County on the south side of the city of Dubuque. The Mines of Spain is a National Historic Landmark with 5 archeological district listed in the National Register.

An inventory of National Register sites in Dubuque County is maintained by the National Park Service on the agency's website at **<http://www.nps.gov/history/places.htm>**.

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 Dubuque County.

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

Employer	Number of Employees
John Deere Dubuque Works	2,065
Dubuque Community Schools	1,946
Mercy Medical Center	1,324
IBM Corporation	1,300
Medical Associates Clinic, P.C.	999
The Finley Hospital	920
The City of Dubuque	686
Holy Family Catholic Schools	575
Prudential Retirement	550
Eagle Window & Doors	550

### 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 Climactic Data Center (NCDC),

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however, it should be noted that this is not a comprehensive record and does not fully indicate the number of events or losses in Dubuque 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 Dubuque County has few, if any, high hazard dams or levees.

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

There are no dams with a permanent pool of water that would impact the City of Dubuque. However, there are multiple storm-water detention basins within the city that are classified as dams as they will impound storm-water during heavy rains.

The regional Carter Road Detention Basin is classified by the Iowa Department of Natural Resources as a high-hazard dam because if it should fail it could “lead to the loss of human life or result in serious damage to residential, industrial or commercial areas, important public utilities, public building, or major transportation facilities.” Construction of the detention basin was completed in 2009. The City inspects the facility on an annual basis and after each heavy rain. The Iowa Department of Natural Resources inspects the facility every other year. Their last inspection was in 2011.

The North Fork of the Maquoketa River flows through the City of Cascade between Filmore and Pierce Streets. Several small ephemeral streams flow through the community into the North Fork of the Maquoketa River. Several mitigation measures have been undertaken to secure the structures from damage during flooding, but mitigation actions are ongoing still.

In the City of Dubuque, no events of levee failure or breach have occurred since the completion of its 6.4 mile long earth and concrete levee in 1973. FEMA certified Dubuque floodwall and levee system most recently in 2011.

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

Each community follows the flood plain regulations for their jurisdictions. Dubuque County specifies that you cannot build in a floodway, with exceptions for roads and bridges which require a FEMA-issued No Rise Certificate stating that the implementation of the bridge or roadway will not cause further flooding. The cities of Cascade and Dubuque are keenly aware of damage due to structures in the flood zone, but both have plenty of other areas of development available for dams and levees to not impede the cities growth.

### **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. Dubuque 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 City of Dyersville would be hit the hardest by a 100-year flood.

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

The best available data for flooding in Dubuque 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 Dubuque 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.

The City of Dyersville is at most risk to flood losses according to this analysis with more than 40% of all estimated losses in the County. And this does not include any losses that are estimated in the portion of Dyersville that is in Delaware County. The cities of Cascade and Zwingle also are located in two counties and this table shows losses for only the assets in Dubuque County.

**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
Cascade	\$6,000,000	\$6,205,000	\$167,000	\$2,000	\$16,000	\$0	\$104,000	\$104,000	\$12,598,000	14.87%
Dubuque	\$7,330,000	\$9,202,000	\$223,000	\$8,000	\$40,000	\$3,000	\$64,000	\$100,000	\$16,970,000	20.04%
Durango	\$302,000	\$153,000	\$0	\$0	\$0	\$0	\$0	\$0	\$455,000	0.54%
Dyersville	\$14,013,000	\$19,958,000	\$1,716,000	\$13,000	\$42,000	\$5,000	\$134,000	\$286,000	\$36,167,000	42.70%
New Vienna	\$1,803,000	\$1,665,000	\$67,000	\$0	\$0	\$0	\$0	\$8,000	\$3,543,000	4.18%
Sageville	\$640,000	\$294,000	\$0	\$0	\$0	\$0	\$7,000	\$1,000	\$942,000	1.11%
Uninc. Dubuque County	\$6,387,000	\$6,526,000	\$950,000	\$0	\$2,000	\$0	\$80,000	\$80,000	\$14,025,000	16.56%
<b>TOTAL</b>	<b>\$36,475,000</b>	<b>\$44,003,000</b>	<b>\$3,123,000</b>	<b>\$23,000</b>	<b>\$100,000</b>	<b>\$8,000</b>	<b>\$389,000</b>	<b>\$579,000</b>	<b>\$84,700,000</b>	<b>100.00%</b>

Source: HAZUS-MH MR5

Cities with no flood losses
Asbury
Balltown
Bankston
Bernard
Centralia
Epworth
Farley
Graf*
Holy Cross

Luxemburg
Peosta
Rickardsville
Sherrill
Worthington
Zwingle

\*due to incomplete flood data

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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.

### ***Flood Plain Maps and Repetitive Loss***

Appendix K shows the flood plain maps for each potentially affected jurisdiction. Unincorporated Dubuque County, the City of Dubuque, the City of Durango and the City of Dyersville have all experienced repetitive loss to structures. See Appendix K for full repetitive loss reports.

### ***Future Development***

The risk of flooding to future development in Dubuque 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.

## **3.4.5 Hailstorm**

### **Vulnerability Overview**

The Dubuque County planning area is equally vulnerable to hailstorms.

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

Dubuque County has, according to NCDC, has had 123 hail events in the past 60 years. Property and Crop Damage have been recorded since 1994 and during that time, Dubuque County has a recorded \$4.46 million in property damages. NCDC does not further categorize property damage, so it is not possible to estimate what portion of that nearly \$1 million came from structural damage, but the Planning Team thought it likely that a good portion would be from damage to homes and other buildings. Of the 61 hail events documented since 1994, the average damage per event was \$36,260.

### **Future Development**

Current development trends for Dubuque County are unlikely to substantively increase or decrease vulnerability to hailstorms.

### **3.4.6 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 Dubuque 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 Dubuque County, with the most rapid growth in Masonville. 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.

### **3.4.7 Thunderstorms & Lightning**

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

All of the planning area is vulnerable to lightning. National Climatic Database Center (NCDC) recorded 122 thunderstorm wind events in Dubuque County in the past 60 years but only \$41,000 recorded in crop damages. The HMPT considered lightning to be a public safety hazard with most damages occurring to electronic equipment located inside buildings. Communications equipment and warning transmitters and receivers could be knocked out by lightning strikes.

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

Specific dollar losses are not available for the widespread impacts that can occur to personal electronics equipment. NCDC cites more than \$1.8 million in property damage in approximately the past 15 years.

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

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

### **3.4.8 Tornado**

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

A tornado that causes widespread damage in Dubuque 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 there is one under construction and another community has submitted a grant application to FEMA for funding of a safe room.

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

Twenty-seven tornadoes have been documented by NCDC in Dubuque County in the past 60 years. Twenty injuries (but no deaths) were reported, along with \$32.5 million in property damages and \$20,000 in crop damages. A single event, an F4 tornado on March 13, 1990, caused \$25 million in property 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 Dubuque County should consider tornado hazards at the planning, engineering and architectural design stages.

### **3.4.9 Windstorm**

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

Windstorms in Dubuque 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 Dubuque 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.

**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 Dubuque 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 Dubuque 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 Dubuque 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, 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 Dubuque 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 Dubuque 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 Dubuque 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.

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.

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

**BOS = Board of Supervisors**  
**BOH = Board of Health**  
**COG = Council of Governments**  
**CSO = County Sheriff’s Office**  
**EMC = Emergency Management Coordinator**  
**GIS = Geographic Information Services Coordinator**  
**IT = Information Technology**  
**UC = Unincorporated Dubuque County**

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
Obtain and maintain a FEMA-approved Hazard Mitigation Plan for Dubuque County.	1	Unknown	12	Ongoing	ALL
Maintain or consider NFIP membership as required.	1	Unknown	3	Ongoing	ALL
Obtain or construct a new 911 communication center and emergency operations center to handle the increased call volume on a day-to-day basis as well as respond to natural disasters and emergencies affecting Dubuque County.	2	\$10 million	14	Long Term	ALL
Transition the emergency communications radio system from the current 800 MHz to an all-encompassing interoperable communications system to include voice, data, video, and other new technology which will meet the national APCO P25 system standards.	2	\$5million	7	Long Term	ALL
Maintain, enhance or install GIS System to better track critical facilities and vulnerable populations as well as respond to emergencies.	2	Unknown	13	Ongoing	ALL

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Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
Create and maintain call down list of all critical personnel.	3	Unknown	4	Short Term	ALL
Maintain procedure to backup all critical data to prevent loss in the event of hazard.	3	Unknown	16	Ongoing	ALL
Update snow and ice equipment as needed to better respond to snow and ice events.	1	Unknown	17	Ongoing	ALL
Update fire and rescue equipment as needed to better respond to emergencies.	2	Unknown	5	Ongoing	ALL
Provide backup power generators and wiring for critical facilities.	2	Unknown	18	Ongoing	ALL
Consider building a tornado safe room for all new construction.	2	Unknown	6	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	Unknown	8	Ongoing	ALL
Continue to maintain existing outdoor warning siren systems and ensure appropriate coverage for population.	2	Unknown	15	Ongoing	ALL
Obtain NOAA weather radios for every home in Dubuque County.	2	Unknown	10	Ongoing	ALL
Purchase barricades and signage as deemed necessary to better communicate information.	2	Unknown	9	Short Term	ALL
Train personnel as weather spotters.	4	Staff Time	2	Ongoing	ALL
Continue to improve public awareness of hazardous weather through newsletters, public notices, strolling signs, etc.	3	10,000	11	Ongoing	ALL
Continue to add needed infrastructure to mitigate	2	Unknown	1	Ongoing	ALL

<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
flood damage.					
Continue to monitor the effectiveness of severe winter weather policies and update as needed.	2	\$500	13	Ongoing	UC/Engineer, EMC, CSO
Continue to monitor the effectiveness of snow removal and ice control policies and update as needed.	2	\$500	18	Ongoing	UC/CSO, EMC, Engineer
Develop Emergency Alert Notification Systems for vulnerable unincorporated areas of Dubuque County (i.e. text alert, email, voice recording, etc.) to notify residents of pending/possible disasters.	4	Unknown	1	Long Term	UC/EMC, CSO
Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the County to provide power in the event of a power failure.	2	Unknown	21	Long Term	UC/EMC, Engineer
Maintain contract service and implement processes for off-site storage of information for backup access.	2	\$1,000	14	Ongoing	UC/IT
Continue to purchase and seek funding for communication tools such as Mobile Computer Terminals and 2-Way Radios.	2	\$3 million+	15	Long Term	UC/911 Board
Maintain the Business Continuity Plan to address day-to-day County business operations.	4	Unknown	8	Ongoing	UC/
Continue to improve radio and/or cell communication in Holy Cross fire department territory, such as alliances with commercial cell phone companies, IDOT or County towers.	3	Unknown	9	Ongoing	UC
Improve the drainage system of the Sageville/Couler Valley Drainage System. The	2	Unknown	22	Ongoing	UC/Engineer, COG, BOS, cities

<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
proposed project consistend of the grading and reshaping of the drainage area, protection of Flexsteel Industries for excess drainage, and construction of the Herber Road bridge and roadway elevation.					of Sageville and Dubuque
Work with the Iowa Department of Transportation (IDOT) to resolve flooding to the east of John Deere Road in the Sageville/Couler Valley Drainage System.	2	Unknown	19	Ongoing	UC/Engineer, BOS, City of Sageville, City of Dubuque
Continue to enforce the Floodplain Ordinances and monitor all construction activities that are located in or near a floodplain.	1	\$5,000	2	Ongoing	UC/Zoning
Continue to support the efforts of the COG in their mitigation actions to reduce flooding of the Little Maquoketa River basin.	1	\$0	20	Ongoing	UC/Zoning
Continue to support the efforts of the NRCS in Dubuque County to reduce flooding in flood prone areas and provision of educational information to farmers and use of BMPs.	1	\$500,000	16	Ongoing	UC/Zoning
Continue to maintain, promote and administer storm water retention ordinances with other jurisdictions and update as needed.	4	\$25,000	10	Ongoing	UC/Engineering, Zoning
Maintain an evacuation plan as referenced out of the Comprehensive Emergency Management Plan (CEMP).	3	\$1,000	3	Ongoing	UC/CSO, EMC
Continue to identify probable areas for potential hazards, assess traffic capacity of highways and roads, and identify shelters for the hazards and develop best routes for evacuations.	2	\$2,500	17	Ongoing	UC/CSO, EMC

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<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
Continue to maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	3	Unknown	11	Ongoing	UC/BOS, COG
Continue public awareness campaign, including educational programming, marketing, and public service announcements and advertising to inform the public regarding the proper procedure during a flood.	3	\$500	12	Ongoing	UC/CSO, EMC, Red Cross
Modify the Flood Plain Management Ordinance as necessary with a target of alleviating flooding.	4	Unknown	26	Ongoing	UC/Engineering
Purchase more barriers and floodgates to better block and inform drivers of flooded areas.	2	Unknown	25	Ongoing	UC/Engineering
Enforce plan to close roads during flood to prevent drivers from entering area.	1	\$1,000/ occurrence	4	Ongoing	UC/CSO, Engineering, IDOT
Install river gauges and/or river stream sensors to measure the height of water and better enable the County to monitor river levels and potential flooding.	2	\$3,000/unit to purchase + \$400/yr/unit to maintain	24	Long Term	UC/Engineer
Maintain Community Alert Network system that includes the auto-dial potential for all households and businesses in the line of a severe storm.	3	\$26,000/ annually	5	Ongoing	UC/EMC
Continue program to educate residents on NOAA indoor weather radios and provide a rebate program for a portion of the purchase price for residents, or distribute as available.	3	\$1,000	23	Ongoing	UC/EMC
Develop a Geographic Information System (GIS)	2	\$400	6	Short Term	UC/GIS

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
to provide detailed evacuation routes and shelter sites for throughout the County to be used internally by the EMA Coordinator to better direct in the event of a disaster.					
Develop Extreme Heat Plan.	4	\$1,500	24	Long Term	UC/BOH
Continue to monitor public roads of concern that may require maintenance or rebuilding and repair or rebuild as deemed necessary.	1	Unknown	7	Ongoing	UC/Engineering
Continue to use City Hall as a storm shelter and to consider the building of a safe room in conjunction with any new city building projects for the safety of current and future Asbury citizens.	1	NA	1	Ongoing	Asbury/ City Council
Continue to keep all seven backup generators in good repair and available.	2	\$12,600/yr	3	Ongoing	Asbury/Public Works
Purchase two additional generators for sewer lift stations as funds become available.	2	\$50,000/ Generator	7	Long Term	Asbury/Public Works
Build new lift stations with generators in place as determined by the City's continued growth.	2	Approx. \$250,000/ea	8	Long Term	Asbury/Public Works
Consider building a new city hall, police station and water tower to better serve the growing population of the City of Asbury.	2	Unknown	6	Long Term	Asbury/City Council
Continue to maintain snow removal policy, including no parking on city streets within 48 hours of a severe winter storm.	1	NA	4	Ongoing	Asbury/Public Works
Refrain from issuing burn permits in times of extreme heat or drought to prevent fires.	1	NA	5	Ongoing	Asbury/City Clerk
Continue to make the Fire Station available as a shelter space to persons in need on a temporary basis during periods of extreme heat.	4	NA	2	Ongoing	Asbury/Fire Dept

<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
Apply for Dubuque Racing Association Grant and any other available funding to replace weather warning siren.	2	\$15,000	1	Short Term	Balltown/Mayor/ Council/Clerk
Reconnect the city's weather siren.	2	Unknown	3	Short Term	Bankston
Explore the use of reverse 911 systems.	4	Unknown	2	Short Term	Bankston
Refer people who are suffering from the effects of extreme temperatures to Dubuque or Dyersville hospitals.	4	\$0	1	Ongoing	Bankston
Purchase backup generators and install hookups to provide electricity for the water supply and the main pumping station in the event of a power outage.	2		1	Short Term	Bernard
Continue to make Emergency Management Services building available in the event of a hazardous weather.	4	\$0		Ongoing	Bernard
Continue to employ Good Neighbor policy and Shelter in Place policy until better options are available.	4	\$0		Ongoing	Bernard
Continue to contact Dyersville and other communities to monitor flood levels upstream.	1	\$0		Ongoing	Cascade/City Administrator
Strategically place the flood pumps in drainage areas prone to flooding.	2	\$0		Ongoing	Cascade/ City Maintenance
Continue to enforce floodplain management ordinances	1	\$0		Ongoing	Cascade/ Zoning Administrator
Pursue application for future FEMA and State Funding for flood buyouts.	2	\$250,000		Ongoing	Cascade/City Adminstrator
Continue to maintain and operate current outdoor weather warning system.	3	\$2,500		Ongoing	Cascade/Public Works Director

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
Secure and place two new outdoor weather warning sirens to be strategically placed in the community.	2	\$38,000		Ongoing	Cascade/City Administrator
Continue training weather spotters through Cascade Fire Department.	4	\$0		Ongoing	Cascade/Fire Chief
Continue tornado drills in conjunction with schools and other institutions.	4	\$0		Ongoing	Cascade/Fire Chief
Install electrical distribution lines underground.	2	\$100,000/Annually		Ongoing	Cascade/Public Works Director
Pursue active maintenance in checking storm sewer system for debris.	2	\$0		Ongoing	Cascade/Public Works Director
Continue to utilize snow emergency ordinance.	1	\$0		Ongoing	Cascade/Public Works Director
Update sewer treatment plant to meet DNR standards.	2	Unknown		Short Term	Cascade/City Administrator
Rebuild or upgrade floodgates and culverts to prevent flooding.	2	\$120,000		Short Term	Cascade/City Administrator
Update and refurbish warning siren.	2	\$2,000	1	Short Term	Centralia/EMC/Mayor
Add water pump station.	2	Unknown	2	Long Term	Centralia/Mayor
Continue to maintain and update City's severe weather plan and winter weather plan on an annual basis.	4	\$1,000/Annually	1	Ongoing	Dubuque/EMA/Public Works
Continue to remove snow and ice from City streets, airport parking and City-owned parking lots per the snow and ice control plans.	4	\$1.25 million annually	2	Ongoing	Dubuque/Public Works/Airport
Continue maintenance review and enforcement of snow removal regulations and updating the ordinance regarding on-street parking following a	4	\$2,000 Annually	3	Ongoing	Dubuque/Public Works/Police/Parking

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
snow event.					
Continue to maintain 25 existing generators and infrastructure to operate city facilities in the event of a power outage.	4	\$55,000	4	Ongoing	Dubuque/Public Works/Water/Water Pollution Control/Fire/Building, Leisure Services
Continue to purchase and seek funding for communication tools such as Mobile Computer Terminals and 2-Way Radios.	2	Unknown	5	Ongoing	Dubuque/Public Safety
Maintain a Business Continuity Plan to address day-to-day City business operations.	4	\$350,000 (as part of a data backup budget)	6	Ongoing	Dubuque/IS/City Manager's Office
Encourage local news media to participate with the EMA staff and improve their emergency and severe storm weather coverage.	3	\$1,000 annually	7	Ongoing	Dubuque/EMA
Continue to monitor and work with local AM and FM radio stations and cable TV providers with direct EAS systems.	3	\$1,000 Annually	8	Ongoing	Dubuque/EMA
Continue to promote the use of NOAA indoor weather radios at residences, schools, hospitals, nursing homes, etc., throughout the City.	3	\$5,000	9	Ongoing	Dubuque/EMA
Continue to maintain, enforce and update building codes as needed.	1	\$506,000	10	Ongoing	Dubuque/Building Services
Maintain an evacuation plan as referenced in the CEMP.	4	Open	11	Ongoing	Dubuque/Police
Restore the Bee Branch Creek with open channel from the 24 <sup>th</sup> St. neighborhood to E. 16 <sup>th</sup>	2	\$42 million	12	Ongoing	Dubuque/Engineering

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
St. retention basin, including the acquisition of approximately 70 homes and businesses.					
Complete improvements to the North Fork Catfish Creek from Key Way Dr. to the Northwest Arterial, including the upsizing of culverts under Key Way Dr. and Rosemont St.	2	\$4 million	13	Ongoing	Dubuque/ Engineering
Continue ongoing maintenance and monitoring of the City of Dubuque's floodwall system as mandated by federal law.	4	\$50,000/ Annually	14	Ongoing	Dubuque/ Public Works
Maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	3	\$250	15	Ongoing	Dubuque/ Planning
Conduct Levee Flood Certification analysis to determine whether or not improvements are deemed necessary for the floodwall system.	2	\$175,000	16	Ongoing	Dubuque/Planning/ Public Works/ Engineering
Make required improvements based on the outcome of the Levee Flood Certification.	2	Unknown	17	Short Term	Dubuque/Planning/ Public Works/ Engineering
Conduct a Levee Breach Study to determine scenarios in the event of levee failure.	2	\$30,000	18	Ongoing	Dubuque/ Engineering
Develop evacuation plan based on Levee Breach Study.	4	Unknown	19	Short Term	Dubuque/ Engineering
Purchase portable generators and necessary equipment to use along floodwall in the event of a power outage.	2	\$1.1 million for 4 units and wiring	20	Short Term	Dubuque/ Public Works
Maintain and repair storm sewers as necessary.	2	\$350,000/ Annually	21	Ongoing	Dubuque/ Engineering/Public

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
					Works
Update and maintain Extreme Heat Plan.	1	\$1,000/Annually	22	Ongoing	Dubuque/Health Services
Continue to monitor public retaining walls of concern that may require maintenance or rebuilding.	4	Unknown	23	Ongoing	Dubuque/Engineering
Evaluate ownership and work with responsible entities to mitigate any hazardous situations related to retaining walls in the City of Dubuque.	3	\$2,000/Annually	24	Ongoing	Dubuque/Engineering
Continue to pursue flood mitigation including buyouts.	2	Unknown	1	Ongoing	Durango/Mayor & CC
Continue dialog with Dubuque County & DNR regarding flood mitigation pertaining to depth/width and debris in nearby waterways.	2	\$0	2	Ongoing	Durango/Mayor & CC
Continue acquisition of flood-damaged properties through current and future State- and FEMA-funded programs and/or other programs and marketing of the programs to floodplain residents.	2	Open		Ongoing	Dyersville/City Administrator
Continue flood watch protocol whereby river elevations are regularly monitored during potential flood events. Included in this protocol is the need to purchase cameras to assist in monitoring river levels from remote locations. The protocol includes defined responses to the various river elevations.	4	\$100,000 for cameras/\$1,000/yr to monitor		Short Term	Dyersville/Planning & Zoning Commission/City Staff
Continue the Flood Development Advisory Committee to review floodplain applications and provide input on process. The Committee will	4	Open		Ongoing	Dyersville/Planning & Zoning/City Staff

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
provide recommendations to city council as to whether or not to issue Building Permits.					
Continue to address storm water runoff through development agreements for all commercial industrial and residential subdivision developments. The Planning & Zoning Commission, along with City staff, will review developments and work to assure storm water runoff issues are addressed in development agreements when appropriate.	2	\$1,000/yr		Ongoing	Dyersville/Planning & Zoning/City Staff
Continue to enforce storm water ordinances.	1	NA		Ongoing	Dyersville/Planning & Zoning/City Staff
Continue to enforce Dyersville floodplain ordinance and National Flood Insurance Program regulations. The City Administrator is designated as the local Floodplain Manager and enforcement person.	1	NA		Ongoing	Dyersville/City Administrator
Continue to closely monitor development of land surrounding the City and potential for the creation of hazards to the City. The City Administrator will monitor and review land developments around the City and provide comments as appropriate.	3	\$1,000/yr		Ongoing	Dyersville/City Administrator
Continue to maintain storm sewer system including the dry runs that serve as open channel drainage ditches.	4	Open		Ongoing	Dyersville/Public Works
Upgrade wastewater treatment facility/system capacity to address issues experience during periods of heavy rains and floods.	2	Open		Short Term	Dyersville/Public Works
Continue to improve storm sewer system as a	2	Open		Ongoing	Dyersville/Public

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
component of the City's regular street improvement program.					Works
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. The Public Works Department Head will recommend improvements to the City Administrator for inclusion in the City budget as funding allows.	2	Open		Ongoing	Dyersville/Public Works
Continue to work with appropriate agencies to identify effective physical means to minimize flooding.	4	Open		Ongoing	Dyersville/Public Works
Continue to identify and publicize location and availability of storms shelters.	2	\$1,000/yr		Ongoing	Dyersville/Local EMD
Continue to encourage the National Weather Service to add a weather transmitter tower to their system or relocate their existing tower to better serve the City of Dyersville.	2	\$100/yr		Ongoing	Dyersville/County EMA
Continue to evaluate and monitor potential risks with utility placements.	4	\$1,000/yr		Ongoing	Dyersville/Public Works
Continue to remove dead trees/prune trees and clean areas vulnerable to high winds. The Public Works Department Head will monitor trees within City right-of-way and continue to remove dead trees/prune trees vulnerable to high winds.	4	\$1,000/yr		Ongoing	Dyersville/Public Works
Continue with debris management training in response to high winds.	4	\$2,000/yr		Ongoing	Dyersville/Public Works

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
Continue to maintain and improve protocol for response to ice storms including downed power lines, debris removal, contact lists, etc. The local Emergency Management Director and Public Works Department Head jointly coordinate the response to ice storms.	3	\$2,000/yr		Ongoing	Dyersville/Public Works
Continue to maintain upgrades of equipment in Capital Improvements Plan budget. All City department heads present equipment upgrade requests to the City Administrator as part of the City budget preparation for the Administrator's and City Council's consideration.	2	Open		Ongoing	Dyersville/All City Departments
Install Knox Boxes for all industrial and commercial buildings including schools.	4	\$5,000	9	Short Term	Epworth/ Public Works
Maintain access to sandbags for flood control.	4	\$0	12	Ongoing	Epworth/City Maintenance
Reconnect back flow preventers in the new construction developments.	2	\$0 (cost incurred by property owners)	14	Ongoing	Epworth/ Property Owners are responsible.
Install an additional encoder for testing and activating outdoor weather siren system.	2	\$4,200	15	Short Term	Epworth/ Fire Chief
Coordinate local tornado drill with schools through the local fire department.	3	\$0	10	Ongoing	Epworth/ Fire Chief
Continue to conduct education programs at schools during Fire Prevention Week.	3	\$0	11	Ongoing	Epworth/ Fire Chief
Continue to utilize debris cleanup from high winds.	4	\$0	17	Ongoing	Epworth/ Public Works
Continue to require underground burial of power	1	\$0	16	Ongoing	Epworth/

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
lines in new subdivisions.					Subdivision Developers
Evaluate generator needs for mobility to service lift station.	1	\$9,000	3	Short Term	Epworth/ Public Works
Continue training fire department personnel for Firefighting 1 certification.	4	\$0	8	Ongoing	Epworth/ Public Works
Continue to utilize Fire Station for accommodations for persons suffering from extreme heat or wind-chill conditions.	4	\$0	13	Ongoing	Epworth/ Fire Department
Oversee completion of 2 storm water studies to examine concerns in the northwest and southwest quadrants of the city.	2	\$30-\$40K	1	Short Term	Epworth/ Mayor & City Clerk
Implement mitigation actions recommended as result of storm water studies.	2	Unknown	2	Long Term	Epworth/ Mayor & City Council
Install generators and wiring at WWTF.	2	\$100,000	6	Short Term	Epworth/ Public Works
Continue flood proofing by relocating critical facilities and infrastructure (i.e. lift station).	2		5	Short Term	Epworth/ Public Works
Install generators at lift stations (x2)	2	\$15k/\$25k	7	Short Term	Epworth/ Public Works
Implement repairs to the sanitary sewer collection system based on results of smoke testing.	2	\$240,000	4	Short Term	Epworth/ Public Works
Purchase and install a tornado warning siren in northeast section of city near school and park.	2			Short Term	Farley/Mayor & CC
Place more storm inlets under railroad to take away rain water and prevent flooding.	2			Short Term	Farley/Mayor & CC
Install a new storm sewer on First Avenue.	2	\$260,000			Farley/Public

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
					Works
Acquire an outdoor weather siren to be located on the south side of Farley.	2	\$15,000			Farley/Farley EMA and Fire Chief
Acquire an 8,000 KW generator for Ambulance Service	2	\$3000			Farley/Public Works
Acquire a First Response Vehicle	2	\$85,000			Farley/Fire Chief
Acquire Class A Foam to fight fires.	2	\$2,000			Farley/Fire Chief
Upgrade the water supply to South Lake Subdivision	2	\$40,000			Farley/Public Works
Continue to use Farley City Hall as a facility to counter extreme temperatures for persons suffering from extreme temperatures.	4	\$0		Ongoing	Farley/City Staff
Ensure all residents in the community have NOAA indoor weather radios.	4	\$0	3	Ongoing	Graf/Mayor & CC
Continue to enforce burn ordinances	1	\$0	2	Ongoing	Graf/Mayor & CC
Continue to contract with the Epworth Fire Department for fire protection and training for Firefighter I Certification.	1	\$0	1	Ongoing	Graf/Mayor & CC
Continue to pursue FEMA and other funding opportunities to replace weather siren.	2	\$10,000	1	Ongoing	Holy Cross/Fire Department
Upgrade weather siren to one that includes battery backup.	2				Luxemburg/
Continue Good Neighbor Program where volunteers check on welfare of residents following a severe weather event.	4	\$0		Ongoing	Luxemburg/
Upgrade storm sewers to prevent flash flooding in times of heavy downfall of rain.	2	Unknown			Luxemburg/
Purchase new digital pagers for the fire department.	2				New Vienna/

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

Mitigation Action	Goal Referenced	Estimated Cost	Ranking	Completion Date	Jurisdictions Participating in the Action
Establish Good Neighbor program for winter storms.	4	\$0			New Vienna/
Continue to monitor river levels and areas that have experienced flash flooding in the past.	1			Ongoing	New Vienna/
Perform Coffee Creek bank stabilization near baseball diamond to prevent washing and to protect sewer lines.	2				New Vienna/
Build another access road on higher ground to waste water treatment facility.	2				New Vienna/
Purchase an all-terrain vehicle that will allow access to the WWTF during flash flooding.	2				New Vienna/
Continue to enforce flood plain ordinances.	1	\$0		Ongoing	New Vienna/
Continue to utilize Mercy St. Mary's in Dyersville, US Post Office and VFW Club in New Vienna as facilities for individuals suffering from extreme heat.	4	\$0		Ongoing	New Vienna/
Replace fire department's 20 year old pumper truck for new one that is up to code and reliable.	2				New Vienna
Provide storm drainage between Tennis Lane and Kapp Drive.	2				Peosta/
Provide storm drainage between Willow Ridge and Walnut Ridge.				Ongoing	Peosta/
Trim trees or remove trees that are potential risk to city properties and infrastructures.				Ongoing	Peosta/
Continue to participate in the 28E Agreement with the City of Peosta and Centralia/Peosta Fire Department for fire protection.	1	\$0		Ongoing	Peosta/
Install Knox Boxes for all industrial and commercial buildings including schools.	4	\$5,000		Ongoing	Peosta/

Dubuque County

Multi-Jurisdictional Hazard Mitigation Plan

<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
Utilize the Peosta Community Centre as a shelter for persons suffering from Extreme Heat.	4	\$0		Ongoing	Peosta/
Work on establishing and maintaining agreement with St. Joseph Parish to designate church hall as shelter for the community in the event of extreme heat or other hazards.	1	\$0	1	Short Term	Rickardsville/ Mayor & City Council
Continue to explore FEMA grant to assist in flood buyouts of damaged homes, land and mobile homes.		\$2.2 million	1	Long Term	Sageville/ Mayor & City Council
Continue to contract with the Sherrill Fire Association for Fire Protection.	1	\$0	1	Ongoing	Sherrill/Mayor
Utilize the Sherrill Fire Station with generator back up to accommodate citizens in the community during extreme heat or wind chill conditions.	1	\$0	2	Ongoing	Sherrill/Mayor & City Council
Pursue acquiring a backup generator for Memorial Hall to accommodate citizens in the event of a power failure as a result of a severe thunderstorm.	2	Unknown	1	Short Term	Worthington/ Mayor & City Council
Maintain fire hydrant with current flushing and testing programs in place.	3	4 days of labor	3	Ongoing	Worthington/Fire Department/Public Works
Continue to participate in the 28E Agreement with the Dubuque County/Delaware County Hazardous Materials Team.	1	\$0	5	Ongoing	Worthington
Accommodate citizens at the Community Center in the event of extreme heat.	3	\$0	6	Ongoing	Worthington
Keep two pallets of sand bags on hand in the event of flooding.	2	Minimal	4	Ongoing	Worthington/ Public Works

<b>Mitigation Action</b>	<b>Goal Referenced</b>	<b>Estimated Cost</b>	<b>Ranking</b>	<b>Completion Date</b>	<b>Jurisdictions Participating in the Action</b>
Work on agreements with the city, school and church to provide shelter agreements in the event of hazardous weather.	4	\$0	2	Short Term	Worthington/ Mayor & City Council
					Zwingle
Continue to work with FEMA on renovation of Hempstead High School and incorporation of Tornado Safe Room.	2	\$30,000,000	1	Short Term	Dubuque School Board
Develop policy to prevent construction in the floodplain of education buildings or supporting structures (such as bus barns or maintenance sheds).	1	\$0	2	Short Term	Dubuque School Board
Develop policy to prevent construction in the floodplain of education buildings or supporting structures (such as bus barns or maintenance sheds).	1	\$0	1	Short Term	Western Dubuque 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. The participating jurisdictions and agencies, led by Dubuque County Emergency Management, agree to:

- Monitor and evaluate best practices at Dubuque 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 HMPT is an advisory body and will not have any powers over County, Cities, Townships, or District staff. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, hearing stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information on the County website.

### 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 the 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 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 Dubuque County offices for citizens who requests to see it. The jurisdictions will continue to invite and involve Dubuque County residents 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

	A	B	C	D
1	<b>Dubuque County Hazard Mitigation Plan Meetings &amp; Participants</b>			
2				
3	<b>Date</b>	<b>Location</b>	<b>Participant</b>	<b>Jurisdiction/Affiliation</b>
4	1/10/2012	Sageville	Esser-Recker, Ruth	Sageville
5	1/10/2012	Sageville	Recker, Don	Sageville
6	1/10/2012	Sageville	Habel, Mary	Sageville
7	1/11/2012	Farley	Hefel, Jay R.	Farley
8	1/11/2012	Farley	Kramer, Rod	Farley
9	1/11/2012	Farley	Kramer, Dennis	Farley EMS
10	1/11/2012	Farley	Demmer, Charles	Farley EMS
11	1/11/2012	Farley	Bell, Randy	Farley EMS
12	1/11/2012	Farley	Berger, Thomas	Dubuque County EMA
13	1/11/2012	Farley	Einwalter, Bill	Farley
14	1/11/2012	Farley	Butler, Dan	Western Dubuque Schools
15	1/11/2012	Farley	Jarding, Joyce	Farley
16	1/11/2012	Farley	Simon, Jeff	Farley
17	1/24/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
18	1/24/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
19	1/24/2012	Dubuque Fire Training Center	Matthis, William	Graf
20	1/24/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
21	1/24/2012	Dubuque Fire Training Center	Sweeney, Donna	Holy Cross
22	1/24/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
23	1/24/2012	Dubuque Fire Training Center	Stephen, Ray	Peosta
24	1/24/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta
25	1/24/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
26	1/24/2012	Dubuque Fire Training Center	Klostermann, John	Dubuque City
27	1/24/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
28	1/24/2012	Dubuque Fire Training Center	Schiesl, Bob	Dubuque City
29	1/24/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
30	1/24/2012	Dubuque Fire Training Center	Michels, Mick	Dyersville
31	1/24/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
32	1/24/2012	Dubuque Fire Training Center	Hingtgen, Bob	Western Dubuque Schools
33	1/24/2012	Dubuque Fire Training Center	Gehl, Randy	Dubuque City
34	1/24/2012	Dubuque Fire Training Center	Brekke, Michael	Dubuque City
35	1/24/2012	Dubuque Fire Training Center	Berger, Thomas	Dubuque County EMA
36	1/24/2012	Dubuque Fire Training Center	Kramer, Ronnie	Epworth
37	1/24/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
38	1/24/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
39	1/26/2012	Durango	Walker, Jennifer	ECIA
40	1/26/2012	Durango	Schemmel, Margaret	Durango
41	1/26/2012	Durango	Schemmel, James	Durango
42	1/26/2012	Durango	Peterson, Michelle	Durango resident
43	1/26/2012	Durango	Peterson, John	Durango resident
44	2/1/2012	Rickardsville	Walker, Jennifer	ECIA
45	2/1/2012	Rickardsville	Paisley, Gene	Rickardsville

	A	B	C	D
46	2/1/2012	Rickardsville	Kettmann, Matt	Rickardsville
47	2/1/2012	Rickardsville	Wilgenbusch, Melvin	Rickardsville
48	2/1/2012	Rickardsville	Cleary, Vicky	Rickardsville
49	2/1/2012	Rickardsville	Cleary, Steve	Rickardsville
50	2/2/2012	Epworth	Walker, Jennifer	ECIA
51	2/2/2012	Epworth	Berger, Thomas	Epworth Fire Department
52	2/2/2012	Epworth	Hoerner, Lee	Epworth
53	2/2/2012	Epworth	Reuter, Jacob	Epworth
54	2/2/2012	Epworth	Berger, Janet	Epworth
55	2/2/2012	Epworth	Kremer, Paul	Private Contractor
56	2/2/2012	Epworth	Puccio, Donna	Divine Word College
57	2/2/2012	Epworth	Hosch, Larry	Epworth
58	2/2/2012	Epworth	Laughlin, Lois	Epworth resident
59	2/2/2012	Epworth	Laughlin, Al	Epworth Garden Club
60	2/2/2012	Epworth	Demmer, Ryan	Epworth
61	2/2/2012	Epworth	Kauffmann, Jim	Epworth
62	2/2/2012	Epworth	Kramer, Ronnie	Epworth
63	2/6/2012	Epworth	Mueller, Kyle	Epworth Fire Department
64	2/6/2012	Epworth	Schipper Kyle	Epworth Fire Department
65	2/6/2012	Epworth	Kramer, Shannon	Epworth Fire Department
66	2/6/2012	Epworth	Mueller, Evan	Epworth Fire Department
67	2/6/2012	Epworth	Dougherty, Ron	Epworth Fire Department
68	2/6/2012	Epworth	Refe, Jacob	Epworth Fire Department
69	2/6/2012	Epworth	Wilgenbusch, Larry	Epworth Fire Department
70	2/6/2012	Epworth	Rosenow, Kelly	Epworth Fire Department
71	2/6/2012	Epworth	Theisen, Kyle	Epworth Fire Department
72	2/6/2012	Epworth	Wilgenbusch, Gary	Epworth Fire Department
73	2/6/2012	Epworth	Silker, Steve	Epworth Fire Department
74	2/6/2012	Epworth	Kluesner, Todd	Epworth Fire Department
75	2/6/2012	Epworth	Beitzel, Dennis	Epworth Fire Department
76	2/6/2012	Epworth	Boevers, Reid	Epworth Fire Department
77	2/6/2012	Epworth	Kennedy, Ryan	Epworth Fire Department
78	2/6/2012	Epworth	Ernzen, Dan	Epworth Fire Department
79	2/6/2012	Epworth	Sprengelmeyer, Andrew	Epworth Fire Department
80	2/6/2012	Epworth	Morgan, Andrew	Epworth Fire Department
81	2/6/2012	Epworth	Heiberger, Michael	Epworth Fire Department
82	2/6/2012	Epworth	Kramer, Dan	Epworth Fire Department
83	2/6/2012	Epworth	Berger, Marty	Epworth Fire Department
84	2/6/2012	Epworth	Bohle, Jeff	Epworth Fire Department
85	2/6/2012	Epworth	Kramer, Ronnie	Epworth Fire Department
86	2/6/2012	Epworth	Snyder, Dale	Epworth Fire Department
87	2/6/2012	Epworth	Berger, Thomas	Epworth Fire Department
88	2/7/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
89	2/7/2012	Dubuque Fire Training Center	McAuliffe, Brad	Holy Cross Fire Department
90	2/7/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
91	2/7/2012	Dubuque Fire Training Center	Avenarius, Tom	Asbury Fire Department

	A	B	C	D
92	2/7/2012	Dubuque Fire Training Center	Westhoff, Henry	New Vienna Fire Department
93	2/7/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
94	2/7/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
95	2/7/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta Fire Department
96	2/7/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
97	2/7/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department
98	2/7/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
99	2/7/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
100	2/7/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
101	2/7/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
102	2/7/2012	Dubuque Fire Training Center	Wuertzer, Michael	Centralia Fire Department
103	2/7/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
104	2/14/2012	Balltown	Walker, Jennifer	ECIA
105	2/14/2012	Balltown	Sigwarth, Herb	Balltown
106	2/14/2012	Balltown	Mauer, Loras	Balltown
107	2/14/2012	Balltown	Schmitt, Ronald	Balltown
108	2/14/2012	Balltown	Hoppenworth, Dennis	Balltown
109	2/14/2012	Balltown	Walker, Jennifer	ECIA
110	2/14/2012	Balltown	Wuertzer, Jean	Centralia
111	2/14/2012	Balltown	Wuertzer, Michael	Centralia
112	2/17/2012	Worthington City Hall	Walker, Jennifer	ECIA
113	2/17/2012	Worthington City Hall	Habel, Mary	Worthington
114	2/17/2012	Worthington City Hall	Hosch, Todd	Worthington
115	2/17/2012	Worthington City Hall	Engler, Mike	Worthington
116	2/17/2012	Worthington City Hall	Lyons, Frank Jr.	Worthington
117	3/22/2012	Cascade	Walker, Jennifer	ECIA
118	3/22/2012	Cascade	Long, Tim	Cascade
119	3/22/2012	Cascade	Annis, Shelley	Cascade
120	3/22/2012	Cascade	Kearney, Pat	Cascade
121	3/22/2012	Cascade	Hoffmann, Marty	Cascade
122	3/22/2012	Cascade	Frasher, Ben	Cascade
123	3/22/2012	Cascade	Henry, Mike	Cascade
124	3/22/2012	Cascade	Gehl, Phil	Cascade
125	3/22/2012	Cascade	Moriarity, Robert	Cascade
126	3/22/2012	Cascade	Heim, Fredrick	Cascade
127	4/4/2012	Cascade	Walker, Jennifer	ECIA
128	4/4/2012	Cascade	Annis, Shelley	Cascade
129	4/4/2012	Cascade	Hoffmann, Marty	Cascade
130	4/4/2012	Cascade	Frasher, Ben	Cascade
131	4/4/2012	Cascade	Henry, Mike	Cascade
132	4/4/2012	Cascade	Gehl, Phil	Cascade
133	4/4/2012	Cascade	Kearney, Pat	Cascade
134	4/4/2012	Cascade	Moriarity, Robert	Cascade
135	4/4/2012	Cascade	Long, Tim	Cascade
136	5/1/2012	Dubuque Fire Training Center	Benda, Marty	Farley Fire Department
137	5/1/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department

	A	B	C	D
138	5/1/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
139	5/1/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
140	5/1/2012	Dubuque Fire Training Center	David, Todd	Sherrill Fire Department
141	5/1/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
142	5/1/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
143	5/1/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
144	5/1/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
145	5/1/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
146	5/1/2012	Dubuque Fire Training Center	Hosch, Gene	New Vienna Fire Department
147	5/1/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
148	5/1/2012	Dubuque Fire Training Center	Hess, Gerald	Peosta
149	5/1/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta
150	5/1/2012	Dubuque Fire Training Center	Lahey, Frank	Sherrill Fire Department
151	5/1/2012	Dubuque Fire Training Center	Jaeger, Nick	Sherrill Fire Department
152	5/1/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
153	5/1/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
154	5/9/2012	Dubuque County/ECIA	Walker, Jennifer	ECIA
155	5/9/2012	Dubuque County/ECIA	Habel, Mary	Sageville
156	5/9/2012	Dubuque County/ECIA	Britton, David	Citizen
157	5/9/2012	Dubuque County/ECIA	Recker, Don	Sageville
158	5/9/2012	Dubuque County/ECIA	Esser-Recker, Ruth	Sageville
159	5/9/2012	Dubuque County/ECIA	Brennan, Doug	Citizen
160	5/9/2012	Dubuque County/ECIA	Arnesdorf, Elmer	Citizen
161	5/9/2012	Dubuque County/ECIA	Brown, David L.	Citizen
162	5/9/2012	Dubuque County/ECIA	Brown, Donna J.	Citizen
163	5/9/2012	Dubuque County/ECIA	Brown, Janet	Citizen
164	5/9/2012	Dubuque County/ECIA	Cupps, Tim	Citizen
165	5/9/2012	Dubuque County/ECIA	Houle, Faith	Citizen
166	5/9/2012	Dubuque County/ECIA	Bartella, Sara	Citizen
167	5/9/2012	Dubuque County/ECIA	Schmitt, Kevin	Citizen
168	5/9/2012	Dubuque County/ECIA	Schmitt, Donna	Citizen
169	5/9/2012	Dubuque County/ECIA	Houselog, Jessica	Citizen
170	5/9/2012	Dubuque County/ECIA	Jellison, Tina	Citizen
171	5/9/2012	Dubuque County/ECIA	Bauer, Heather	Citizen
172	5/9/2012	Dubuque County/ECIA	Maas, Helen G.	Citizen
173	5/9/2012	Dubuque County/ECIA	Noonan, Clarence	Citizen
174	5/9/2012	Dubuque County/ECIA	Morris, Corrine	Citizen
175	5/9/2012	Dubuque County/ECIA	Whelan, Russ	Citizen
176	6/5/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
177	6/5/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
178	6/5/2012	Dubuque Fire Training Center	Snyder, Karen	Peosta
179	6/5/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
180	6/5/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
181	6/5/2012	Dubuque Fire Training Center	Long, Tim	Cascade
182	6/5/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
183	6/5/2012	Dubuque Fire Training Center	Burkhart, Bill	Dubuque Community Schools

	A	B	C	D
184	6/5/2012	Dubuque Fire Training Center	Simpson, Rhonda	Dubuque Community Schools
185	6/5/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
186	6/5/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
187	6/5/2012	Dubuque Fire Training Center	Maiers, Brian	Holy Cross
188	6/5/2012	Dubuque Fire Training Center	Monk, Christy	FEH Associates
189	6/5/2012	Dubuque Fire Training Center	Carstens, Laura	Dubuque City
190	6/5/2012	Dubuque Fire Training Center	Einwalter, Bill	Farley
191	6/5/2012	Dubuque Fire Training Center	Simon, Jeff	Farley
192	6/5/2012	Dubuque Fire Training Center	Davidshofer, Joe	Bankston
193	6/5/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
194	6/5/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
195	6/5/2012	Dubuque Fire Training Center	Snyder, Dale	Dubuque County
196	6/5/2012	Dubuque Fire Training Center	Preston, Brian	Dubuque County
197	6/5/2012	Dubuque Fire Training Center	Wilkinson, Bret	Dubuque County
198	6/5/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
199	6/5/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
200	6/5/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
201	6/22/2012	ECIA	Walker, Jennifer	ECIA
202	6/22/2012	ECIA	Mahoney, Karla	Bernard & Zwingle City Clerk

	A	B	C	D
1	<b>Dubuque County Hazard Mitigation Plan Meetings &amp; Participants</b>			
2				
3	<b>Date</b>	<b>Location</b>	<b>Participant</b>	<b>Jurisdiction/Affiliation</b>
4	1/24/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
5	6/5/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
6	2/7/2012	Dubuque Fire Training Center	Avenarius, Tom	Asbury Fire Department
7	2/14/2012	Balltown	Hoppenworth, Dennis	Balltown
8	2/14/2012	Balltown	Mauer, Loras	Balltown
9	2/14/2012	Balltown	Schmitt, Ronald	Balltown
10	1/24/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
11	2/14/2012	Balltown	Sigwarth, Herb	Balltown
12	6/5/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
13	6/5/2012	Dubuque Fire Training Center	Davidshofer, Joe	Bankston
14	6/22/2012	ECIA	Mahoney, Karla	Bernard
15	3/22/2012	Cascade	Annis, Shelley	Cascade
16	4/4/2012	Cascade	Annis, Shelley	Cascade
17	3/22/2012	Cascade	Frasher, Ben	Cascade
18	4/4/2012	Cascade	Frasher, Ben	Cascade
19	3/22/2012	Cascade	Gehl, Phil	Cascade
20	4/4/2012	Cascade	Gehl, Phil	Cascade
21	3/22/2012	Cascade	Heim, Fredrick	Cascade
22	3/22/2012	Cascade	Henry, Mike	Cascade
23	4/4/2012	Cascade	Henry, Mike	Cascade
24	3/22/2012	Cascade	Hoffmann, Marty	Cascade
25	4/4/2012	Cascade	Hoffmann, Marty	Cascade
26	3/22/2012	Cascade	Kearney, Pat	Cascade
27	4/4/2012	Cascade	Kearney, Pat	Cascade
28	3/22/2012	Cascade	Long, Tim	Cascade
29	4/4/2012	Cascade	Long, Tim	Cascade
30	6/5/2012	Dubuque Fire Training Center	Long, Tim	Cascade
31	3/22/2012	Cascade	Moriarity, Robert	Cascade
32	4/4/2012	Cascade	Moriarity, Robert	Cascade
33	2/14/2012	Balltown	Wuertzer, Jean	Centralia
34	2/14/2012	Balltown	Wuertzer, Michael	Centralia
35	2/7/2012	Dubuque Fire Training Center	Wuertzer, Michael	Centralia Fire Department
36	5/9/2012	Dubuque County/ECIA	Arnesdorf, Elmer	Citizen
37	5/9/2012	Dubuque County/ECIA	Bartella, Sara	Citizen
38	5/9/2012	Dubuque County/ECIA	Bauer, Heather	Citizen
39	5/9/2012	Dubuque County/ECIA	Brennan, Doug	Citizen
40	5/9/2012	Dubuque County/ECIA	Britton, David	Citizen
41	5/9/2012	Dubuque County/ECIA	Brown, David L.	Citizen
42	5/9/2012	Dubuque County/ECIA	Brown, Donna J.	Citizen
43	5/9/2012	Dubuque County/ECIA	Brown, Janet	Citizen
44	5/9/2012	Dubuque County/ECIA	Cupps, Tim	Citizen
45	5/9/2012	Dubuque County/ECIA	Houle, Faith	Citizen

	A	B	C	D
46	5/9/2012	Dubuque County/ECIA	Houselog, Jessica	Citizen
47	5/9/2012	Dubuque County/ECIA	Jellison, Tina	Citizen
48	5/9/2012	Dubuque County/ECIA	Maas, Helen G.	Citizen
49	5/9/2012	Dubuque County/ECIA	Morris, Corrine	Citizen
50	5/9/2012	Dubuque County/ECIA	Noonan, Clarence	Citizen
51	5/9/2012	Dubuque County/ECIA	Schmitt, Donna	Citizen
52	5/9/2012	Dubuque County/ECIA	Schmitt, Kevin	Citizen
53	5/9/2012	Dubuque County/ECIA	Whelan, Russ	Citizen
54	2/2/2012	Epworth	Puccio, Donna	Divine Word College
55	1/24/2012	Dubuque Fire Training Center	Brekke, Michael	Dubuque City
56	1/24/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
57	6/5/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
58	6/5/2012	Dubuque Fire Training Center	Carstens, Laura	Dubuque City
59	1/24/2012	Dubuque Fire Training Center	Gehl, Randy	Dubuque City
60	1/24/2012	Dubuque Fire Training Center	Klostermann, John	Dubuque City
61	1/24/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
62	6/5/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
63	1/24/2012	Dubuque Fire Training Center	Schiesl, Bob	Dubuque City
64	6/5/2012	Dubuque Fire Training Center	Burkhart, Bill	Dubuque Community Schools
65	6/5/2012	Dubuque Fire Training Center	Simpson, Rhonda	Dubuque Community Schools
66	2/7/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
67	5/1/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
68	6/5/2012	Dubuque Fire Training Center	Preston, Brian	Dubuque County
69	6/5/2012	Dubuque Fire Training Center	Snyder, Dale	Dubuque County
70	2/7/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
71	5/1/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
72	6/5/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
73	6/5/2012	Dubuque Fire Training Center	Wilkinson, Bret	Dubuque County
74	1/11/2012	Farley	Berger, Thomas	Dubuque County EMA
75	1/24/2012	Dubuque Fire Training Center	Berger, Thomas	Dubuque County EMA
76	1/26/2012	Durango	Schemmel, James	Durango
77	1/26/2012	Durango	Schemmel, Margaret	Durango
78	1/26/2012	Durango	Peterson, John	Durango resident
79	1/26/2012	Durango	Peterson, Michelle	Durango resident
80	1/24/2012	Dubuque Fire Training Center	Michels, Mick	Dyersville
81	2/7/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
82	5/1/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
83	1/24/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
84	1/26/2012	Durango	Walker, Jennifer	ECIA
85	2/1/2012	Rickardsville	Walker, Jennifer	ECIA
86	2/2/2012	Epworth	Walker, Jennifer	ECIA
87	2/14/2012	Balltown	Walker, Jennifer	ECIA
88	2/14/2012	Balltown	Walker, Jennifer	ECIA
89	2/17/2012	Worthington City Hall	Walker, Jennifer	ECIA
90	3/22/2012	Cascade	Walker, Jennifer	ECIA
91	4/4/2012	Cascade	Walker, Jennifer	ECIA

	A	B	C	D
92	5/9/2012	Dubuque County/ECIA	Walker, Jennifer	ECIA
93	6/5/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
94	6/22/2012	ECIA	Walker, Jennifer	ECIA
95	1/24/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
96	2/2/2012	Epworth	Berger, Janet	Epworth
97	6/5/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
98	2/2/2012	Epworth	Demmer, Ryan	Epworth
99	2/2/2012	Epworth	Hoerner, Lee	Epworth
100	2/2/2012	Epworth	Hosch, Larry	Epworth
101	2/2/2012	Epworth	Kauffmann, Jim	Epworth
102	1/24/2012	Dubuque Fire Training Center	Kramer, Ronnie	Epworth
103	2/2/2012	Epworth	Kramer, Ronnie	Epworth
104	2/2/2012	Epworth	Reuter, Jacob	Epworth
105	2/6/2012	Epworth	Beitzel, Dennis	Epworth Fire Department
106	2/6/2012	Epworth	Berger, Marty	Epworth Fire Department
107	2/2/2012	Epworth	Berger, Thomas	Epworth Fire Department
108	2/6/2012	Epworth	Berger, Thomas	Epworth Fire Department
109	2/7/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
110	5/1/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
111	6/5/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
112	2/6/2012	Epworth	Boevers, Reid	Epworth Fire Department
113	2/6/2012	Epworth	Bohle, Jeff	Epworth Fire Department
114	2/6/2012	Epworth	Dougherty, Ron	Epworth Fire Department
115	2/6/2012	Epworth	Ernzen, Dan	Epworth Fire Department
116	2/6/2012	Epworth	Heiberger, Michael	Epworth Fire Department
117	2/6/2012	Epworth	Kennedy, Ryan	Epworth Fire Department
118	2/6/2012	Epworth	Kluesner, Todd	Epworth Fire Department
119	2/6/2012	Epworth	Kramer, Dan	Epworth Fire Department
120	2/6/2012	Epworth	Kramer, Ronnie	Epworth Fire Department
121	2/6/2012	Epworth	Kramer, Shannon	Epworth Fire Department
122	2/6/2012	Epworth	Morgan, Andrew	Epworth Fire Department
123	2/6/2012	Epworth	Mueller, Evan	Epworth Fire Department
124	2/6/2012	Epworth	Mueller, Kyle	Epworth Fire Department
125	2/7/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
126	5/1/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
127	2/6/2012	Epworth	Refe, Jacob	Epworth Fire Department
128	2/6/2012	Epworth	Rosenow, Kelly	Epworth Fire Department
129	2/6/2012	Epworth	Schipper Kyle	Epworth Fire Department
130	2/6/2012	Epworth	Silker, Steve	Epworth Fire Department
131	2/6/2012	Epworth	Snyder, Dale	Epworth Fire Department
132	2/6/2012	Epworth	Sprengelmeyer, Andrew	Epworth Fire Department
133	2/6/2012	Epworth	Theisen, Kyle	Epworth Fire Department
134	2/6/2012	Epworth	Wilgenbusch, Gary	Epworth Fire Department
135	2/6/2012	Epworth	Wilgenbusch, Larry	Epworth Fire Department
136	2/2/2012	Epworth	Laughlin, Al	Epworth Garden Club
137	2/2/2012	Epworth	Laughlin, Lois	Epworth resident

	A	B	C	D
138	1/11/2012	Farley	Einwalter, Bill	Farley
139	6/5/2012	Dubuque Fire Training Center	Einwalter, Bill	Farley
140	1/11/2012	Farley	Hefel, Jay R.	Farley
141	1/11/2012	Farley	Jarding, Joyce	Farley
142	1/11/2012	Farley	Kramer, Rod	Farley
143	1/11/2012	Farley	Simon, Jeff	Farley
144	6/5/2012	Dubuque Fire Training Center	Simon, Jeff	Farley
145	1/11/2012	Farley	Bell, Randy	Farley EMS
146	1/11/2012	Farley	Demmer, Charles	Farley EMS
147	1/11/2012	Farley	Kramer, Dennis	Farley EMS
148	2/7/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
149	5/1/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
150	5/1/2012	Dubuque Fire Training Center	Benda, Marty	Farley Fire Department
151	2/7/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department
152	5/1/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department
153	6/5/2012	Dubuque Fire Training Center	Monk, Christy	FEH Associates
154	1/24/2012	Dubuque Fire Training Center	Matthis, William	Graf
155	6/5/2012	Dubuque Fire Training Center	Maiers, Brian	Holy Cross
156	1/24/2012	Dubuque Fire Training Center	Sweeney, Donna	Holy Cross
157	2/7/2012	Dubuque Fire Training Center	McAuliffe, Brad	Holy Cross Fire Department
158	2/7/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
159	5/1/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
160	6/5/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
161	1/24/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
162	2/7/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
163	5/1/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
164	5/1/2012	Dubuque Fire Training Center	Hosch, Gene	New Vienna Fire Department
165	2/7/2012	Dubuque Fire Training Center	Westhoff, Henry	New Vienna Fire Department
166	1/24/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta
167	5/1/2012	Dubuque Fire Training Center	Hess, Gerald	Peosta
168	6/5/2012	Dubuque Fire Training Center	Snyder, Karen	Peosta
169	5/1/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta
170	1/24/2012	Dubuque Fire Training Center	Stephen, Ray	Peosta
171	2/7/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
172	5/1/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
173	2/7/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta Fire Department
174	2/2/2012	Epworth	Kremer, Paul	Private Contractor
175	2/1/2012	Rickardsville	Cleary, Steve	Rickardsville
176	2/1/2012	Rickardsville	Cleary, Vicky	Rickardsville
177	2/1/2012	Rickardsville	Kettmann, Matt	Rickardsville
178	2/1/2012	Rickardsville	Paisley, Gene	Rickardsville
179	2/1/2012	Rickardsville	Wilgenbusch, Melvin	Rickardsville
180	1/10/2012	Sageville	Esser-Recker, Ruth	Sageville
181	5/9/2012	Dubuque County/ECIA	Esser-Recker, Ruth	Sageville
182	1/10/2012	Sageville	Habel, Mary	Sageville
183	5/9/2012	Dubuque County/ECIA	Habel, Mary	Sageville

	A	B	C	D
184	1/10/2012	Sageville	Recker, Don	Sageville
185	5/9/2012	Dubuque County/ECIA	Recker, Don	Sageville
186	1/24/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
187	6/5/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
188	2/7/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
189	5/1/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
190	5/1/2012	Dubuque Fire Training Center	David, Todd	Sherrill Fire Department
191	5/1/2012	Dubuque Fire Training Center	Jaeger, Nick	Sherrill Fire Department
192	5/1/2012	Dubuque Fire Training Center	Lahey, Frank	Sherrill Fire Department
193	1/11/2012	Farley	Butler, Dan	Western Dubuque Schools
194	1/24/2012	Dubuque Fire Training Center	Hingtgen, Bob	Western Dubuque Schools
195	2/17/2012	Worthington City Hall	Engler, Mike	Worthington
196	2/17/2012	Worthington City Hall	Habel, Mary	Worthington
197	2/17/2012	Worthington City Hall	Hosch, Todd	Worthington
198	1/24/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
199	2/17/2012	Worthington City Hall	Lyons, Frank Jr.	Worthington
200	6/5/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
201	1/24/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
202	6/5/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
203	6/22/2012	ECIA	Mahoney, Karla	Zwingle

	A	B	C	D
1	<b>Dubuque County Hazard Mitigation Plan Meetings &amp; Participants</b>			
2				
3	<b>Date</b>	<b>Location</b>	<b>Participant</b>	<b>Jurisdiction/Affiliation</b>
4	2/7/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
5	5/1/2012	Dubuque Fire Training Center	Albrecht, David W.	Sherrill Fire Department
6	3/22/2012	Cascade	Annis, Shelley	Cascade
7	4/4/2012	Cascade	Annis, Shelley	Cascade
8	5/9/2012	Dubuque County/ECIA	Arnesdorf, Elmer	Citizen
9	2/7/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
10	5/1/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
11	6/5/2012	Dubuque Fire Training Center	Arnold, Brian	Key West Fire Department
12	1/24/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta
13	2/7/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
14	5/1/2012	Dubuque Fire Training Center	Avenarius, Dick	Peosta Fire Department
15	2/7/2012	Dubuque Fire Training Center	Avenarius, Tom	Asbury Fire Department
16	5/9/2012	Dubuque County/ECIA	Bartella, Sara	Citizen
17	5/9/2012	Dubuque County/ECIA	Bauer, Heather	Citizen
18	2/6/2012	Epworth	Beitzel, Dennis	Epworth Fire Department
19	1/11/2012	Farley	Bell, Randy	Farley EMS
20	2/7/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
21	5/1/2012	Dubuque Fire Training Center	Bell, Randy	Farley Fire Department
22	5/1/2012	Dubuque Fire Training Center	Benda, Marty	Farley Fire Department
23	1/24/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
24	2/2/2012	Epworth	Berger, Janet	Epworth
25	6/5/2012	Dubuque Fire Training Center	Berger, Janet	Epworth
26	2/6/2012	Epworth	Berger, Marty	Epworth Fire Department
27	1/11/2012	Farley	Berger, Thomas	Dubuque County EMA
28	1/24/2012	Dubuque Fire Training Center	Berger, Thomas	Dubuque County EMA
29	2/2/2012	Epworth	Berger, Thomas	Epworth Fire Department
30	2/6/2012	Epworth	Berger, Thomas	Epworth Fire Department
31	2/7/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
32	5/1/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
33	6/5/2012	Dubuque Fire Training Center	Berger, Thomas	Epworth Fire Department
34	1/24/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
35	6/5/2012	Dubuque Fire Training Center	Beringer, Dave	Sherrill
36	2/6/2012	Epworth	Boevers, Reid	Epworth Fire Department
37	2/6/2012	Epworth	Bohle, Jeff	Epworth Fire Department
38	1/24/2012	Dubuque Fire Training Center	Brekke, Michael	Dubuque City
39	5/9/2012	Dubuque County/ECIA	Brennan, Doug	Citizen
40	5/9/2012	Dubuque County/ECIA	Britton, David	Citizen
41	1/24/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
42	6/5/2012	Dubuque Fire Training Center	Brown, Dan	Dubuque City
43	5/9/2012	Dubuque County/ECIA	Brown, David L.	Citizen
44	5/9/2012	Dubuque County/ECIA	Brown, Donna J.	Citizen
45	5/9/2012	Dubuque County/ECIA	Brown, Janet	Citizen

	A	B	C	D
46	6/5/2012	Dubuque Fire Training Center	Burkhart, Bill	Dubuque Community Schools
47	1/11/2012	Farley	Butler, Dan	Western Dubuque Schools
48	6/5/2012	Dubuque Fire Training Center	Carstens, Laura	Dubuque City
49	2/1/2012	Rickardsville	Cleary, Steve	Rickardsville
50	2/1/2012	Rickardsville	Cleary, Vicky	Rickardsville
51	5/9/2012	Dubuque County/ECIA	Cupps, Tim	Citizen
52	5/1/2012	Dubuque Fire Training Center	David, Todd	Sherrill Fire Department
53	6/5/2012	Dubuque Fire Training Center	Davidshofer, Joe	Bankston
54	1/11/2012	Farley	Demmer, Charles	Farley EMS
55	2/7/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department
56	5/1/2012	Dubuque Fire Training Center	Demmer, Charles	Farley Fire Department
57	2/2/2012	Epworth	Demmer, Ryan	Epworth
58	2/6/2012	Epworth	Dougherty, Ron	Epworth Fire Department
59	1/11/2012	Farley	Einwalter, Bill	Farley
60	6/5/2012	Dubuque Fire Training Center	Einwalter, Bill	Farley
61	2/17/2012	Worthington City Hall	Engler, Mike	Worthington
62	2/6/2012	Epworth	Ernzen, Dan	Epworth Fire Department
63	1/10/2012	Sageville	Esser-Recker, Ruth	Sageville
64	5/9/2012	Dubuque County/ECIA	Esser-Recker, Ruth	Sageville
65	1/24/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
66	6/5/2012	Dubuque Fire Training Center	Fangman, Eugene	Asbury
67	3/22/2012	Cascade	Frasher, Ben	Cascade
68	4/4/2012	Cascade	Frasher, Ben	Cascade
69	3/22/2012	Cascade	Gehl, Phil	Cascade
70	4/4/2012	Cascade	Gehl, Phil	Cascade
71	1/24/2012	Dubuque Fire Training Center	Gehl, Randy	Dubuque City
72	1/10/2012	Sageville	Habel, Mary	Sageville
73	1/24/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
74	2/17/2012	Worthington City Hall	Habel, Mary	Worthington
75	5/9/2012	Dubuque County/ECIA	Habel, Mary	Sageville
76	6/5/2012	Dubuque Fire Training Center	Habel, Mary	Worthington & Sageville
77	1/11/2012	Farley	Hefel, Jay R.	Farley
78	2/6/2012	Epworth	Heiberger, Michael	Epworth Fire Department
79	3/22/2012	Cascade	Heim, Fredrick	Cascade
80	3/22/2012	Cascade	Henry, Mike	Cascade
81	4/4/2012	Cascade	Henry, Mike	Cascade
82	5/1/2012	Dubuque Fire Training Center	Hess, Gerald	Peosta
83	1/24/2012	Dubuque Fire Training Center	Hingtgen, Bob	Western Dubuque Schools
84	2/2/2012	Epworth	Hoerner, Lee	Epworth
85	3/22/2012	Cascade	Hoffmann, Marty	Cascade
86	4/4/2012	Cascade	Hoffmann, Marty	Cascade
87	2/14/2012	Balltown	Hoppenworth, Dennis	Balltown
88	5/1/2012	Dubuque Fire Training Center	Hosch, Gene	New Vienna Fire Department
89	2/2/2012	Epworth	Hosch, Larry	Epworth
90	2/17/2012	Worthington City Hall	Hosch, Todd	Worthington
91	5/9/2012	Dubuque County/ECIA	Houle, Faith	Citizen

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92	5/9/2012	Dubuque County/ECIA	Houselog, Jessica	Citizen
93	5/1/2012	Dubuque Fire Training Center	Jaeger, Nick	Sherrill Fire Department
94	1/11/2012	Farley	Jarding, Joyce	Farley
95	5/9/2012	Dubuque County/ECIA	Jellison, Tina	Citizen
96	2/2/2012	Epworth	Kauffmann, Jim	Epworth
97	3/22/2012	Cascade	Kearney, Pat	Cascade
98	4/4/2012	Cascade	Kearney, Pat	Cascade
99	2/6/2012	Epworth	Kennedy, Ryan	Epworth Fire Department
100	2/1/2012	Rickardsville	Kettmann, Matt	Rickardsville
101	2/7/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
102	5/1/2012	Dubuque Fire Training Center	Klein, Daryl	Dubuque County
103	1/24/2012	Dubuque Fire Training Center	Klostermann, John	Dubuque City
104	2/6/2012	Epworth	Kluesner, Todd	Epworth Fire Department
105	2/6/2012	Epworth	Kramer, Dan	Epworth Fire Department
106	1/11/2012	Farley	Kramer, Dennis	Farley EMS
107	1/11/2012	Farley	Kramer, Rod	Farley
108	1/24/2012	Dubuque Fire Training Center	Kramer, Ronnie	Epworth
109	2/2/2012	Epworth	Kramer, Ronnie	Epworth
110	2/6/2012	Epworth	Kramer, Ronnie	Epworth Fire Department
111	2/6/2012	Epworth	Kramer, Shannon	Epworth Fire Department
112	2/2/2012	Epworth	Kremer, Paul	Private Contractor
113	1/24/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
114	6/5/2012	Dubuque Fire Training Center	Kritz, Kyle	Dubuque City
115	5/1/2012	Dubuque Fire Training Center	Lahey, Frank	Sherrill Fire Department
116	2/2/2012	Epworth	Laughlin, Al	Epworth Garden Club
117	2/2/2012	Epworth	Laughlin, Lois	Epworth resident
118	3/22/2012	Cascade	Long, Tim	Cascade
119	4/4/2012	Cascade	Long, Tim	Cascade
120	6/5/2012	Dubuque Fire Training Center	Long, Tim	Cascade
121	1/24/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
122	2/17/2012	Worthington City Hall	Lyons, Frank Jr.	Worthington
123	6/5/2012	Dubuque Fire Training Center	Lyons, Frank Jr.	Worthington
124	5/9/2012	Dubuque County/ECIA	Maas, Helen G.	Citizen
125	6/22/2012	ECIA	Mahoney, Karla	Bernard & Zwingle
126	6/5/2012	Dubuque Fire Training Center	Maiers, Brian	Holy Cross
127	1/24/2012	Dubuque Fire Training Center	Matthis, William	Graf
128	2/14/2012	Balltown	Mauer, Loras	Balltown
129	2/7/2012	Dubuque Fire Training Center	McAuliffe, Brad	Holy Cross Fire Department
130	1/24/2012	Dubuque Fire Training Center	Michels, Mick	Dyersville
131	6/5/2012	Dubuque Fire Training Center	Monk, Christy	FEH Associates
132	2/6/2012	Epworth	Morgan, Andrew	Epworth Fire Department
133	3/22/2012	Cascade	Moriarity, Robert	Cascade
134	4/4/2012	Cascade	Moriarity, Robert	Cascade
135	5/9/2012	Dubuque County/ECIA	Morris, Corrine	Citizen
136	2/6/2012	Epworth	Mueller, Evan	Epworth Fire Department
137	2/6/2012	Epworth	Mueller, Kyle	Epworth Fire Department

	A	B	C	D
138	2/7/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
139	5/1/2012	Dubuque Fire Training Center	Neenan, Dan	Epworth Fire Department
140	5/9/2012	Dubuque County/ECIA	Noonan, Clarence	Citizen
141	1/24/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
142	2/7/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
143	5/1/2012	Dubuque Fire Training Center	Oberbroeckling, Roger	Luxemburg
144	2/1/2012	Rickardsville	Paisley, Gene	Rickardsville
145	1/26/2012	Durango	Peterson, John	Durango resident
146	1/26/2012	Durango	Peterson, Michelle	Durango resident
147	2/7/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
148	5/1/2012	Dubuque Fire Training Center	Pins, Tim	Dyersville Fire Department
149	6/5/2012	Dubuque Fire Training Center	Preston, Brian	Dubuque County
150	2/2/2012	Epworth	Puccio, Donna	Divine Word College
151	1/10/2012	Sageville	Recker, Don	Sageville
152	5/9/2012	Dubuque County/ECIA	Recker, Don	Sageville
153	2/6/2012	Epworth	Refe, Jacob	Epworth Fire Department
154	2/2/2012	Epworth	Reuter, Jacob	Epworth
155	2/6/2012	Epworth	Rosenow, Kelly	Epworth Fire Department
156	1/26/2012	Durango	Schemmel, James	Durango
157	1/26/2012	Durango	Schemmel, Margaret	Durango
158	1/24/2012	Dubuque Fire Training Center	Schiesl, Bob	Dubuque City
159	2/6/2012	Epworth	Schipper Kyle	Epworth Fire Department
160	5/9/2012	Dubuque County/ECIA	Schmitt, Donna	Citizen
161	5/9/2012	Dubuque County/ECIA	Schmitt, Kevin	Citizen
162	2/14/2012	Balltown	Schmitt, Ronald	Balltown
163	1/24/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
164	2/14/2012	Balltown	Sigwarth, Herb	Balltown
165	6/5/2012	Dubuque Fire Training Center	Sigwarth, Herb	Balltown
166	2/6/2012	Epworth	Silker, Steve	Epworth Fire Department
167	1/11/2012	Farley	Simon, Jeff	Farley
168	6/5/2012	Dubuque Fire Training Center	Simon, Jeff	Farley
169	6/5/2012	Dubuque Fire Training Center	Simpson, Rhonda	Dubuque Community Schools
170	2/6/2012	Epworth	Snyder, Dale	Epworth Fire Department
171	6/5/2012	Dubuque Fire Training Center	Snyder, Dale	Dubuque County
172	6/5/2012	Dubuque Fire Training Center	Snyder, Karen	Peosta
173	2/6/2012	Epworth	Sprengelmeyer, Andrew	Epworth Fire Department
174	2/7/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta Fire Department
175	5/1/2012	Dubuque Fire Training Center	Stephan, Ray	Peosta
176	1/24/2012	Dubuque Fire Training Center	Stephen, Ray	Peosta
177	1/24/2012	Dubuque Fire Training Center	Sweeney, Donna	Holy Cross
178	2/6/2012	Epworth	Theisen, Kyle	Epworth Fire Department
179	2/7/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
180	5/1/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
181	6/5/2012	Dubuque Fire Training Center	Vrotsos, Don	Dubuque County
182	1/24/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
183	1/26/2012	Durango	Walker, Jennifer	ECIA

	A	B	C	D
184	2/1/2012	Rickardsville	Walker, Jennifer	ECIA
185	2/2/2012	Epworth	Walker, Jennifer	ECIA
186	2/14/2012	Balltown	Walker, Jennifer	ECIA
187	2/14/2012	Balltown	Walker, Jennifer	ECIA
188	2/17/2012	Worthington City Hall	Walker, Jennifer	ECIA
189	3/22/2012	Cascade	Walker, Jennifer	ECIA
190	4/4/2012	Cascade	Walker, Jennifer	ECIA
191	5/9/2012	Dubuque County/ECIA	Walker, Jennifer	ECIA
192	6/5/2012	Dubuque Fire Training Center	Walker, Jennifer	ECIA
193	6/22/2012	ECIA	Walker, Jennifer	ECIA
194	2/7/2012	Dubuque Fire Training Center	Westhoff, Henry	New Vienna Fire Department
195	5/9/2012	Dubuque County/ECIA	Whelan, Russ	Citizen
196	2/6/2012	Epworth	Wilgenbusch, Gary	Epworth Fire Department
197	2/6/2012	Epworth	Wilgenbusch, Larry	Epworth Fire Department
198	2/1/2012	Rickardsville	Wilgenbusch, Melvin	Rickardsville
199	6/5/2012	Dubuque Fire Training Center	Wilkinson, Bret	Dubuque County
200	2/14/2012	Balltown	Wuertzer, Jean	Centralia
201	2/7/2012	Dubuque Fire Training Center	Wuertzer, Michael	Centralia Fire Department
202	2/14/2012	Balltown	Wuertzer, Michael	Centralia

Appendix B:

Announcements of Meetings & Draft Posting

## Jennifer Walker

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**From:** Tom Berger [dbqema@yousq.net]  
**Sent:** Tuesday, December 20, 2011 10:16 AM  
**To:** Angela Oberbroeckling; beth.asbury@mchsi.com; City of Graf; City of Worthington; Danielle Hartke; Dave Schueller; Doug Hummel; holycross@yousq.net; Janet Berger; Juanita Hilkin; Karen Snyder; Karla Mahoney; karlam@foodliner.com; Kevin Firnstahl; Loras Mauer; Mary Ann Specht; Mike Van Milligen; mmichel@cityofdyersville.com; nvclerk@iowatelecom.net; Randy Lansing; Rhonda Mueller; sageville@mchsi.com; Shelley Annis; Thomas I. Berger; Tricia Maiers; Vicky Cleary  
**Cc:** Jennifer Walker; 'Tom Berger'; 'Denise Dolan'  
**Subject:** Dubuque County Multi Jurisdictional Hazard Mitigation Plan (DCMJHP)

Good Morning –

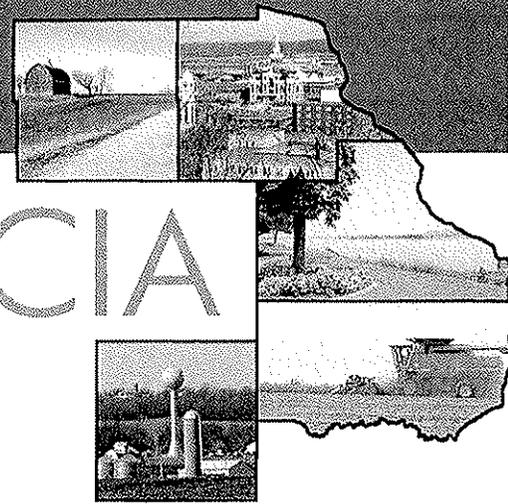
I would like to update you on the progress of our application to complete a MJHMP. As you are aware, in the past each city/county was responsible to complete their own jurisdictional plan. FEMA has changed the planning grants and will now only fund and review MJHMPs as they are looking to reduce some of the plans and paperwork. For Iowa – that means they will have 99 plans rather than 800+. Dubuque County has been awarded a planning grant and has awarded ECIA a contract to work with Dubuque County EMA to complete the plan for the county.

I would like for you to mark on your calendar a very important kick off meeting that we will have with all jurisdictions. **The meeting will be held here at the Dubuque County Fire Training Center/Emergency Management Office on Tuesday, January 24<sup>th</sup>, 2012 from 4:00 p.m. until 5:30 p.m.** You will be receiving more detailed information about the meeting from Jennifer Walker from ECIA after the first of the year, however I wanted to get an email out to you to save the date. Jennifer will also be contacting those jurisdictions who have expired plans or no plans in place to start our outreach meetings with your communities. For those communities who recently completed a plan, we will need participation from you at the January 24<sup>th</sup> meeting and also at a later date. Our priority will be to start working with the no plan and expired plan cities and then move to the others. The planning grant is a three year grant in which we hope to have completed well before that so communities can start applying for hazard mitigation funds.

The good news for cities is that once we have the MJHMP you will no longer have to update your city plan and we will have all of the plans rolled into the county plan. All cities will then be compliant for five years from the new approval date. If you have any questions, please let me know. I hope everyone has a happy and safe holiday season.

**Thomas I. Berger, Director**  
Dubuque County Emergency Management Agency  
14928 Public Safety Way  
Dubuque, IA 52002-8216  
Phone: 563-589-4170 Fax: 563-589-0015  
[dbqema@yousq.net](mailto:dbqema@yousq.net)

East Central Intergovernmental Association  
a regional response to local needs



TO: Dubuque County Jurisdictions  
FROM: Jennifer Walker, Project Coordinator  
DATE: January 3, 2012  
SUBJECT: Dubuque County Multi-Jurisdictional Hazard Mitigation Planning Team

As you may know, Dubuque 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 Dubuque 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 have representation from all participating jurisdictions, County officials, and school districts in Dubuque County, 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.

Furthermore, a significant portion of this grant is funded through in-kind service – volunteer participation in the planning process. Therefore, we require that each jurisdiction included in the MJHMP have representation on the planning team.

To that end, we would like to request that at least one representative from each jurisdiction attends the first planning session:

**Tuesday, January 24, 2012**  
**Dubuque County Fire Training Center/Emergency Management Office**  
**14928 Public Safety Way**  
**Dubuque, IA 52002**  
**4 PM**

At the meeting we will discuss the planning parameters and timeline, as well as identify and rank the natural hazards, and review each jurisdictions critical facilities and vulnerable populations.

Do not hesitate to contact me (563.690.5775) or Dubuque County Emergency Management Coordinator, Tom Berger (563.589.4170) if you have any questions. Otherwise, I look forward to working with your planning representative on January 24.

East Central Intergovernmental Association  
a regional response to local needs



TO: Dubuque County Jurisdictions and School Districts  
FROM: Jennifer Walker, Project Coordinator  
DATE: April 26, 2012  
SUBJECT: DRAFT REVIEW MEETING OF DUBUQUE COUNTY  
MULTI-JURISDICTIONAL HAZARD MITIGATION

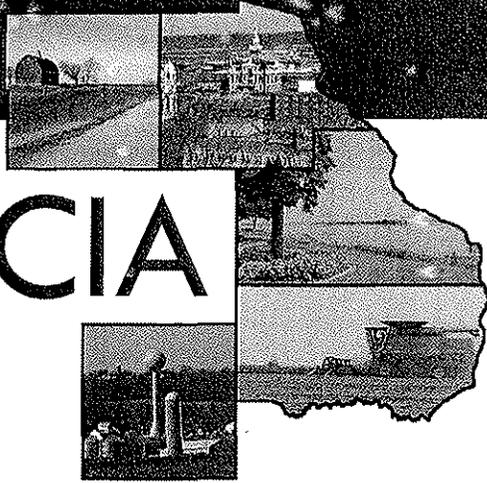
The Dubuque County Multi-Jurisdictional Hazard Mitigation Plan is well underway and we anticipate having a first draft soon. I will be in touch in the next couple of weeks to collect the data that is still needed from some of the jurisdictions and hope that you will return it as soon as possible to enable the draft process to keep moving forward. If you do not hear from me, I have everything I need for your community.

We will be holding a meeting of all of the stakeholders to make any necessary additions, corrections and deletions. **It is required by FEMA that all jurisdictions (including participating school districts) attend the planning meetings** to ensure accurate information for the entire County. Plans that do not have full jurisdictional participation are not approved by FEMA, so please be sure to have at least one representative from your community or school district attend the following session:

**Tuesday, June 5, 2012**  
**4-6pm**  
**Dubuque County Fire Training Center/Emergency Management Office**  
**14928 Public Safety Way**  
**Dubuque, IA 52002**

The draft of the plan will be available on the ECIA website no later than May 28, 2012. A notice will be sent out as soon as the draft is posted. Please thoroughly review the draft prior to attending the meeting and come with any changes. That will allow us to review the plan as quickly as possible and I can take your corrections with me and make changes following the meeting. From there, we should be able to post the draft for 30 days on the Dubuque County website to allow for public comments and feedback. The plan can then be submitted to FEMA for review and approval.

Do not hesitate to contact me if you have any questions and again, I will be in touch soon if I need further input at this time from your jurisdiction. I look forward to seeing everyone on June 5<sup>th</sup>.



ECIA

May 10, 2012

Mr. Tim Pins  
Development Director  
Dyersville Beckman High School  
1325 9<sup>th</sup> Street SE  
Dyersville, IA 52040

Dear Mr. Pins:

East Central Intergovernmental Association (ECIA), on behalf of Dubuque County, is preparing the Dubuque County Multi-Jurisdictional Hazard Mitigation Plan. The document covers mitigation goals and activities for each jurisdiction in Dubuque County for the next five years, including tornado safe room planning and flood mitigation.

As a courtesy, I want to inform you of a planning and review meeting on June 5, 2012 at 4pm at the Dubuque County Fire Training Center/Emergency Management Office, 14928 Public Safety Way, Dubuque, IA 52002.

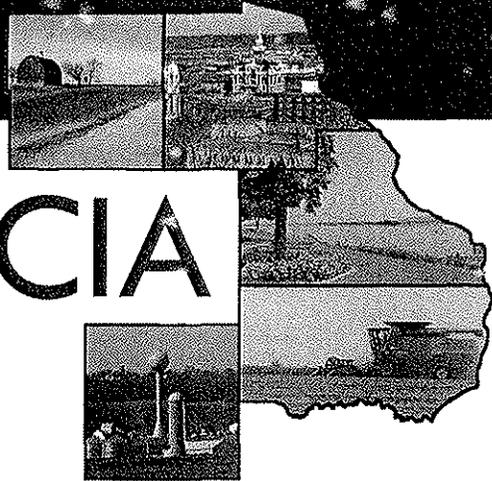
At the meeting, the jurisdictions of Dubuque County will be reviewing a draft of the county's hazard mitigation plan and make changes, additions and deletions as needed. Once the recommended changes are made the draft will be posted on the County's website for 30 days.

As a stakeholder in the county, with multiple structures, I would like to extend an invitation to representatives from Beckman to attend the meeting and or review the document online. If you have any questions regarding the process, please do not hesitate to contact me.

Sincerely,



Jennifer Walker  
Project Coordinator



ECIA

May 10, 2012

Ms. Deb Massey  
Business Director  
Holy Family Schools  
2005 Kane St.  
Dubuque, IA 52001

Dear Ms. Massey:

East Central Intergovernmental Association (ECIA), on behalf of Dubuque County, is preparing the Dubuque County Multi-Jurisdictional Hazard Mitigation Plan. The document covers mitigation goals and activities for each jurisdiction in Dubuque County for the next five years, including tornado safe room planning and flood mitigation.

As a courtesy, I want to inform you of a planning and review meeting on June 5, 2012 at 4pm at the Dubuque County Fire Training Center/Emergency Management Office, 14928 Public Safety Way, Dubuque, IA 52002.

At the meeting, the jurisdictions of Dubuque County will be reviewing a draft of the county's hazard mitigation plan and make changes, additions and deletions as needed. Once the recommended changes are made the draft will be posted on the County's website for 30 days.

As a stakeholder in the county, with multiple structures, I would like to extend an invitation to representatives from Beckman to attend the meeting and or review the document online. If you have any questions regarding the process, please do not hesitate to contact me.

Sincerely,

  
Jennifer Walker  
Project Coordinator

## **PUBLIC NOTICE**

A draft of the Dubuque County Multi-Jurisdictional Multi-Hazard Mitigation Plan is available for public review and comment at the Dubuque County Courthouse, 720 Central Avenue, Dubuque, IA. The Plan will be available from July 1st – July 31st, 2012 during normal office hours from 8:00 a.m. – 4:30 p.m., Monday through Friday, excluding holidays. Comments on the plan may be submitted in writing to the Dubuque County Emergency Management Agency, 14928 Public Safety Way, Dubuque, IA, 52002-8216. Comments may also be emailed to EMA Office at [dbqema@yousq.net](mailto:dbqema@yousq.net). A copy of the plan will also be available on the county website located at [www.dubuquecounty.org](http://www.dubuquecounty.org)

Appendix C:

Modified STAPLEE Criteria

## DUBUQUE 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 Dubuque 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	Total
Obtain and maintain a FEMA-approved Hazard Mitigation Plan for Dubuque County.	ALL	+	+	+	+	+	+	+	7
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 and maintain 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

Mitigation Action	Jurisdiction	S	T	A	P	L	E	E	Total
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
Continue to maintain existing outdoor warning siren systems and ensure appropriate coverage for population.	ALL	+	0	+	+	+	-	+	4
Ensure NOAA weather radios are available for every home in Dubuque County.	ALL	+	0	0	0	0	-	+	1
Purchase barricades and signage as deemed necessary to better communicate information.	ALL	+	+	-	+	0	+	+	4
Train personnel as weather spotters.	ALL	+	+	+	+	+	0	+	6
Continue to improve public awareness of hazardous weather through newsletters, public notices, strolling signs, etc.	ALL	+	+	+	+	+	+	+	7
Continue to add needed infrastructure to mitigate flood damage.	ALL	+	+	+	+	+	+	+	7
Continue to monitor the effectiveness of severe winter weather policies and update as needed.	UC	+	+	+	+	+	+	+	7
Continue to monitor the effectiveness of snow removal and ice control policies and update as needed.	UC	+	+	+	+	+	+	+	7
Develop Emergency Alert Notification Systems for vulnerable unincorporated areas of Dubuque County (i.e. text alert, email, voice recording, etc.) to notify residents of pending/possible disasters.	UC	+	+	+	+	+	+	+	7
Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the County to provide power in the event of a power failure.	UC	+	-	+	+	+	-	-	4
Maintain contract service and implement processes for off-site storage of information for backup access.	UC	+	+	+	+	+	-	+	5



Mitigation Action	Jurisdiction	S	T	A	P	L	E	E	Total
Maintain an evacuation plan as referenced out of the Comprehensive Emergency Management Plan (CEMP).	UC	+	+	+	+	+	+	+	7
Continue to identify probable areas for potential hazards, assess traffic capacity of highways and roads, and identify shelters for the hazards and develop best routes for evacuations.	UC	+	+	+	+	+	+	+	7
Continue to maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	UC	+	0	0	+	+	+	+	5
Continue public awareness campaign, including educational programming, marketing, and public service announcements and advertising to inform the public regarding the proper procedure during a flood.	UC	+	+	+	+	+	+	+	7
Modify the Flood Plain Management Ordinance as necessary with a target of alleviating flooding.	UC	+	+	+	+	+	+	+	7
Purchase more barriers and floodgates to better block and inform drivers of flooded areas.	UC	+	+	+	+	+	0	+	6
Enforce plan to close roads during flood to prevent drivers from entering area.	UC	+	0	0	+	+	+	+	5
Install river gauges and/or river stream sensors to measure the height of water and better enable the County to monitor river levels and potential flooding.	UC	+	0	+	+	+	-	+	4
Maintain Community Alert Network system that includes the auto-dial potential for all households and businesses in the line of a severe storm.	UC	+	+	+	+	+	+	+	7
Continue program to educate residents on NOAA indoor weather radios and provide a rebate program for a portion of the purchase price for residents, or distribute as available.	UC	+	+	+	+	+	+	+	7
Develop a Geographic Information System (GIS) to provide detailed evacuation routes and shelter sites for	UC	+	-	-	+	0	+	+	2







<b>Mitigation Action</b>	<b>Jurisdiction</b>	<b>S</b>	<b>T</b>	<b>A</b>	<b>P</b>	<b>L</b>	<b>E</b>	<b>E</b>	<b>Total</b>
Continue to monitor and work with local AM and FM radio stations and cable TV providers with direct EAS systems.	Dubuque	+	0	+	+	+	+	+	6
Continue to promote the use of NOAA indoor weather radios at residences, schools, hospitals, nursing homes, etc., throughout the City.	Dubuque	+	+	+	+	+	+	+	7
Continue to maintain, enforce and update building codes as needed.	Dubuque	+	+	+	+	+	+	+	7
Maintain an evacuation plan as referenced in the CEMP.	Dubuque	+	+	+	+	+	+	+	7
Restore the Bee Branch Creek with open channel from the 24 <sup>th</sup> St. neighborhood to E. 16 <sup>th</sup> St. retention basin, including the acquisition of approximately 70 homes and businesses.	Dubuque	+	+	+	+	+	-	+	5
Complete improvements to the North Fork Catfish Creek from Key Way Dr. to the Northwest Arterial, including the upsizing of culverts under Key Way Dr. and Rosemont St.	Dubuque	+	+	+	+	+	-	+	5
Continue ongoing maintenance and monitoring of the City of Dubuque's floodwall system as mandated by federal law.	Dubuque	+	+	+	+	+	+	+	7
Maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	Dubuque	+	+	0	+	+	+	+	6
Conduct Levee Flood Certification analysis to determine whether or not improvements are deemed necessary for the floodwall system.	Dubuque	+	+	+	+	+	+	+	7
Make required improvements based on the outcome of the Levee Flood Certification.	Dubuque	0	0	0	+	+	-	+	2
Conduct a Levee Breach Study to determine scenarios in the event of levee failure.	Dubuque	+	+	+	+	+	+	+	7
Develop evacuation plan based on Levee Breach Study.	Dubuque	+	0	+	+	+	+	+	6















Appendix D:  
Resolutions

Appendix E:

NOAA:

National Climactic Data Center Information

- [NOAA HOME](#)
- [WEATHER](#)
- [OCEANS](#)
- [FISHERIES](#)
- [CHARTING](#)
- [SATELLITES](#)
- [CLIMATE](#)
- [RESEARCH](#)
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## National Climatic Data Center

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NCDC > Storm Events Database (Select State)

### Storm Events Database

- **Data Access**
- [Search](#)
- [FTP Access](#)
- [Database Download](#)
- **External Resources**
- [Tornado EF Scale](#)
- [NOAA's SPC Reports](#)
- [NOAA's SPC WCM Page](#)
- [SHELDUS](#)

## Storm Events Database

### Search Results for DUBUQUE, IOWA

224 event(s) were reported between 01/01/2006 and 12/31/2011. ([Modify Search](#))

'Mag': Magnitude, 'Dth': Deaths, 'Inj': Injuries, 'PrD': Property Damage, 'CrD': Crop Damage

*Click on County or Location to display details*

County or Location	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
<a href="#">DUBUQUE</a>	01/13/2007	1307	Winter Weather		0	0	0.00K	0.00K
<a href="#">DUBUQUE</a>	01/21/2007	215	Winter Weather		0	0	0.00K	0.00K
<a href="#">DUBUQUE</a>	02/01/2007	0	Cold/Wind Chill		0	0	0.00K	0.00K
<a href="#">DUBUQUE</a>	02/02/2007	400	Extreme		0	0	0.00K	0.00K

			Cold/Wind Chill					
<u>DUBUQUE</u>	02/06/2007	607	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/11/2007	2050	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/13/2007	200	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/16/2007	1745	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/23/2007	1735	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/24/2007	1035	Winter Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	03/01/2007	1853	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	03/31/2007	1658	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/02/2007	2229	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/02/2007	2244	Hail	0.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/02/2007	2253	Hail	0.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/02/2007	2309	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/02/2007	2314	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2007	0	Frost/Freeze		0	0	0.00K	
<u>DUBUQUE</u>	04/10/2007	2315	Heavy Snow		0	0		0.00K
<u>DUBUQUE</u>	05/26/2007	1543	Tornado	EF0	0	0	1.00K	0.00K
<u>DUBUQUE</u>	07/17/2007	1315	Hail	0.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/17/2007	2338	Thunderstorm Wind	61 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/17/2007	2341	Thunderstorm Wind	61 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/17/2007	2345	Thunderstorm Wind	61 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/18/2007	21	Flash Flood		0	0	500.00K	0.00K
<u>DUBUQUE</u>	08/14/2007	253	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K

DUBUQUE	08/22/2007	1600	Thunderstorm Wind	61 kts.	0	0	5.00K	0.00K
DUBUQUE	08/22/2007	1610	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
DUBUQUE	11/21/2007	1558	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	12/01/2007	948	Winter Storm		0	0	0.00K	0.00K
DUBUQUE	12/04/2007	1600	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	12/06/2007	1507	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	12/11/2007	113	Ice Storm		0	0	0.00K	0.00K
DUBUQUE	12/20/2007	2040	Dense Fog		0	0	0.00K	0.00K
DUBUQUE	12/22/2007	1725	Winter Storm		0	0	0.00K	0.00K
DUBUQUE	12/28/2007	655	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	01/05/2008	2010	Dense Fog		0	0	0.00K	0.00K
DUBUQUE	01/07/2008	610	Hail	0.75 in.	0	0	0.00K	0.00K
DUBUQUE	01/17/2008	15	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	01/21/2008	215	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	01/24/2008	400	Extreme Cold/Wind Chill		0	0	0.00K	0.00K
DUBUQUE	01/29/2008	1300	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	01/29/2008	2200	Extreme Cold/Wind Chill		0	0	0.00K	0.00K
DUBUQUE	02/04/2008	1430	Dense Fog		0	0	0.00K	0.00K
DUBUQUE	02/05/2008	1340	Winter Storm		0	0	0.00K	0.00K
DUBUQUE	02/10/2008	0	Extreme Cold/Wind Chill		0	0	0.00K	0.00K
DUBUQUE	02/11/2008	1420	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	02/16/2008	2255	Winter Storm		0	0	0.00K	0.00K
DUBUQUE	02/25/2008	1450	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	02/28/2008	1655	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	03/27/2008	615	Winter Weather		0	0	0.00K	0.00K
DUBUQUE	04/01/2008	0	Flood		0	0	0.00K	0.00K

DUBUQUE	04/25/2008	630	Heavy Rain		0	0	0.00K	0.00K
DUBUQUE	04/25/2008	745	Flash Flood		0	0	0.00K	0.00K
DUBUQUE	04/25/2008	745	Flash Flood		0	0	0.00K	0.00K
DUBUQUE	04/25/2008	819	Heavy Rain		0	0	0.00K	0.00K
DUBUQUE	04/25/2008	1341	Hail	1.50 in.	0	0	0.00K	0.00K
DUBUQUE	04/28/2008	2300	Cold/Wind Chill		0	0	0.00K	0.00K
DUBUQUE	04/29/2008	0	Frost/Freeze		0	0	0.00K	0.00K
DUBUQUE	05/02/2008	0	Hail	1.75 in.	0	0	0.00K	0.00K
DUBUQUE	05/02/2008	6	Hail	1.00 in.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	1840	Tornado	EF1	0	0	250.00K	0.00K
DUBUQUE	05/25/2008	1848	Hail	1.00 in.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	1915	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	1918	Hail	0.75 in.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	2000	Hail	0.88 in.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	2030	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
DUBUQUE	05/25/2008	2100	Flash Flood		0	0	0.00K	0.00K
DUBUQUE	05/25/2008	2101	Hail	1.00 in.	0	0	0.00K	0.00K
DUBUQUE	05/30/2008	543	Flash Flood		0	0	0.00K	0.00K
DUBUQUE	05/31/2008	1858	Hail	0.75 in.	0	0	0.00K	0.00K
DUBUQUE	06/01/2008	0	Flood		0	0	6.40M	0.00K
DUBUQUE	06/06/2008	241	Thunderstorm Wind	53 kts.	0	0	0.00K	0.00K
DUBUQUE	06/08/2008	1300	Flash Flood		0	0	25.00K	0.00K
DUBUQUE	06/08/2008	1300	Flash Flood		0	0	25.00K	0.00K

<u>DUBUQUE</u>	06/08/2008	1802	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/08/2008	1816	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/08/2008	1821	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/12/2008	1306	Flash Flood		0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/12/2008	1433	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/12/2008	1436	Thunderstorm Wind	56 kts.	0	0	10.00K	0.00K
<u>DUBUQUE</u>	07/02/2008	1535	Thunderstorm Wind	52 kts.	0	0	5.00K	0.00K
<u>DUBUQUE</u>	07/02/2008	1535	Thunderstorm Wind	56 kts.	0	0	5.00K	0.00K
<u>DUBUQUE</u>	07/10/2008	1852	Thunderstorm Wind	61 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/10/2008	1902	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/10/2008	1946	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/03/2008	548	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/04/2008	1620	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/04/2008	1650	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	10/26/2008	1100	High Wind	50 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	11/30/2008	150	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/03/2008	700	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/08/2008	1140	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/08/2008	2100	Ice Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/16/2008	1035	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/18/2008	2200	Heavy Snow		0	0	0.00K	0.00K

<u>DUBUQUE</u>	12/21/2008	200	Blizzard		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/24/2008	400	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/26/2008	1230	Dense Fog		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/09/2009	1900	Heavy Snow		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/14/2009	1900	Extreme Cold/Wind Chill		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/20/2009	2145	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	700	Thunderstorm Wind	65 kts.	0	0	250.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	721	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	723	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	730	Thunderstorm Wind	70 kts.	0	0	25.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	734	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	735	Thunderstorm Wind	65 kts.	0	0	20.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	745	Thunderstorm Wind	56 kts.	0	0	25.00K	0.00K
<u>DUBUQUE</u>	06/19/2009	746	Thunderstorm Wind	70 kts.	0	0	0.10K	0.00K
<u>DUBUQUE</u>	06/19/2009	750	Thunderstorm Wind	65 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1415	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1415	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1736	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1738	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1738	Hail	1.75 in.	0	0	0.00K	0.00K

<u>DUBUQUE</u>	07/24/2009	1740	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/24/2009	1746	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1149	Hail	0.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1150	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1200	Thunderstorm Wind	61 kts.	0	0	50.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1201	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1215	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1218	Thunderstorm Wind	58 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1355	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/09/2009	1355	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/08/2009	150	Winter Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/09/2009	500	Blizzard		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/21/2009	1800	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/23/2009	1100	Ice Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/25/2009	1200	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/06/2010	1915	Winter Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/16/2010	1900	Dense Fog		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/25/2010	800	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/07/2010	2200	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	03/19/2010	1815	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2138	Thunderstorm Wind	56 kts.	0	0	50.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2140	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K

<u>DUBUQUE</u>	04/05/2010	2150	Thunderstorm Wind	61 kts.	0	0	150.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2150	Thunderstorm Wind	61 kts.	0	0	50.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2150	Hail	1.25 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2152	Thunderstorm Wind	52 kts.	0	1	25.00K	0.00K
<u>DUBUQUE</u>	04/05/2010	2156	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/30/2010	1325	Thunderstorm Wind	52 kts.	0	0	10.00K	0.00K
<u>DUBUQUE</u>	04/30/2010	1325	Thunderstorm Wind	61 kts.	0	0	500.00K	0.00K
<u>DUBUQUE</u>	06/18/2010	1149	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/23/2010	300	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/23/2010	300	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/23/2010	303	Thunderstorm Wind	51 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/23/2010	303	Thunderstorm Wind	61 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/22/2010	1925	Thunderstorm Wind	70 kts.	0	0	100.00K	0.00K
<u>DUBUQUE</u>	07/22/2010	1941	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/22/2010	2009	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/22/2010	2345	Flash Flood		0	0	500.00K	0.00K
<u>DUBUQUE</u>	08/09/2010	0	Lightning		0	0	250.00K	0.00K
<u>DUBUQUE</u>	09/12/2010	1615	Thunderstorm Wind	65 kts.	0	0	100.00K	0.00K
<u>DUBUQUE</u>	09/12/2010	1620	Thunderstorm Wind	74 kts.	0	0	0.00K	0.00K

<u>DUBUQUE</u>	09/21/2010	1335	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	10/01/2010	0	Flood		0	0	0.00K	0.00K
<u>DUBUQUE</u>	10/01/2010	0	Flood		0	0	0.00K	0.00K
<u>DUBUQUE</u>	10/26/2010	1320	High Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	11/24/2010	1400	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/03/2010	1600	Winter Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/12/2010	30	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/15/2010	1930	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/20/2010	930	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	12/23/2010	2250	Winter Storm		0	0	0.00K	0.00K
<u>DUBUQUE</u>	01/17/2011	155	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/01/2011	1300	Blizzard		0	0	0.00K	0.00K
<u>DUBUQUE</u>	02/20/2011	450	Winter Weather		0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1822	Hail	1.75 in.	0	0	1.00M	0.00K
<u>DUBUQUE</u>	04/03/2011	1828	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1834	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1840	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1916	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1919	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1921	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1921	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1921	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1921	Hail	2.00	0	0	0.00K	0.00K

				in.				
<u>DUBUQUE</u>	04/03/2011	1923	Hail	1.75 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1924	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1929	Hail	3.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/03/2011	1930	Hail	3.50 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	04/13/2011	700	Flood		0	0	250.00K	0.00K
<u>DUBUQUE</u>	06/15/2011	1726	Hail	0.88 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	06/15/2011	1755	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	440	Thunderstorm Wind	61 kts.	0	0	1.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	450	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	455	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	502	Thunderstorm Wind	61 kts.	0	0	25.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	507	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	510	Thunderstorm Wind	65 kts.	0	0	100.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	510	Thunderstorm Wind	64 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/11/2011	510	Thunderstorm Wind	58 kts.	0	0	0.00K	
<u>DUBUQUE</u>	07/27/2011	1739	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1750	Flash Flood		0	0	1.00M	0.00K
<u>DUBUQUE</u>	07/27/2011	1815	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1817	Hail	1.00 in.	0	0	0.00K	0.00K

<u>DUBUQUE</u>	07/27/2011	1818	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1820	Hail	1.25 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1820	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1829	Hail	1.00 in.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1829	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	1830	Lightning		0	0	100.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	2000	Flash Flood		0	0	7.00M	0.00K
<u>DUBUQUE</u>	07/27/2011	2030	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	2053	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	2319	Thunderstorm Wind	51 kts.	0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/27/2011	2329	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	0	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	349	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	423	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	500	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	500	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	543	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	600	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	640	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	659	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	718	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	1037	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	07/28/2011	1055	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	08/23/2011	1033	Heavy Rain		0	0	0.00K	0.00K
<u>DUBUQUE</u>	11/09/2011	445	Winter Weather		0	0	0.00K	0.00K

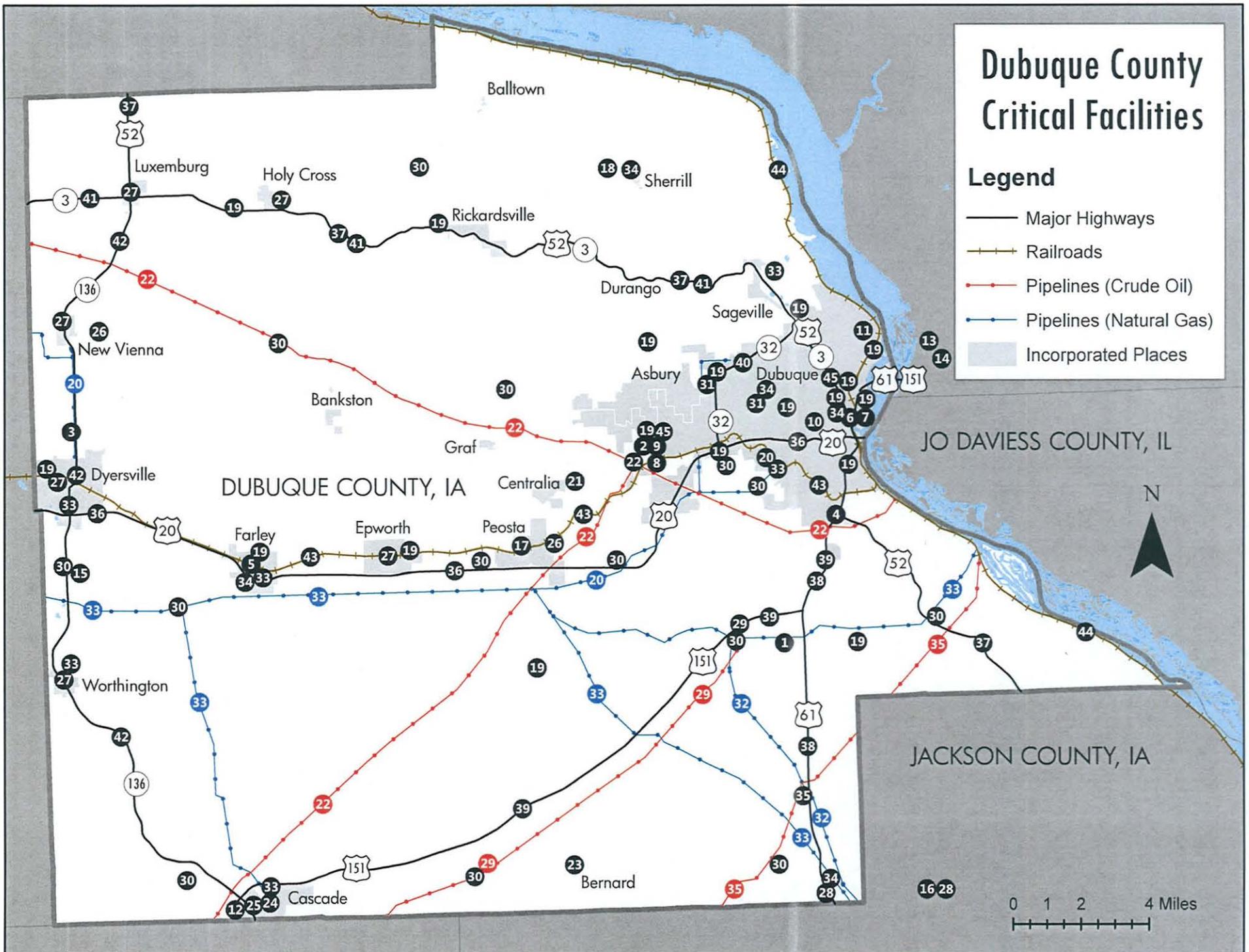
Appendix F:

Critical Facilities Maps

# Dubuque County Critical Facilities

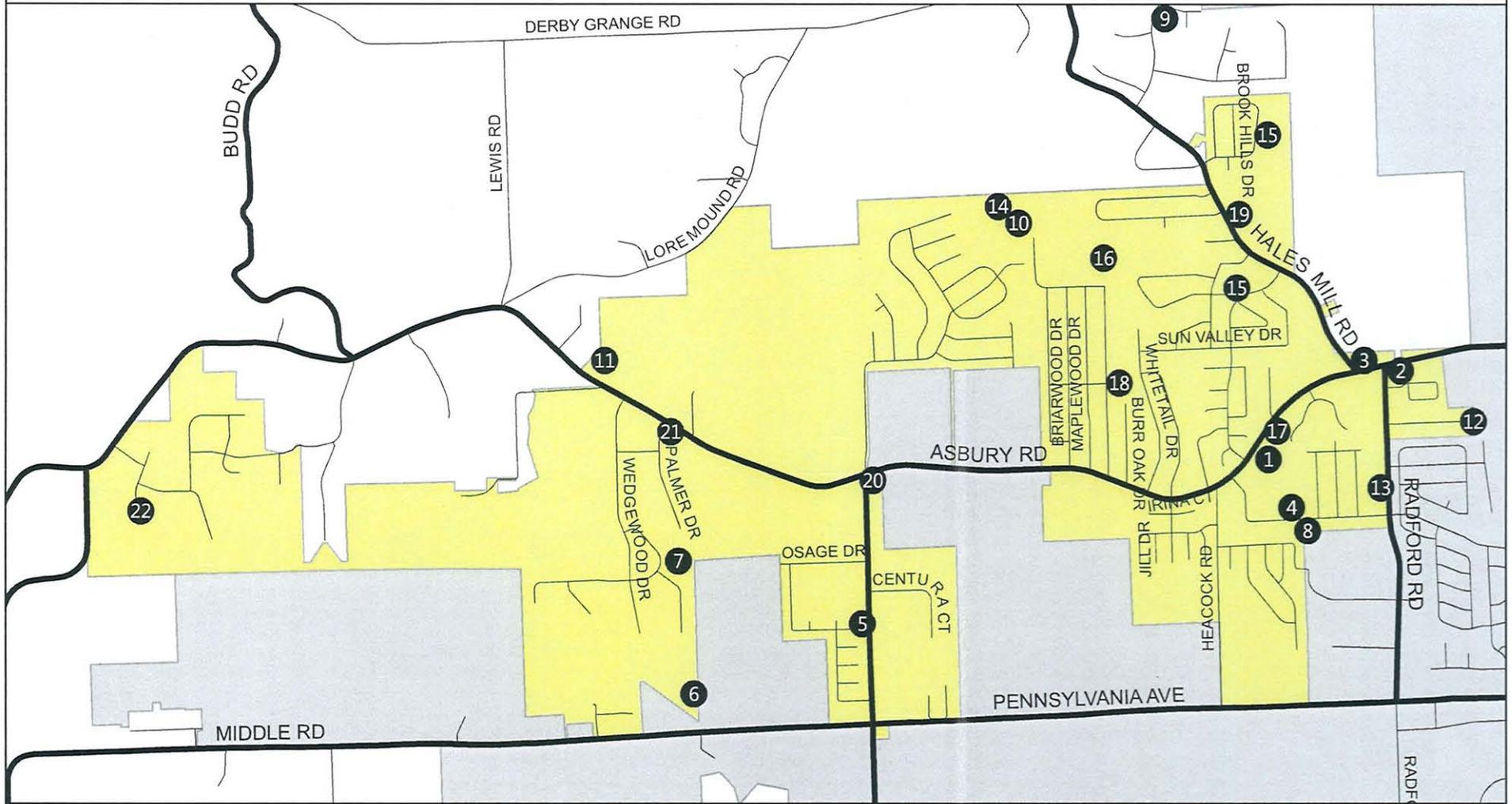
## Legend

- Major Highways
- Railroads
- Pipelines (Crude Oil)
- Pipelines (Natural Gas)
- Incorporated Places



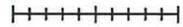
# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Asbury Critical Facilities



### Legend

 Corporate Boundary

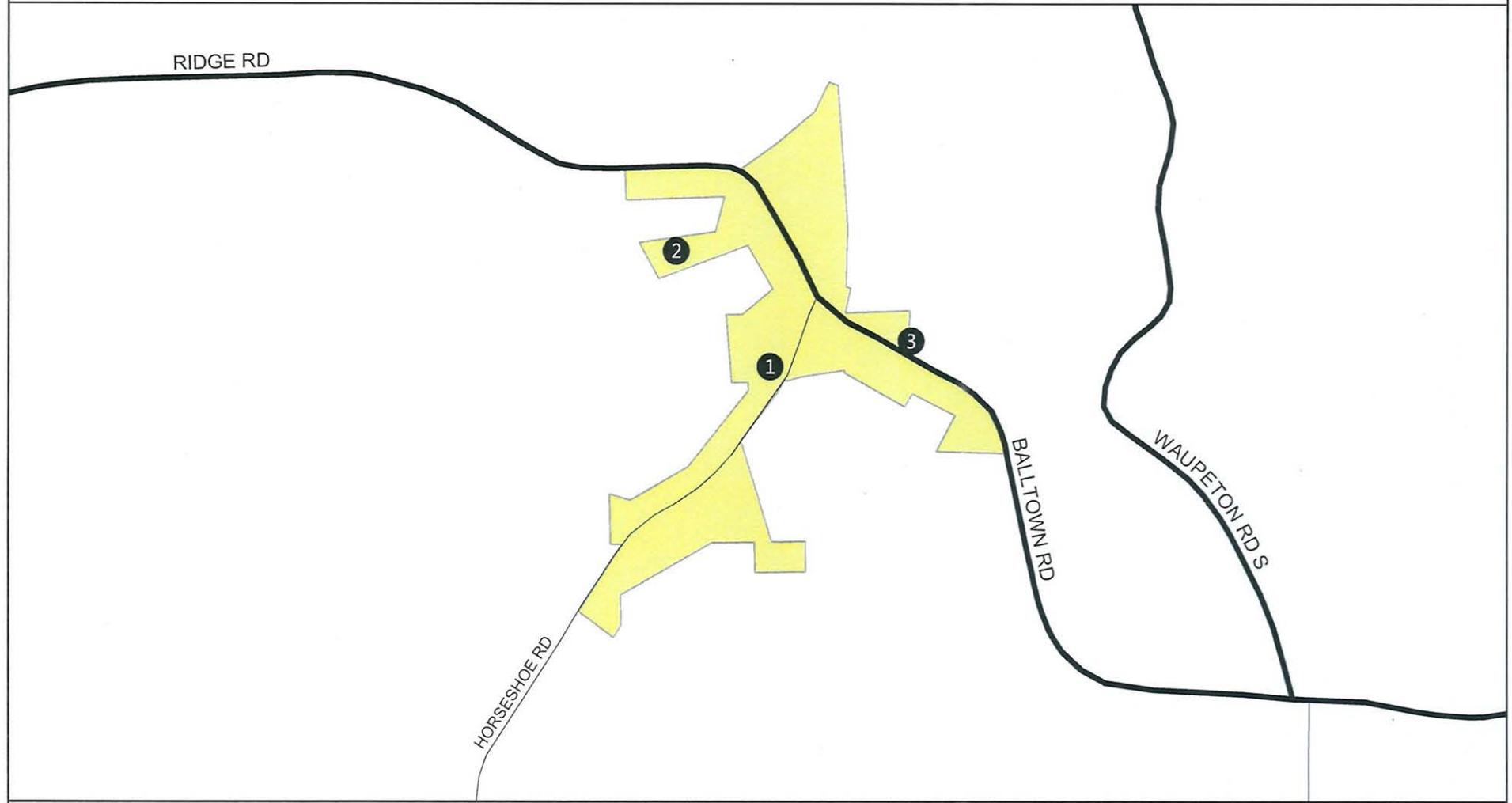
0 1,000 2,000 Feet  


- |                           |                            |                                |                         |
|---------------------------|----------------------------|--------------------------------|-------------------------|
| 1. Asbury Park            | 7. Wedgewood Well          | 13. Radford Rd Lift Station    | 19. Hales Mill Siren    |
| 2. Police Department      | 8. Colonial Estates Well   | 14. Willowood Lift Station     | 20. Seippel Rd Siren    |
| 3. City Hall              | 9. Woodmoor Well           | 15. Brookhaven Lift Station    | 21. Wedgewood Siren     |
| 4. Fire Department        | 10. WWTF & Public Works    | 16. Hales Mill Rd Lift Station | 22. Tuscany Ridge Siren |
| 5. Arrowhead Lift Station | 11. Water Tower            | 17. Asbury Park Siren          |                         |
| 6. Wedgewood Lift Station | 12. Asbury Ct Lift Station | 18. Maple Hills Siren          |                         |

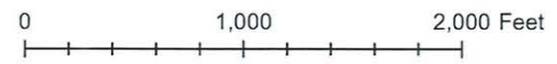


Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

# City of Balltown Critical Facilities



- Legend**
-  Corporate Boundary
  - 1. Warning Siren
  - 2. Wastewater Treatment
  - 3. Lift Station



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

# City of Bankston Critical Facilities



**Legend**

 Corporate Boundary

1. A&D Agri Supply

2. Sewer

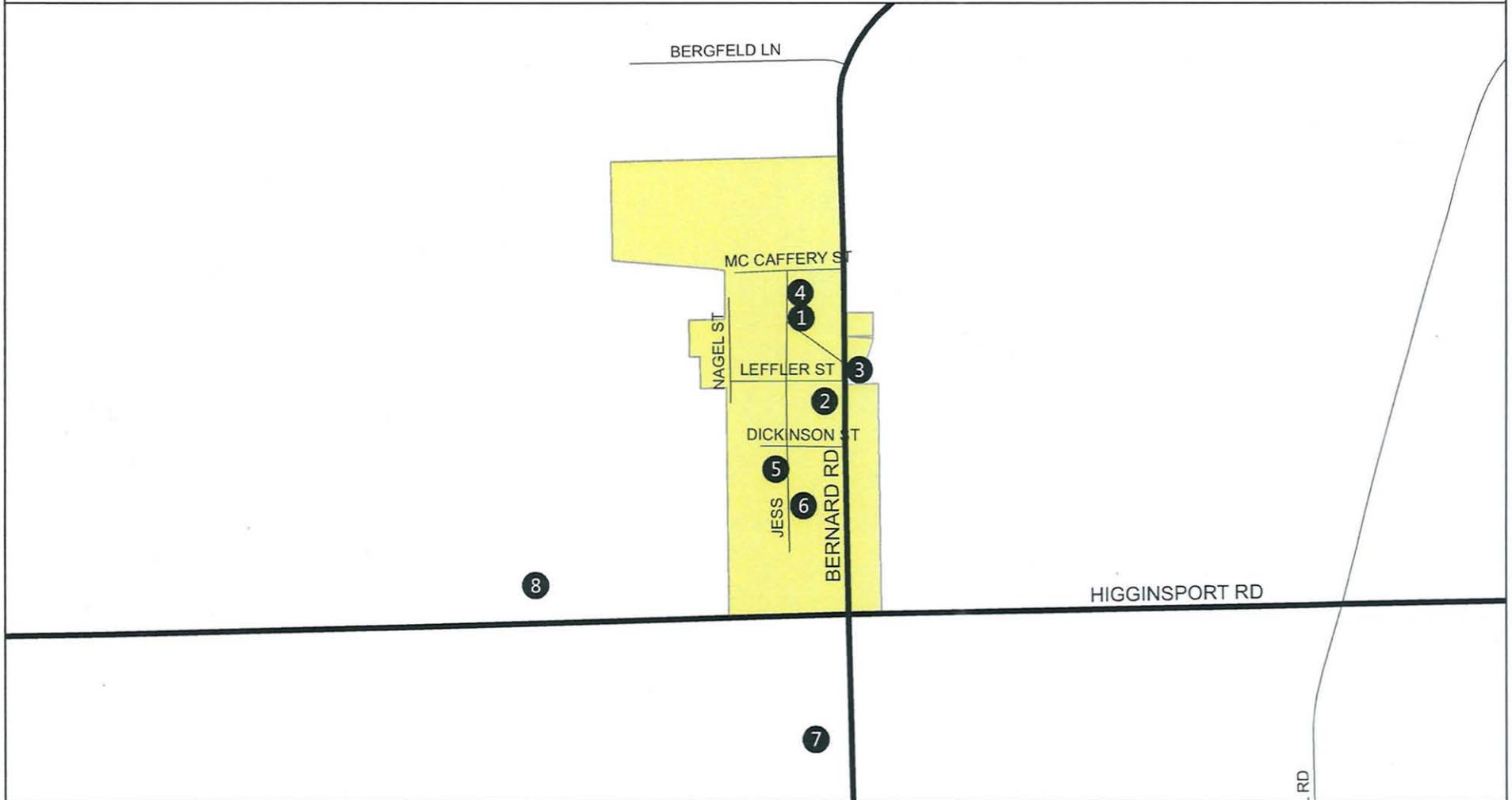
3. Well

0 1,000 2,000 Feet



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

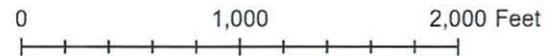
# City of Bernard Critical Facilities



**Legend**

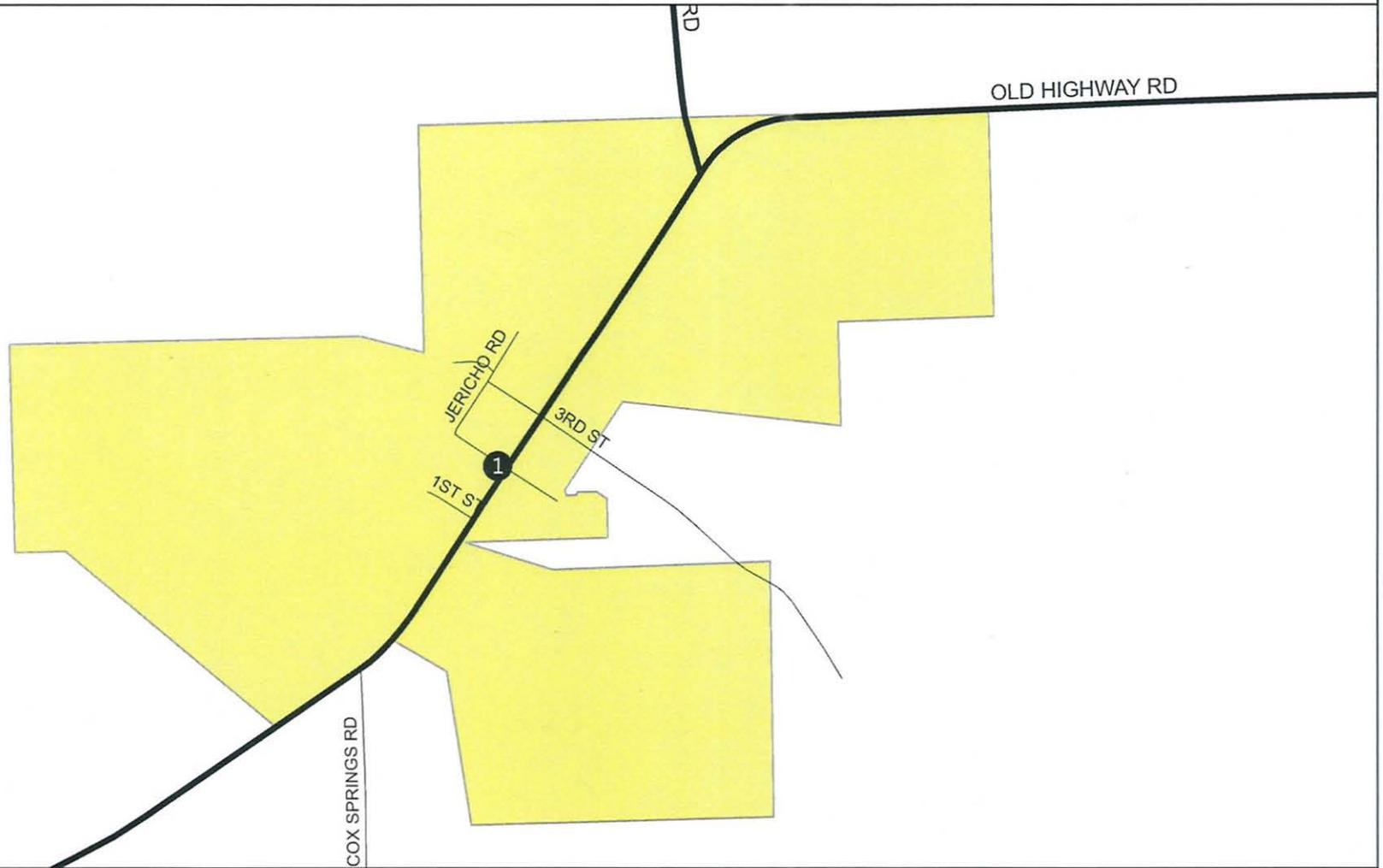
 Corporate Boundary

- |                         |                   |
|-------------------------|-------------------|
| 1. Emergency Services   | 7. Bernard School |
| 2. Water Building/Siren | 8. Lagoon         |
| 3. Old City Hall        |                   |
| 4. Lift Station         |                   |
| 5. Post Office          |                   |
| 6. Telephone Building   |                   |



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

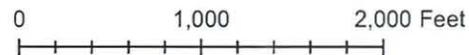
# City of Centralia Critical Facilities



**Legend**

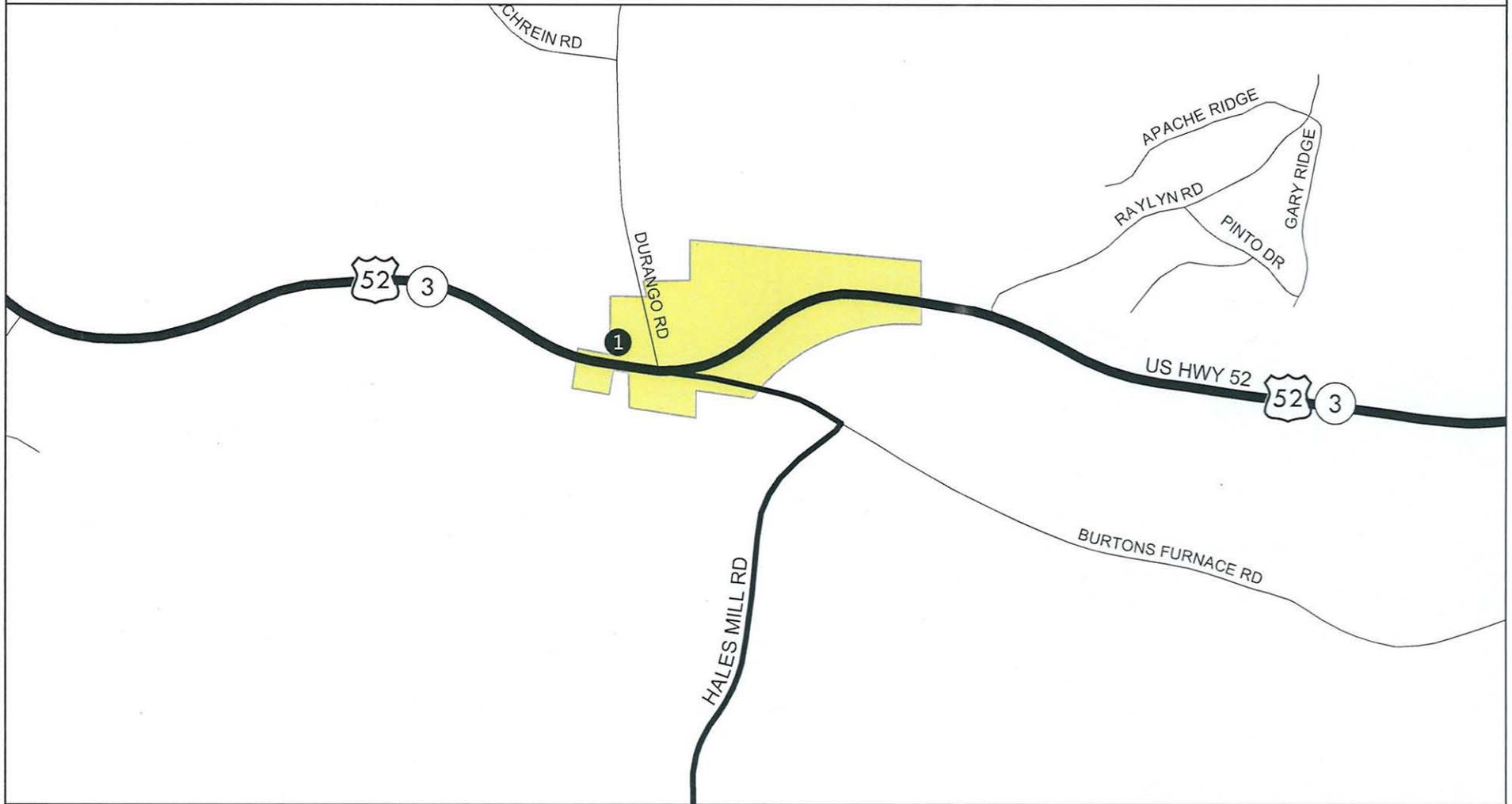
 Corporate Boundary

1. Fire Station



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

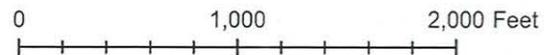
# City of Durango Critical Facilities



**Legend**

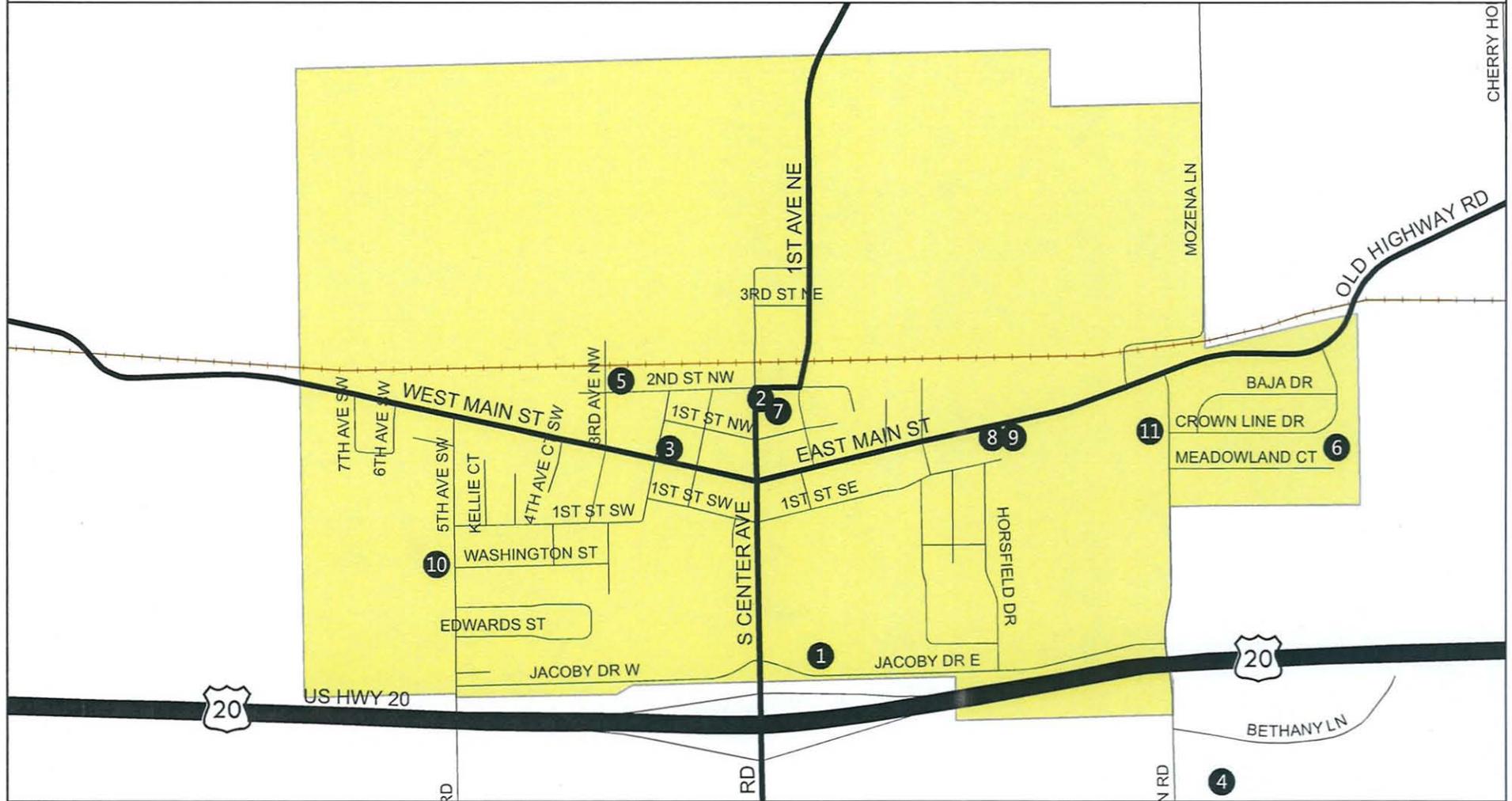
 Corporate Boundary

1. Schemmel Residence



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Epworth Critical Facilities



### Legend

 Corporate Boundary

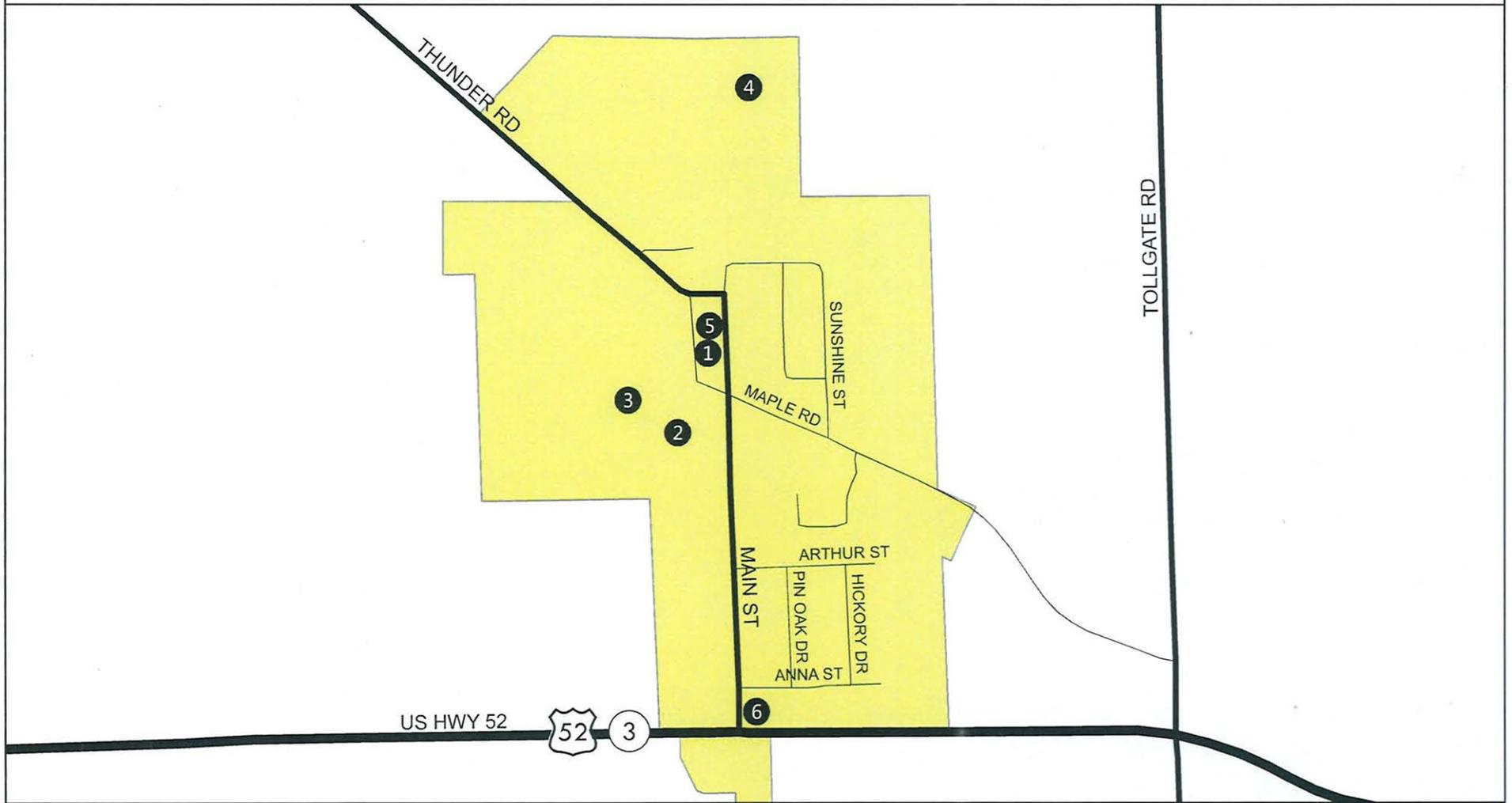
- |                                |                      |
|--------------------------------|----------------------|
| 1. Fire Station/City Hall      | 7. Well 3            |
| 2. Police Station/Public Works | 8. Well 4            |
| 3. Water Tower/Well 2          | 9. Siren 1           |
| 4. WWTF & Lift Station         | 10. Siren 2          |
| 5. 2nd Lift Station            | 11. Community Center |
| 6. Epworth Acres Lift Station  |                      |

0 1,000 2,000 Feet



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

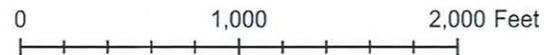
# City of Holy Cross Critical Facilities



**Legend**

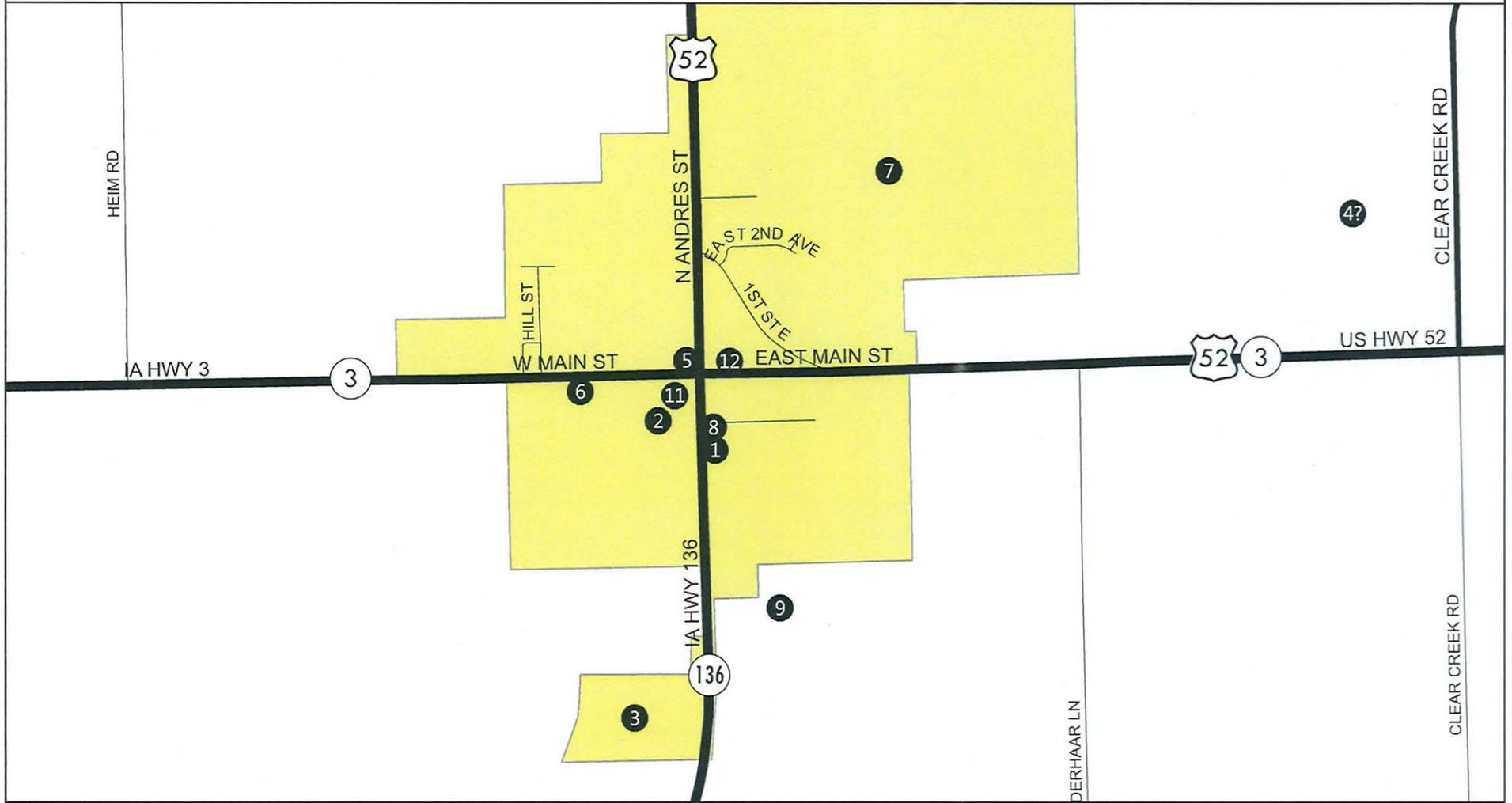
 Corporate Boundary

- 1. Fire Station
- 2. School
- 3. Water Tower
- 4. Sewer System
- 5. City Hall
- 6. Lift Station



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Luxemburg Critical Facilities



### Legend

 Corporate Boundary

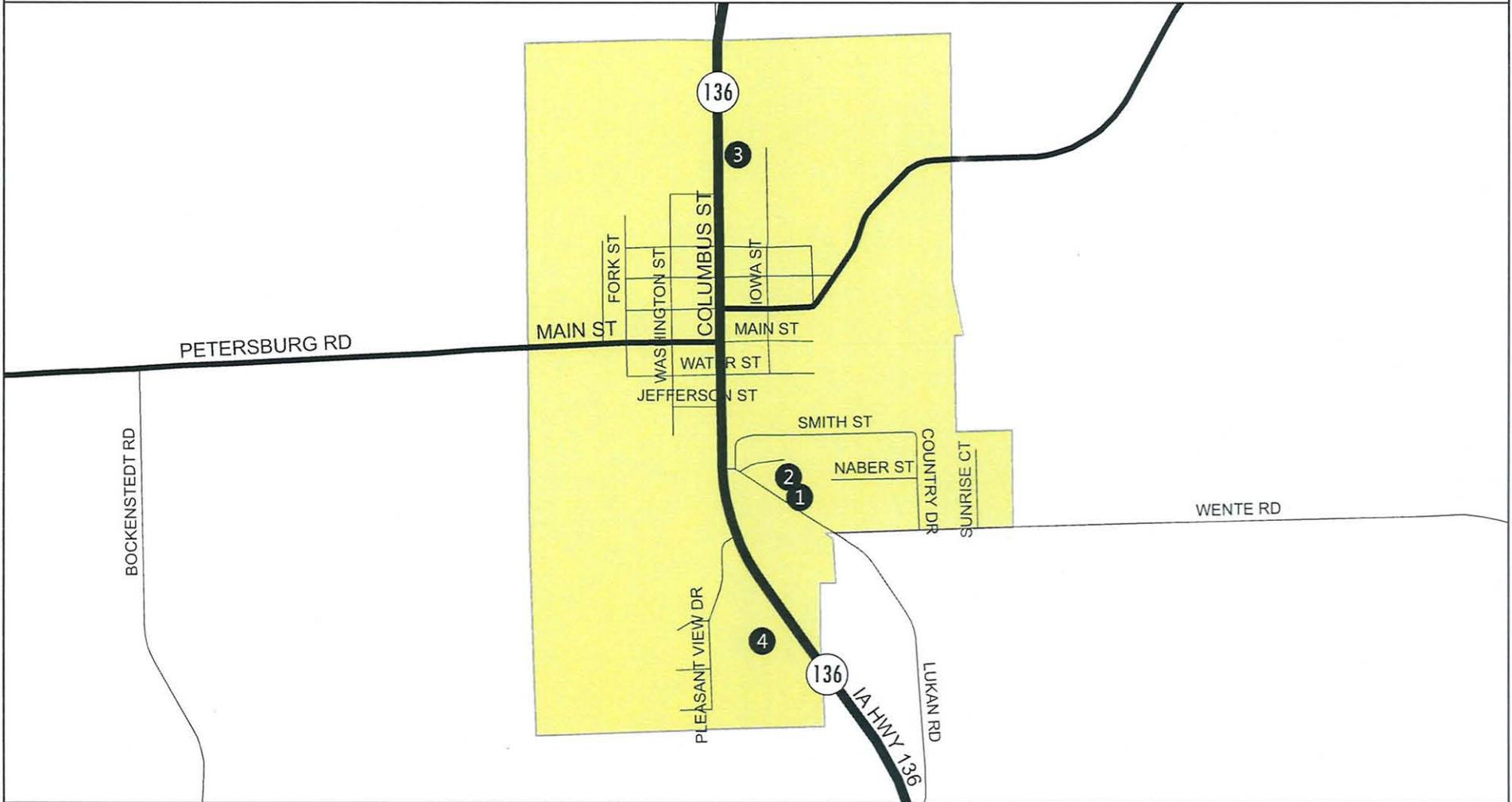
- |                           |                                |
|---------------------------|--------------------------------|
| 1. City Hall              | 7. Lift Station                |
| 2. Weather Siren          | 8. Iowa Telecom                |
| 3. WWTF & Lagoons         | 9. US Cellular Tower           |
| 4. Ground Water Tank      | 10. New Century Communications |
| 5. Moser's Service Center | 11. Holy Trinity Church/School |
| 6. Lift Station           | 12. Fidelity Bank              |

0 1,000 2,000 Feet



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of New Vienna Critical Facilities



### Legend

 Corporate Boundary

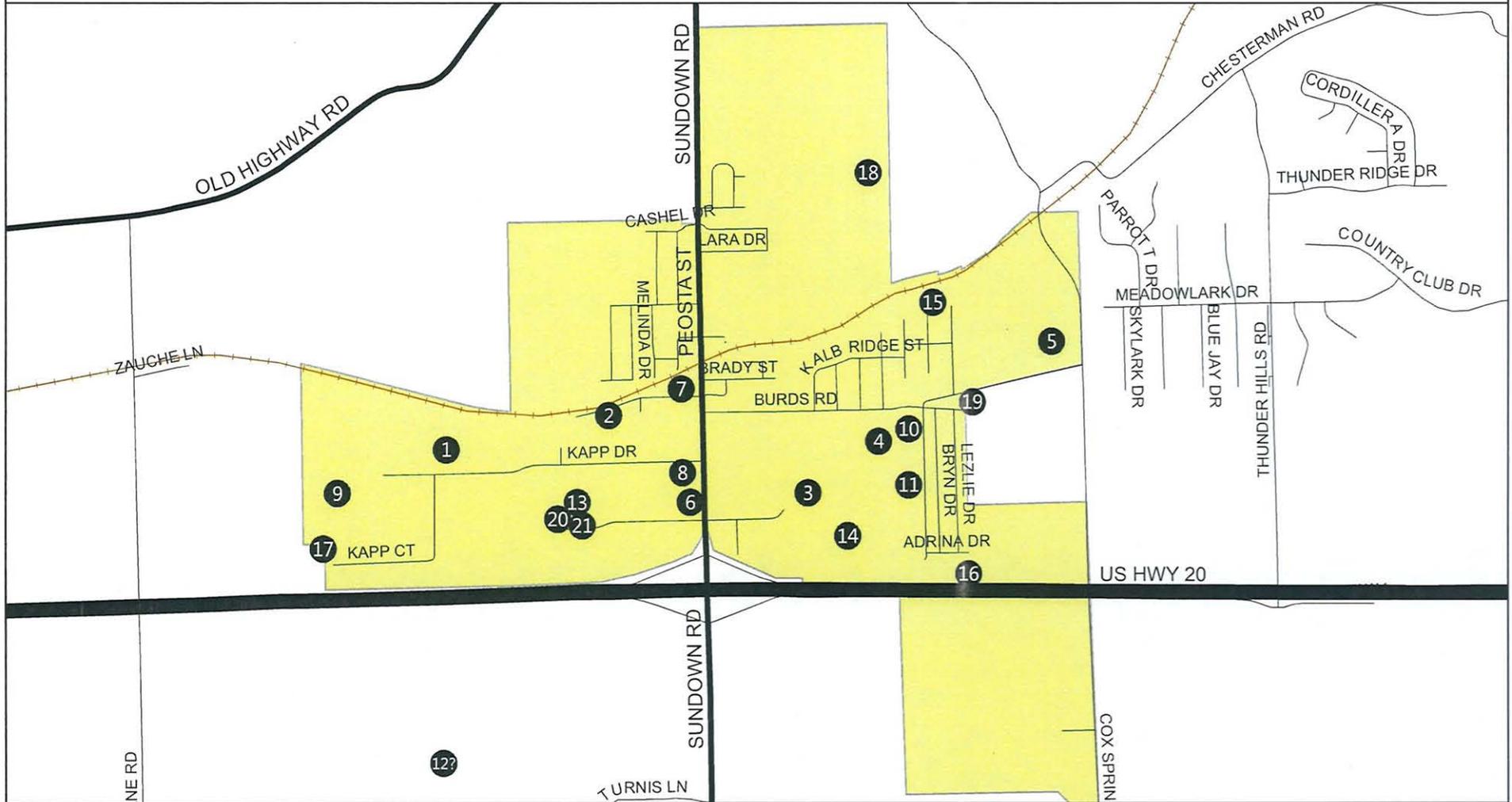
1. Co-Op Oil Company
2. Co-Op LP Storage
3. Water Tower
4. New Vienna Metal Works

0 1,000 2,000 Feet



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

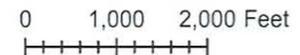
## City of Peosta Critical Facilities



### Legend

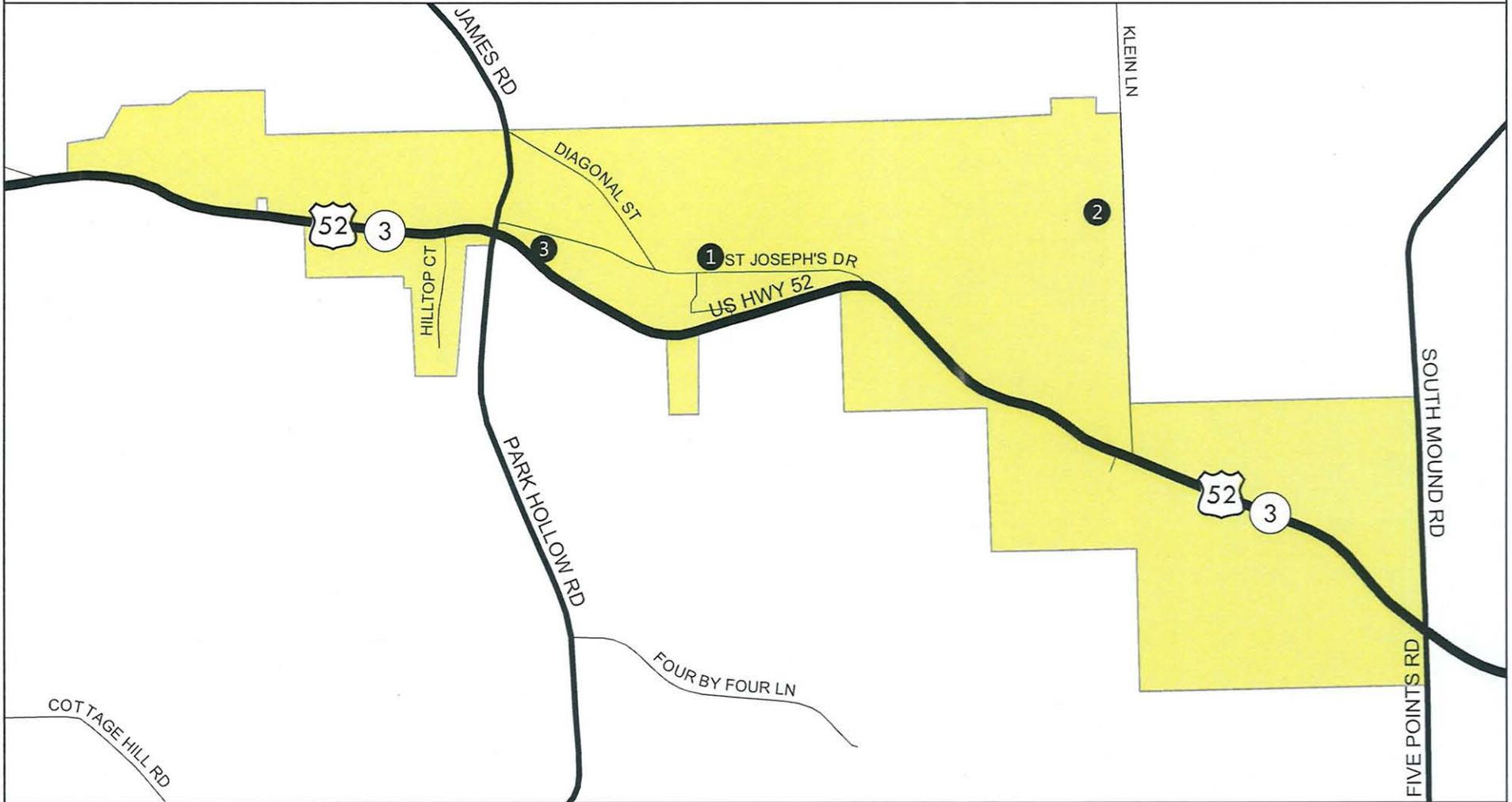
 Corporate Boundary

- |                        |                                       |                                    |
|------------------------|---------------------------------------|------------------------------------|
| 1. #2 Well/Water Tower | 9. Wastewater Lagoons                 | 17. Kapp Court Lift Station        |
| 2. #3 Well/Water Tower | 10. Peosta Community Center/City Hall | 18. Gingerbread Ridge Lift Station |
| 3. NICC                | 11. Sports Complex                    | 19. Power Substation               |
| 4. Peosta Elementary   | 12. Phone Box Substation              | 20. Public Works Building          |
| 5. Seton Church        | 13. Main Lift Station                 | 21. Salt Storage Shed              |
| 6. St John Church      | 14. NICC Lift Station                 |                                    |
| 7. Fire Station        | 15. Peosta Acres Lift Station         |                                    |
| 8. Post Office         | 16. Highway 20 Lift Station           |                                    |



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

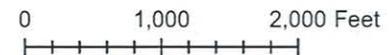
# City of Rickardsville Critical Facilities



**Legend**

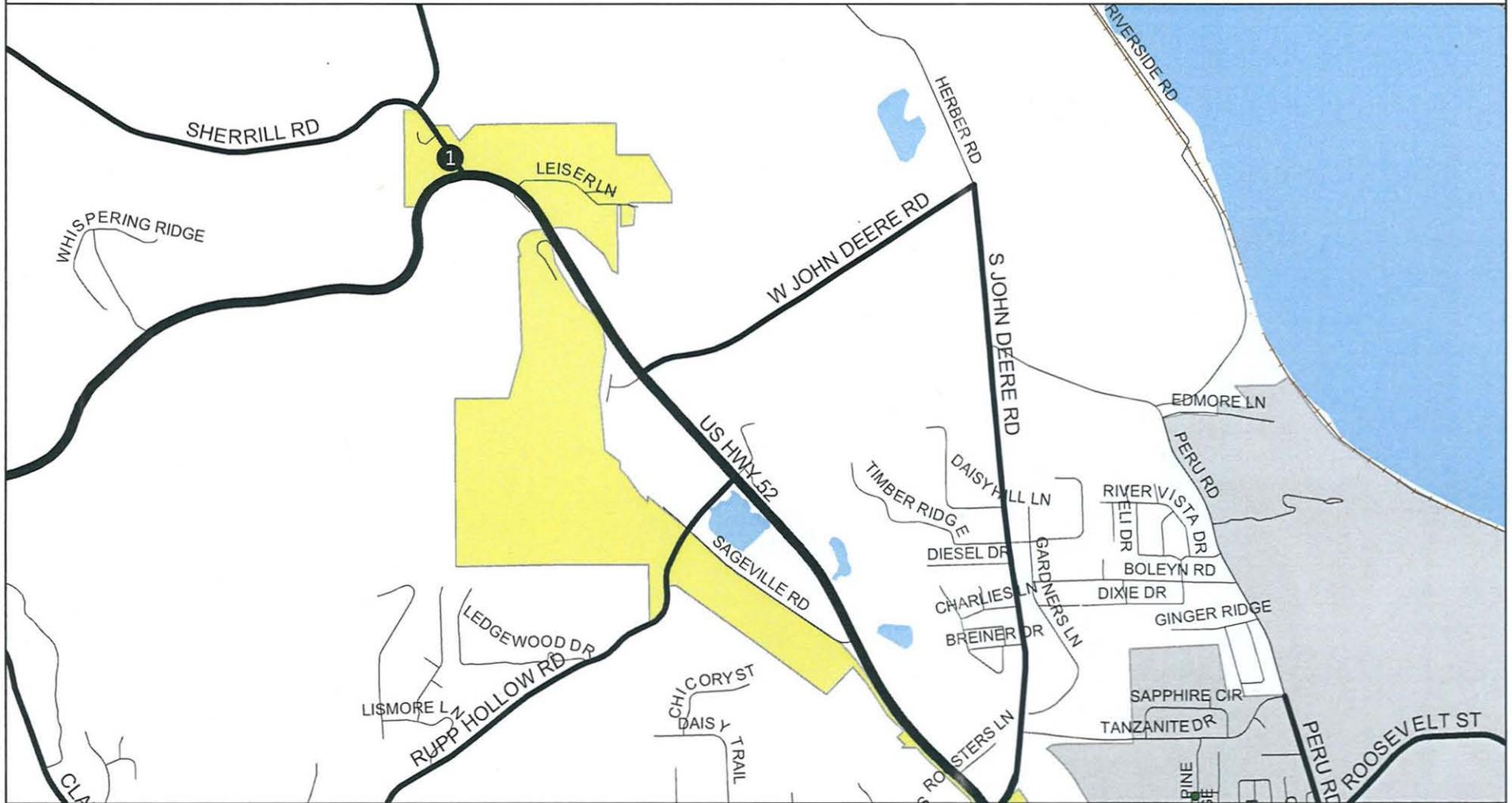
 Corporate Boundary

- 1. St. Joseph Church
- 2. Sewer Plant
- 3. City Clerk's Home



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Sageville Critical Facilities

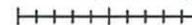


### Legend

 Corporate Boundary

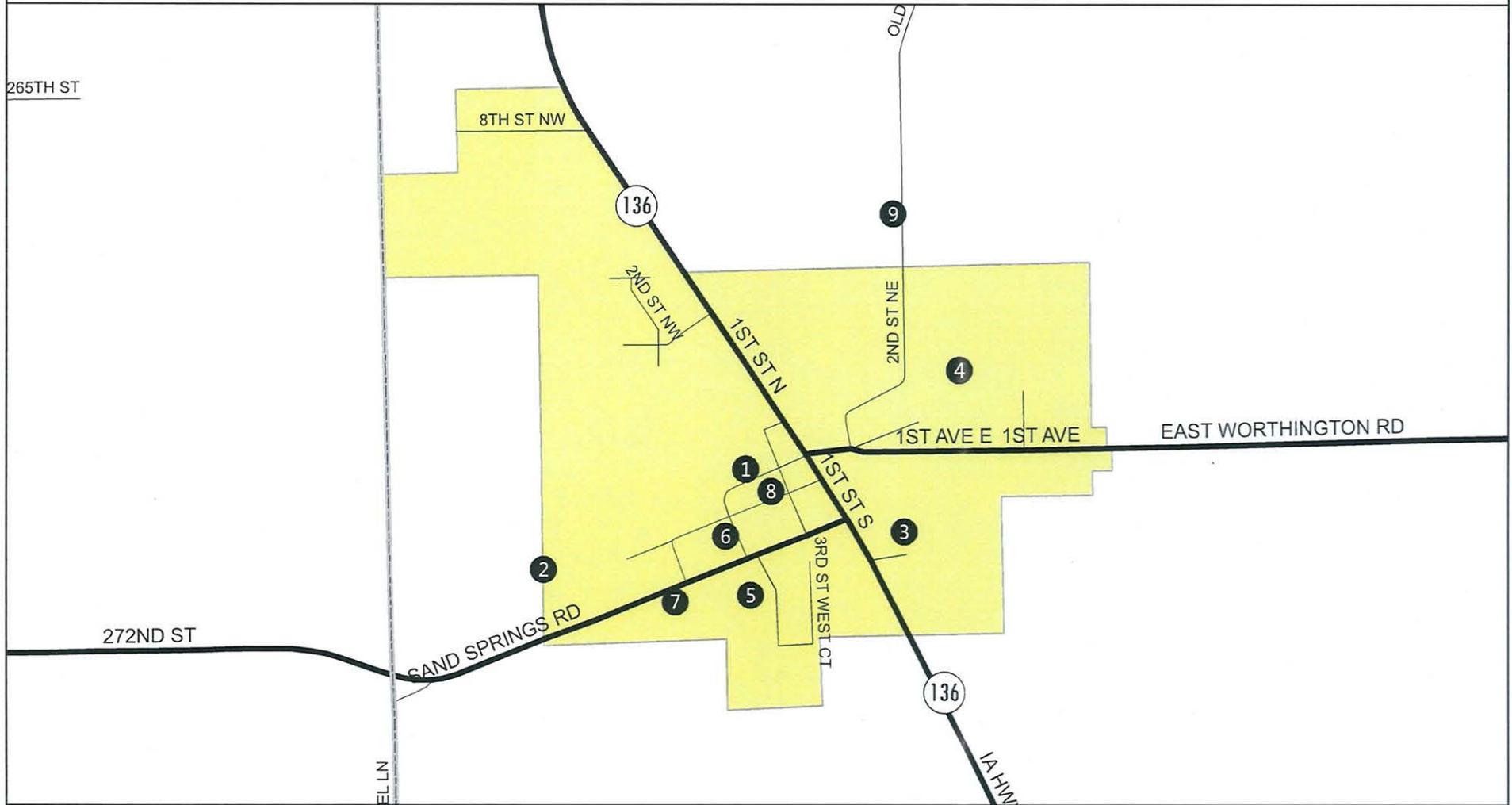
1. Weather Siren

0 1,000 2,000 Feet



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Worthington Critical Facilities



### Legend

 Corporate Boundary

- |                           |                           |
|---------------------------|---------------------------|
| 1. City Hall/Fire Station | 7. Maintenance Shop       |
| 2. Wastewater Facility    | 8. Iowa Telecom           |
| 3. Water Tower            | 9. Natural Gas Substation |
| 4. Memorial Hall          |                           |
| 5. St. Paul's School      |                           |
| 6. St. Paul's Church      |                           |

0 1,000 2,000 Feet



## Appendix G:

### Dubuque County Licensed Day Care Centers & Preschools

- FAMILY CHILD CARE HOMES & CENTERS FOR DUBUQUE COUNTY, IA : RUN DATE: 5/29/12
- Child Development Home Category: No home can take more than 3 children under the age of 18 mo and 4 under age of 2.
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- C-1: 8 children at any time. C-2: 12 children at any time, plus 2 school age children for less than 2 hours, plus 2 part-time.
- \*NO NEW REFERRALS

NAME:	CAT:	ADDRESS:	CITY:	ZIP:	PHONE: 563/	
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Alexander, Casey	B	3615 Hillcrest Road	Dubuque	52002	582-2359	
Amunrud, Debra	B	5341 Park Place	Dubuque	52002	556-1091	Deb's Daycare
Anderson, Bonita	A	514 E 22 <sup>nd</sup> Street	Dubuque	52001	513-0630	
Apel, Barbara	B	722 Fremont Avenue	Dubuque	52003	557-3885	
Arensdorf, Charlene	A	529 Rhomberg Avenue	Dubuque	52001	513-3330	
Bainbridge, Peggy	A	140 Croydon Crest	Dubuque	52001	556-9299	
Baker, Kimberly & William	C-2	408 Hill Street	Dubuque	52001	513-3009	Cradles 2 Crayons
Barnett, Deborah	B	2711 Brunskill Rd	Dubuque	52003	584-2581	Tater Tot Care
Benson, Laura	B	1625 S Grandview Avenue	Dubuque	52003	556-2669	
Biedermann, Bruce	B	1615 Adair Street	Dubuque	52001	583-0859	
Boland, Catherine (Cathy)	B	2450 Pearl St	Dubuque	52001	556-5456	
Brade, Grace	B	2820 Pinard Street	Dubuque	52001	513-0751	
Brehm, Karla	B	104 3 <sup>rd</sup> Avenue	Farley	52046	744-3420	
Britton, Dawn	B	426 11 <sup>th</sup> Avenue SE	Dyersville	52040	875-2178	
Bussan, Karen	C-1	1226 Savanna Drive	Dubuque	52003	556-5697	
Carroll, Terri	A	2501 Washington St. PO Bx 214	Dubuque	52004	556-3128	
Chambers, Sheila	B	1063 Melrose Terrace	Dubuque	52001	583-3667	
Clancy, Shawna	B	2055 Schiller Street	Dubuque	52001	584-0193	
Clark, Ashley	B	1888 St. Joseph Street	Dubuque	52003-7142	594-0775	
Cobbins, Crystal	A	2842 Burlington St	Dubuque	50001-0913	513-2241	Crystal Care Center
Cole, Laura	A	2251 Central Avenue	Dubuque	52001	582-5459	Little People
Cooper, Jennifer	C-1	2369 Washington	Dubuque	52001	583-6972	Cooper's Place
Crooks, Amanda	B	17228 Irish Hill Lane	Bernard	52032	879-4108	
Decker, Margaret (Peggy)	B	505 3 <sup>rd</sup> Avenue NW	Farley	52046	744-3889	
Dubon, Cindy	A	521 Rhomberg Avenue	Dubuque	52001	513-0821	
Eckstein, Toni	B	2572 Jackson Street	Dubuque	52001	582-2414	Sweet Pea's CC
Eigenberger, Lynda	B	760 Levi Street	Dubuque	52003	583-1753	
Ernzen, Barbara	B	105 Corbett Street	Epworth	52045	876-3186	
Fisch, Kimberly	C 1	495 English Lane	Dubuque	52003	583-3560	

- FAMILY CHILD CARE HOMES & CENTERS FOR DUBUQUE COUNTY, IA : RUN DATE: 5/29/12
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- \*NO NEW REFERRALS

NAME:	CAT:	ADDRESS:	CITY:	ZIP:	PHONE: 563/
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Folsom, Cynthia	B	3513 Hillcrest Road	Dubuque	52002	556-8854	
Francois, April	A	1621 Rhomberg Avenue	Dubuque	52001	584-8978	
Gansen, Joann	A	2545 Asbury Rd	Dubuque	52001	583-3864	
Goerd, Lynn	B	17148 Pepper Lane	Dubuque	52001	557-8357	
Gordon, Mary	B	17304 Cinnamon Rd	Dubuque	52001	556-7226	
Hall, Jeannie	A	2533 Marywood Drive	Dubuque	52001	556-1011	Kiddy Kiddy DC
Hallman, Stacey	A	804 2 <sup>nd</sup> Street NE	Dyersville	52040	875-2679	Hallman Home DC
Haun, Donna	B	3075 Asbury Road	Dubuque	52001	556-3138	
Holister, Jennifer	B	17163 Pepper Lane	Dubuque	52001	690-1305	Hollister daycare
Huseman, Marion (Diann)	B	1120 West 5 <sup>th</sup> Street	Dubuque	52001	582-3138	
Ihm, Laurie	B	10888 Cedar Ridge Court	Peosta	52068	582-1307	
Johll, Deanne (Susan)	B	2149 Graham Circle	Dubuque	52002	556-3037	
Johnsrud, Tiffany	B	649 Birch Ridge N	Peosta	52068	210-3224	(209) area code
Jungk, Theresa	B	1775 Key Way Drive	Dubuque	52002	556-0199	
Juriscic, JoAnn M	A	511 Sapphire Circle PO Box 1243	Dubuque	52004-1243	557-7725	
Katzenburger, Amy	A	2244 Francis Street	Dubuque	52001	582-2477	
Kluesner, Angie M	B	5192 Sun Valley Drive	Asbury	52002-2457	582-7162	Magical Moments DC
Konrardy, Dawn	B	1304 Rhomberg Ave.	Dubuque	52001	588-0399	
Kramer, Karen	C-1	510 West Main Street	Epworth	52045	876-3746	Home Childcare
Kramer, Rhonda	C-1	404 7 <sup>th</sup> Avenue NE	Farley	52046	744-3528	
Kremer, Linda	B	2257 Schemmel Road	Cascade	52033	852-3810	
Kress, Lorna	B	2211 St. John Dr	Dubuque	52001	845-0205	
Lawler, Elizabeth	B	2924 Olde County Lane	Dubuque	52001	582-1253	Liz Lawler Day Care
Lawson, Carol	B	715 Willow Ridge N	Peosta	52068	584-0838	
Leib, Abby	B	2184 St John Drive	Dubuque	52002	584-8921	
Lindauer, Lisa*	B	304 Polk Street SW	Cascade	52033	852-5036	
Loes, Lori	B	410 Polk Street SE	Cascade	52033-9575	852-3519	
Loney, Elizabeth (Betty)	B	593 Tanzanite Driven	Dubuque	52001	582-2511	Betty's Family CC
Lott, Cecelia	A	2205 Trenton Rd	Asbury	52001	513-2517	

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- \*NO NEW REFERRALS

NAME:	CAT:	ADDRESS:	CITY:	ZIP:	PHONE: 563/
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Ludwig, Kayla	B	627 5 <sup>th</sup> Street SE	Dyersville	52040	875-8111	
Marks, Abbigail	A	2220 Washington St	Dubuque	52001	513-2221	
Mayne, Roseann	A	1623 Washington Street	Dubuque	52001	897-1214	(515)
McClain, Karen	B	790 Rush Street	Dubuque	52003	582-8215	
Meyer, Jessica	B	4503 Camelot Drive	Dubuque	52001	556-8159	Jessica's Little Angels
Meyer, Julie	A	1423 Rhomborg Ave	Dubuque	52001	582-1197	
Moody, Michelle	B	699 Kane Street	Dubuque	52001	556-7819	
Murphy, Donna	A	852 Alpine Street	Dubuque	52001	583-3437	
Neumann, Linda	B	1994 Ellen Street	Dubuque	52002	582-8279	No Place like home
O'Neill, Kathy	B	6323 Mandan Ct	Dubuque	52002-9669	556-5054	Circle of Friends CC
Oberhoffer, Jennifer	B	569 Walnut Ridge	Peosta	52068	583-4012	
Ohmert, Carol	C-1	1975 Avalon Road	Dubuque	52001-4007	556-0745	Carol's Childcare
Osthoff, Heather	B	903 Garfield Avenue	Dubuque	52001	582-3886	
Osthoff, Victoria (Vickie)	B	N Main Street	Dubuque	52001	556-1895	
Patterson, Patricia	B	2011 Kniest Street	Dubuque	52001	556-8183	
Peiffer, Cindy	B	916 6 <sup>th</sup> Avenue SE	Cascade	52033	852-7171	
Pond, Jessica	C-1	97B Collins Street	Dubuque	52001	588-8099	Frog Pond
Riniker, Melissa	A	325 5 <sup>th</sup> Avenue	Dubuque	52001	875-6212	
Rios, Paula	C-1	8557 Belvue Hgts	Dubuque	52003-9201	557-8043	
Roling, Michelle	A	2766 Carlton Avenue	Dubuque	52001	582-5322	
Roth, Deborah	B	857 Berkley Place	Dubuque	52001	582-9282	
Salow, Emily	B	111 3 <sup>rd</sup> Avenue SW	Dyersville	52040	875-6393	
Schaffer, Kat	B	17516 Melody Circle	Dubuque	52001	845-0393	
Schatzabel, Tracey	B	2293 Washington Street	Dubuque	52001	583-6946	
Schlichte, Susan	C-1	28726 Old Castle Rd	Dyersville	52040	744-9028	
Schmit, Kimberly	B	2225 Clydesdale Court	Dubuque	52001	583-8749	
Schmitt, Sharon (Shari)	B	210 7 <sup>th</sup> Street SE	Farley	52046	744-3549	
Stanton, Kim Ann	B	1184 Cleveland Avenue	Dubuque	52003	582-2206	
Stoffel, Peggy S	B	3390 Crestwood Drive	Dubuque	52002	582-3453	Wiggles & Giggles

- FAMILY CHILD CARE HOMES & CENTERS FOR DUBUQUE COUNTY, IA : RUN DATE: 5/29/12
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- \*NO NEW REFERRALS

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Stovall, Linda	B	3345 Tibey Court	Dubuque	52002	557-9227	
Streasulin, Christy	B	1127 Hansel Circle	Peosta	52068	583-4781	
Streif, Barbara	B	12567 Cousins Road	Peosta	52068	582-7332	
Theisen, Michel	B	111 Corbett Street PO Box 408	Epworth	52045	876-3618	
Turner, Kristine	B	1997 Lagen Street	Dubuque	52002	556-8229	
Vaske, Jennifer	B	628 E Main Street	Epworth	52045	876-8189	
Vondran, Sheri	B	15483 Lore Mound Ct.	Dubuque	52002-9526	845-0678	
Wagner, Lacey	B	1819 Norland Drive	Dubuque	52002	582-6294	
Waite, Margaret	B	180 Devon Drive	Dubuque	52001	556-5823	Total Tots Too
Washington, Alice	A	1697 Jackson St PO 3234	Dubuque	52004	556-6703	
Welsh, Stacey	A	1640 Ashton Place	Dubuque	52001	588-1176	Giggles & Wiggles
Welter, Amy	B	6070 Amber Ridge Drive	Dubuque	52001	582-4487	
Wertzberger, Rosemary	B	1512 Lucy Drive	Dubuque	52002-2697	583-2239	
Winfrey, Everett	A	364 Hill Street	Dubuque	52001	845-0465	
Young, Carole	A	2024 Central Avenue Apt 2	Dubuque	52001	513-2253	

## Centers:

ABC Learning Early Childhood Center	3100 Cedar Crest Ridge Ste 3	Dubuque	52003	583-6654
Aquin Early Childhood Center	411 Avenue NW	Cascade	52033	852-7020
Dbq Comm Y CC Program	35 N Booth Street	Dubuque	52001	556-3371
Dbq Montessori School	2605 Pennsylvania Ave	Dubuque	52001	556-5101
Early Learners (WPE)	610 Duggan Drive	Dubuque	52003	556-8160
Early Learners (WPE)	3495 Windsor Avenue	Dubuque	52001	583-3501
Finley/DCY Childcare	300 N Grandview Ave	Dubuque	52001	589-2640
Frog Hollow	5005 Asbury Road	Asbury	52002	582-2200
Grandview Preschool & CDC	3342 John Wesley Drive	Dubuque	52002	582-1125
Hills & Dales	3505 Stoneman Rd	Dubuque	52001	583-5033
Holy Ghost Catholic CC	2981 Central Ave	Dubuque	52001	582-2578
Key West Early Childhood	10244 Key West Drive	Dubuque	52003	583-1881

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- \*NO NEW REFERRALS

NAME:	CAT:	ADDRESS:	CITY:	ZIP:	PHONE: 563/
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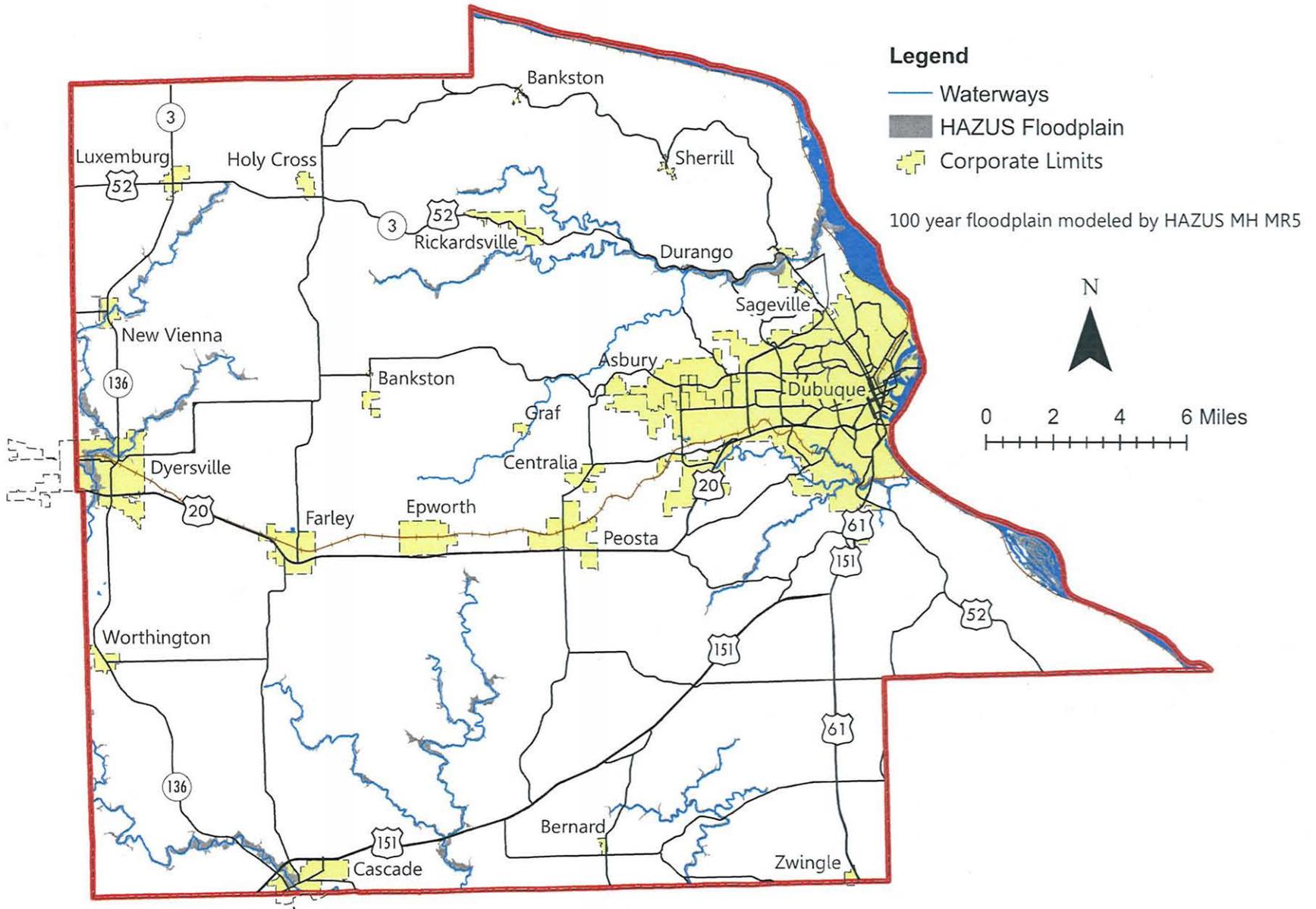
Kids of the Kingdom DCY		2899 Hales Mill Rd	Dubuque	52002	557-9290
Little Rascals		1125 Rockdale Rd	Dubuque	52002	582-2400
Little Treasures		2035 Radford Rd	Asbury	52002	556-3800
Mercy Child Dev Center		250 Mercy Drive	Dubuque	52001	589-9680
NICC Child Dev Center		10250 Sundown RD	Peosta	52068	556-5110 ext 245
Pooh's Corner Child Ctr		3507 Keystone Drive	Dubuque	52001	583-8275
Prodigy Child Development		715 W Locust Street	Dubuque	52001	588-2800
Resurrection Children		4300 Asbury Rd	Dubuque	52002	583-5206
Rompers Stompers		2307 Central Ave	Dubuque	52001	556-1500
St Anthony's CC		2175 Rosedale Avenue	Dubuque	52001	556-2820
St Columbkille CC		1198 Rush Street	Dubuque	52001	583-1620
St Joseph the Worker		2105 St Joseph Street	Dubuque	52001	582-1246
St Mark's Comm Ctr		1201 Locust Street	Dubuque	52001	582-6211
The Kid Project CCC		415 9 <sup>th</sup> Avenue SW	Dyersville	52040	875-2080
University of DBQ CC		1001 McCormick Street	Dubuque	52001	585-7461
Young Uns CC Ctr		3375 Kennedy Circle	Dubuque	52001	584-0845

Appendix H:

FIRMETTES & HAZUS 100-Year Flood Plain Maps

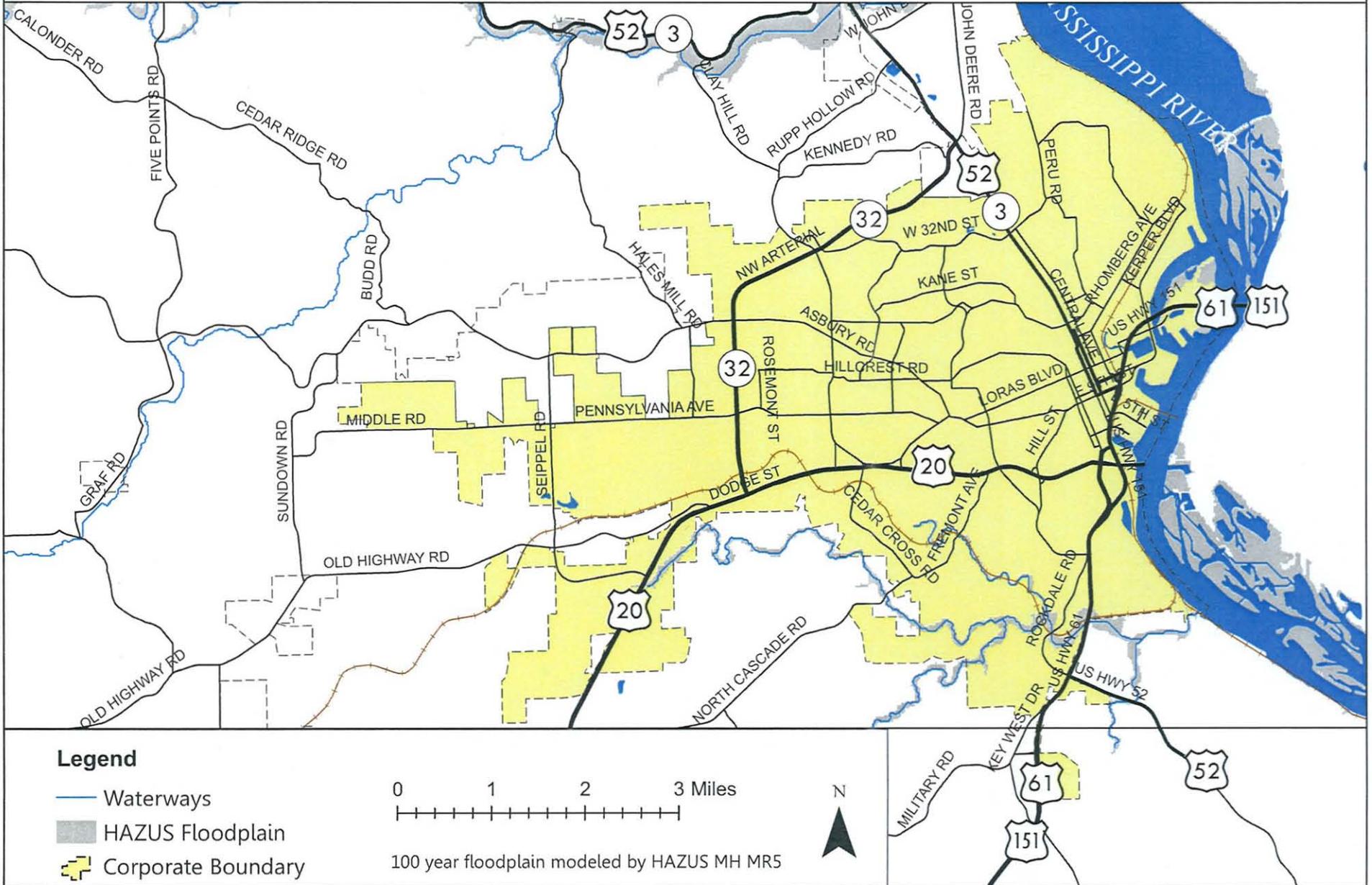
# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## Dubuque County HAZUS Floodplain



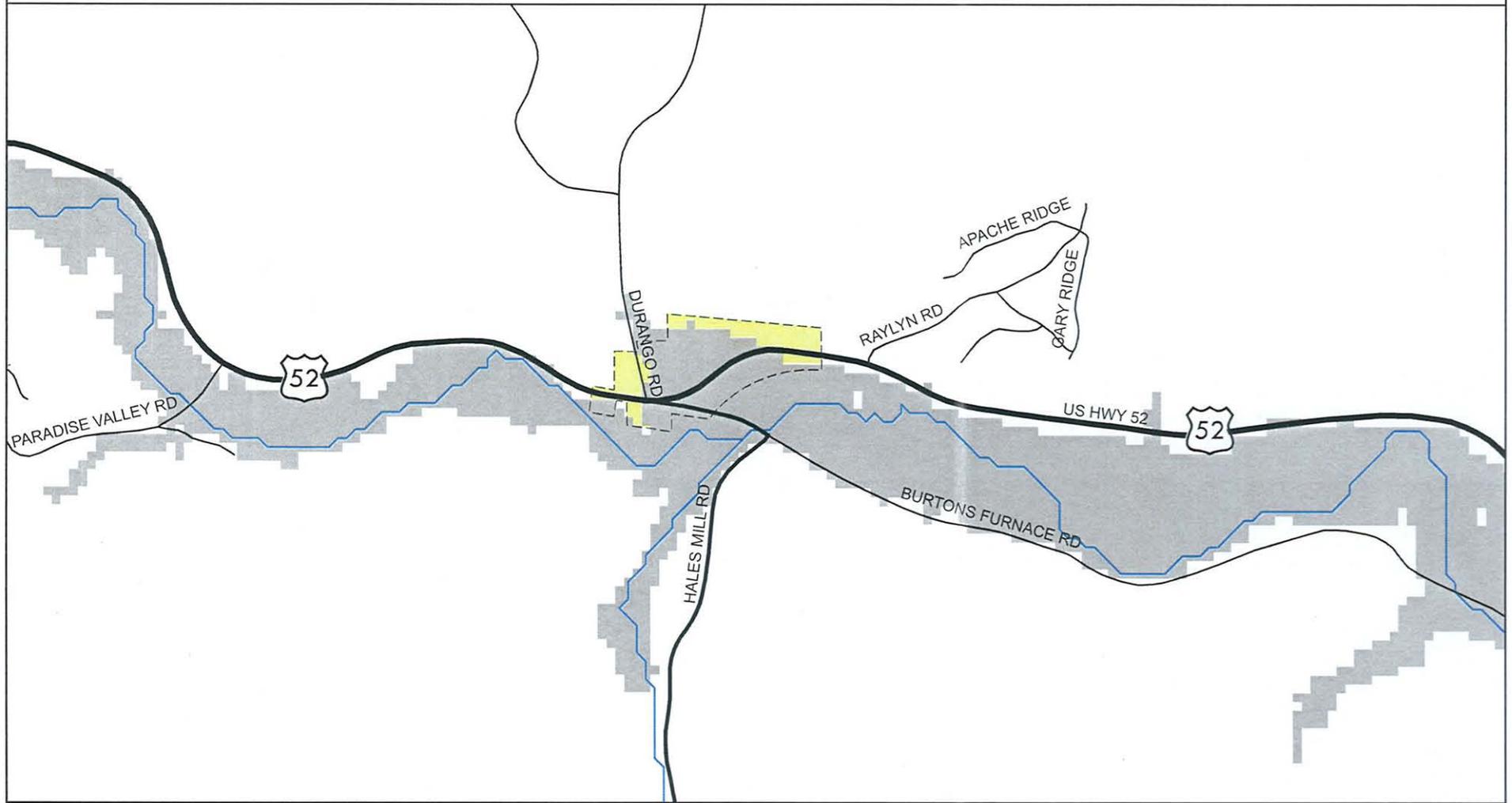
# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Dubuque HAZUS Floodplain



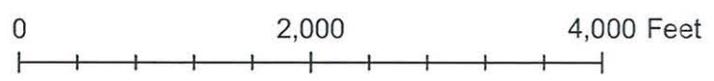
Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

# City of Durango HAZUS Floodplain



### Legend

- Waterways
- HAZUS Floodplain
- Corporate Boundary

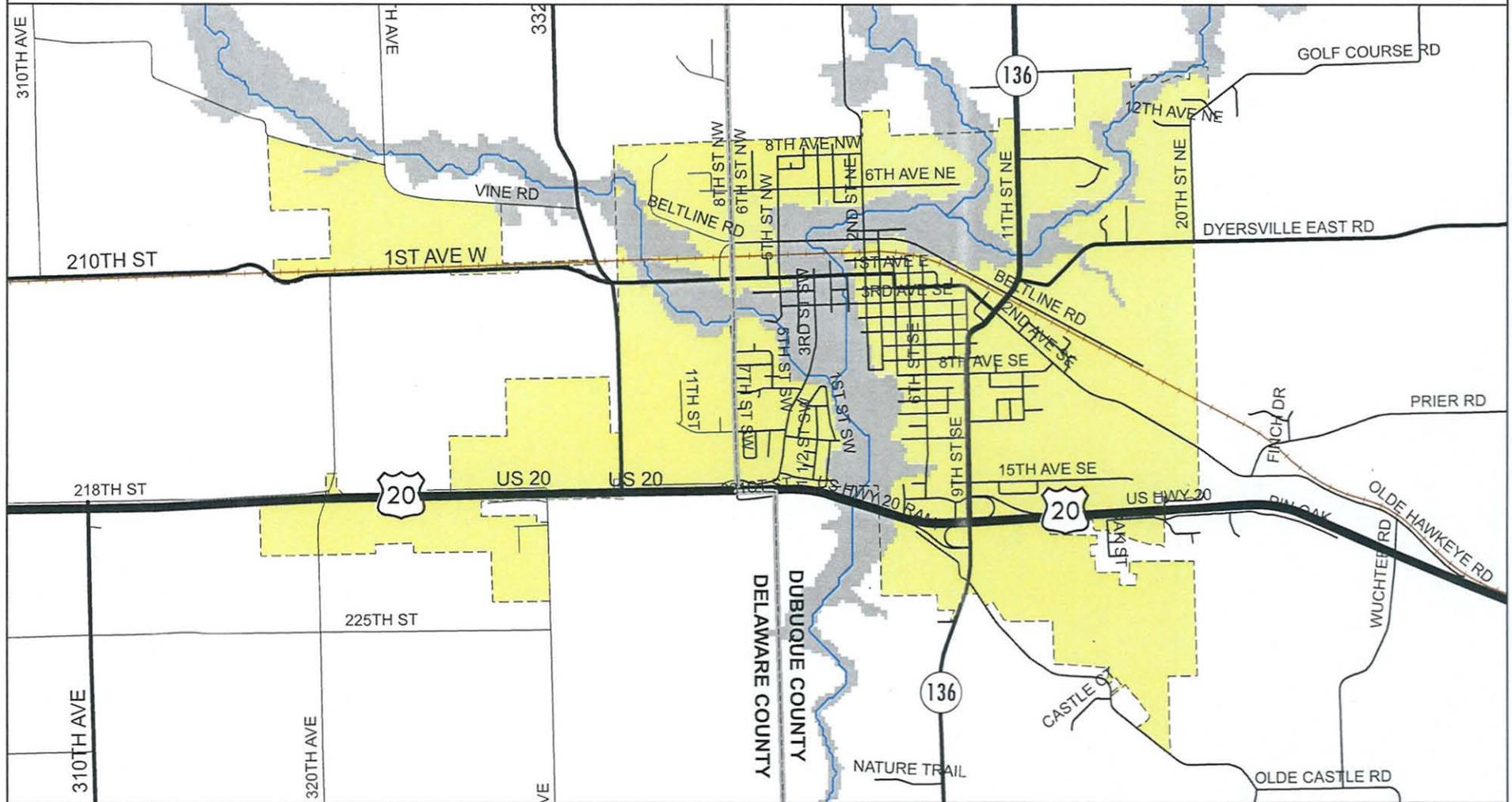


100 year floodplain modeled by HAZUS MH MR5



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Dyersville HAZUS Floodplain



### Legend

- Waterways
- HAZUS Floodplain
- Corporate Boundary

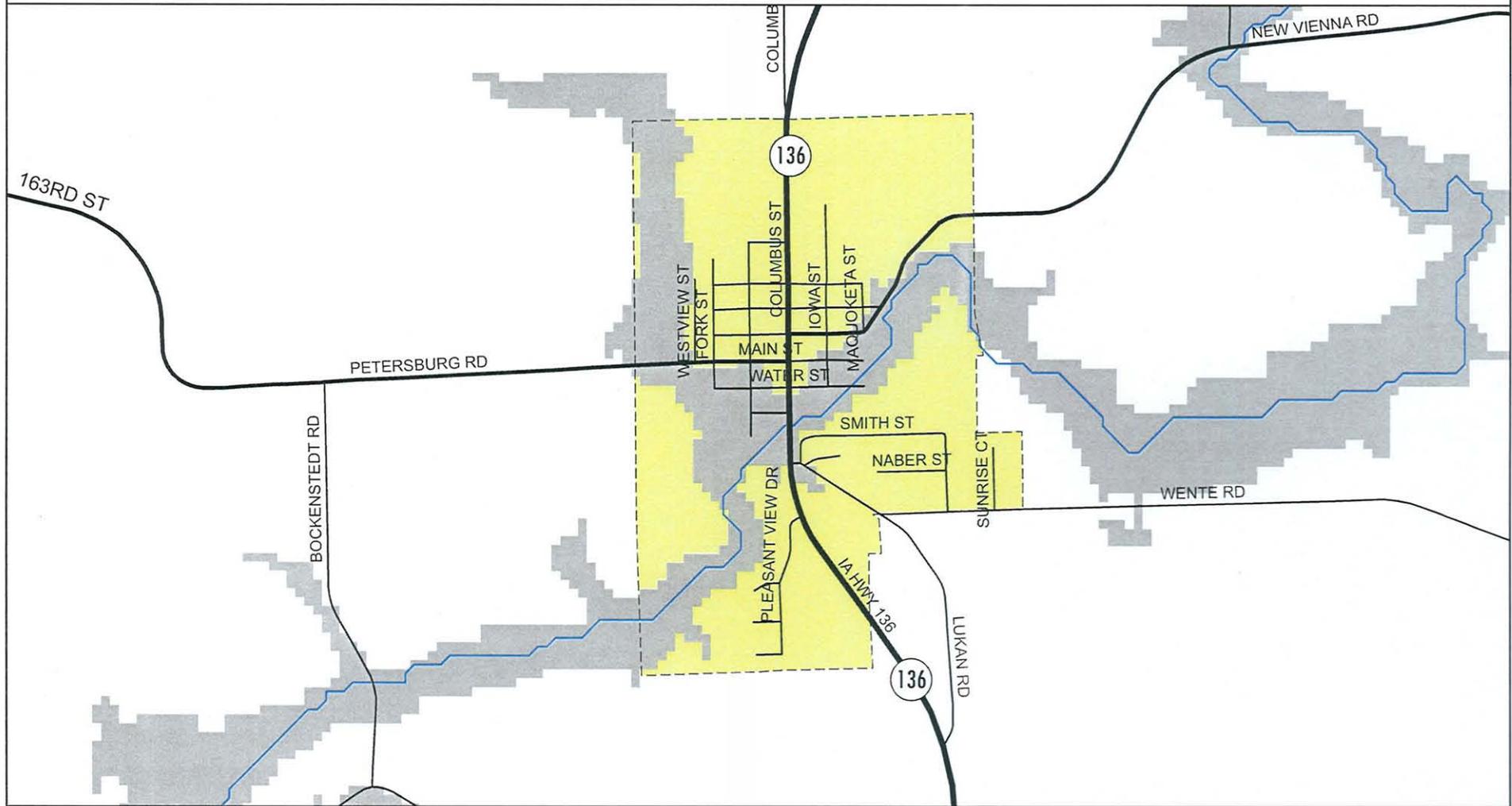
0 2,000 4,000 6,000 8,000 Feet

100 year floodplain modeled by HAZUS MH MR5



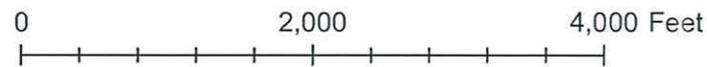
Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

# City of New Vienna HAZUS Floodplain



### Legend

- Waterways
- HAZUS Floodplain
- Corporate Boundary

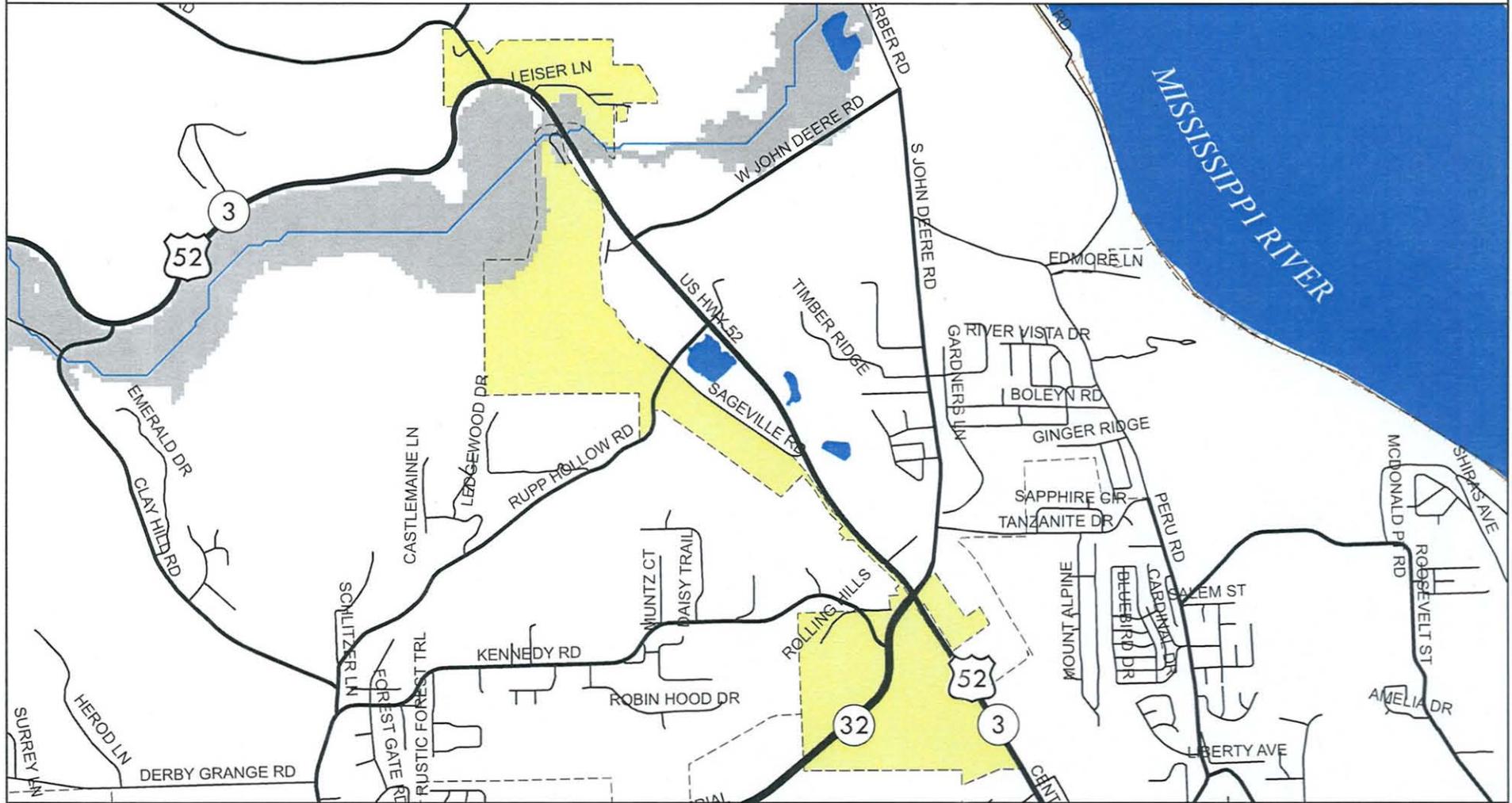


100 year floodplain modeled by HAZUS MH MR5



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Sageville HAZUS Floodplain



### Legend

- Waterways
- HAZUS Floodplain
- Corporate Boundary

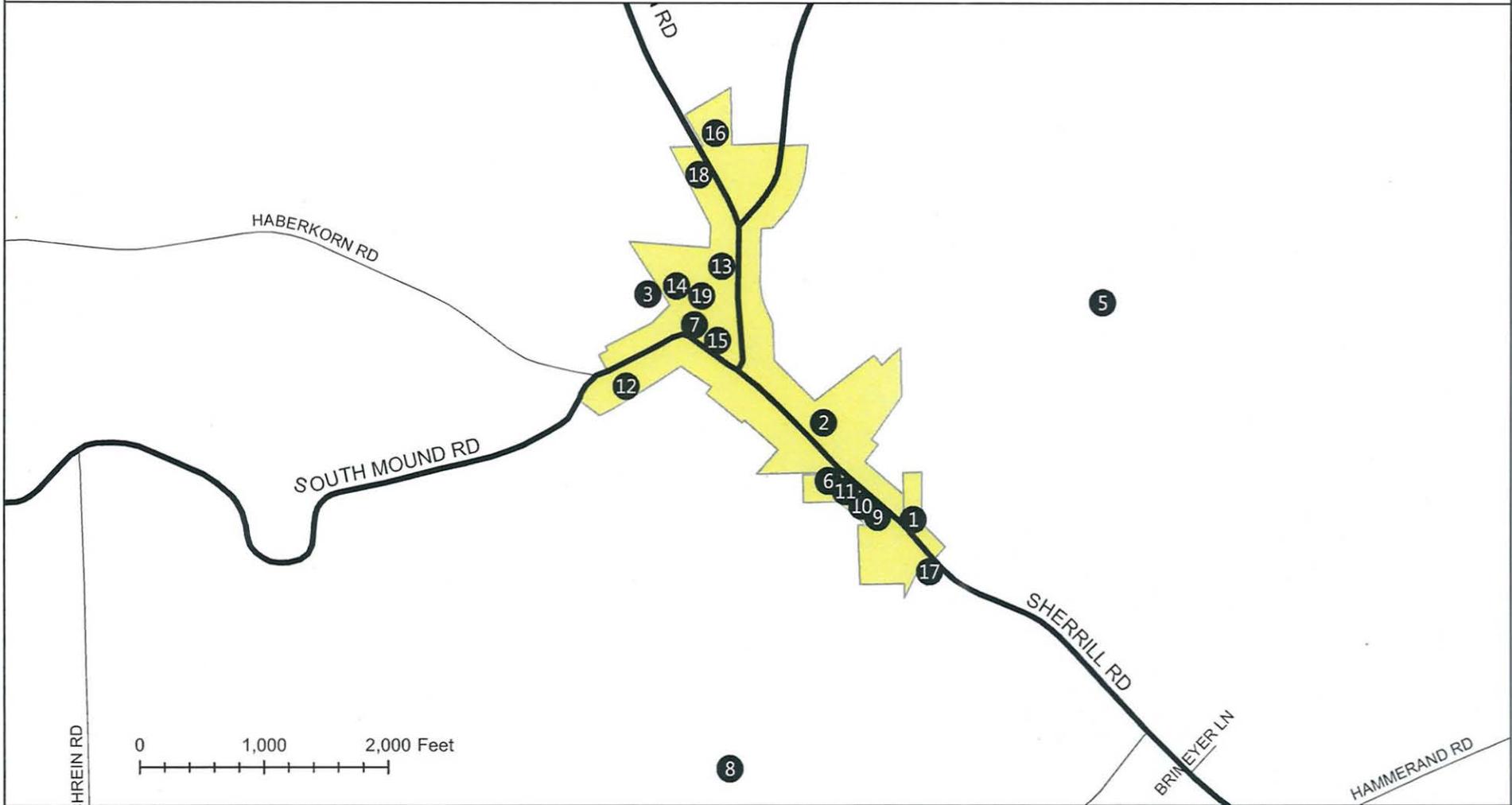
0 2,000 4,000 6,000 8,000 Feet

100 year floodplain modeled by HAZUS MH MR5



# Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

## City of Sherrill Critical Facilities



**Legend**

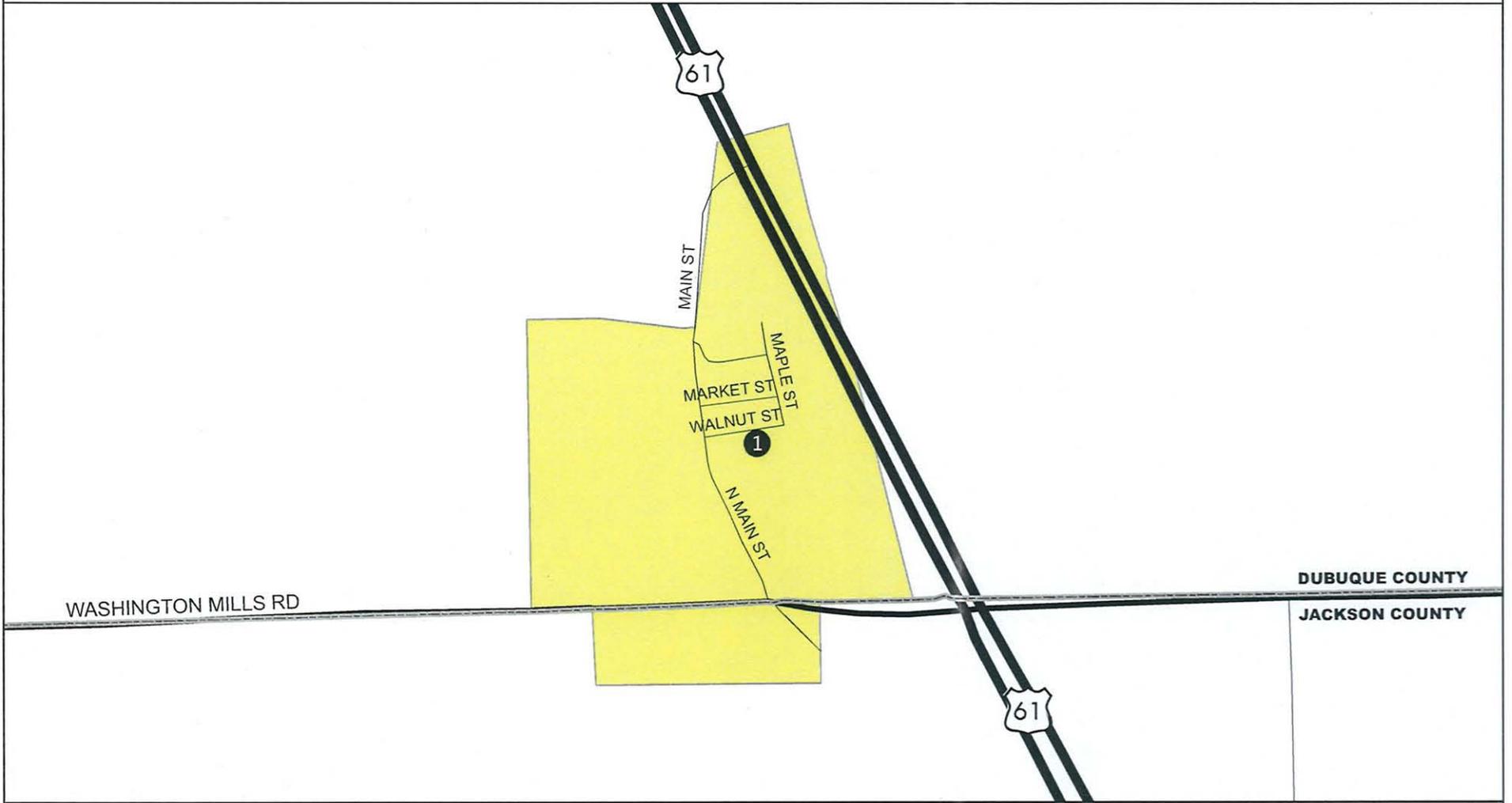
Corporate Boundary

- |                                      |                            |                              |               |
|--------------------------------------|----------------------------|------------------------------|---------------|
| 1. United Church of Christ           | 7. Fire Station            | 13. St Matthew Church        | 19. City Park |
| 2. St. Peter and Paul Church         | 8. South Lagoon            | 14. City Maintenance Shop    |               |
| 3. Athletic Ball Field               | 9. Spoerl Chevrolet        | 15. Telephone Switch Station |               |
| 4. Balltown/Sherrill Catholic Church | 10. Dave's Welding Shop    | 16. Richard Clemen Welding   |               |
| 5. East Lagoon                       | 11. Sherrill Feed & Supply | 17. Sherrill Insurance       |               |
| 6. The Barn                          | 12. Moundside Bakery       | 18. The Deer Shack           |               |



Dubuque County Multi-Jurisdictional Hazard Mitigation Planning

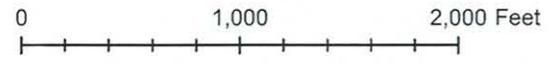
# City of Zwingle Critical Facilities



**Legend**

 Corporate Boundary

1. Sewer Station



Appendix I:

Mitigation Measures from Previous Single Jurisdiction  
Mitigation Plans

## APPENDIX I

### 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 that were in place and FEMA-approved at the time the Dubuque County Multi-Jurisdictional Hazard Mitigation Plan was developed. This includes Unincorporated Dubuque County; the cities of Asbury, Bankston, Bernard, Dubuque, Dyersville, Graf, Holy Cross, Luxemburg, New Vienna, Peosta, Sherrill, and Worthington. The cities of Bankston, Cascade, Centralia, Durango, Epworth, Farley, Rickardsville, Sageville, and Zwingle did not have current hazard mitigation plans and therefore are not included.

C = Complete

I = Incomplete

O = Ongoing

IP = In Process

N/A = No longer applicable

#### Unincorporated Dubuque County - 2011

Number	Mitigation Action	Status
1	Continue to monitor the effectiveness of severe winter weather policies and update as needed.	O
2	Continue to monitor the effectiveness of snow removal and ice control policies and update as needed.	O
3	Develop Emergency Alert Notification Systems for vulnerable unincorporated areas of Dubuque County (i.e. text alert, email, voice recording, etc.) to notify residents of pending/possible disasters.	IP
4	Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the County to provide power in the event of a power failure.	O
5	Maintain contract service and implement processes for off-site storage of information for backup access.	O
6	Continue to purchase and seek funding for communication tools such as Mobile Computer Terminals and 2-Way Radios.	I
7	Maintain the Business Continuity Plan to address day-to-day County business operations.	O
8	Continue to explore solutions to improve radio and/or cell communication in Holy Cross fire department territory, such as alliances with commercial cell phone companies, IDOT or County towers.	O
9	Improve the drainage system of the Sageville/Couler Valley Drainage System. The proposed project consisted of the grading and reshaping of the drainage area, protection of Flexsteel Industries for excess drainage, and construction of the Herber Road bridge and roadway	O

	elevation.	
10	Work with the Iowa Department of Transportation (IDOT) to resolve flooding to the east of John Deere Road in the Sageville/Couler Valley Drainage System. The project includes the installation of additional floodgates in this Sageville/Couler Valley Drainage System.	N/A
11	Continue to enforce Floodplain Ordinance and monitor all construction activities that are located in or near a floodplain.	O
12	Continue to support the efforts of the Council of Governments in their mitigation actions to reduce flooding of the Little Maquoketa River basin.	O
13	Continue to support the efforts of the NRCS in Dubuque County to reduce flooding in flood prone areas and provision of educational information to farmers and use of BMPs.	O
14	Continue to maintain, promote and administer storm water retention ordinances with other jurisdictions and update as needed.	O
15	Maintain an evacuation plan as referenced out of the Comprehensive Emergency Management Plan (CEMP).	O
16	Continue to identify probable areas for potential hazards, assess traffic capacity of highways and roads, and identify shelters for the hazards and develop best routes for evacuations.	O
17	Continue to maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	IP
18	Continue public awareness campaign, including educational programming, marketing, public service announcements and advertising to inform the public regarding the proper procedure during a flood.	O
19	Modify the Flood Plain Management Ordinance as necessary with a target of alleviating flooding.	O
20	Purchase more barriers and floodgates to better block and inform drivers of flooded areas.	O
21	Enforce plan to close roads during flood to prevent drivers from entering area.	O
22	Install river gauges and/or river stream sensors to measure the height of water and better enable the County to monitor river levels and potential flooding.	O
23	Continue to purchase and seek funding for communication tools such as Mobile Computer Terminals and 2-Way Radios.	IP
24	If necessary, elevate structures in the hazard's path, and create detention and/or retention basins.	O
25	If necessary, raise, grade or resurface roads and/or reinforce culverts to counteract washouts.	O
26	Maintain Community Alert Network system that includes the auto-dial potential for all households and businesses in the line of a severe	O

	storm.	
27	Continue program to educate residents on NOAA indoor weather radios and provide a rebate program for a portion of the purchase price for residents, or distribute as available.	O
28	Develop a Geographic Information System (GIS) to provide detailed evacuation routes and shelter sites for throughout the County to be used internally by the EMA Coordinator to better direct in the event of a disaster.	IP
29	Develop a public awareness campaign, including educational programming, marketing, public service announcements, and advertising to inform the public regarding the proper procedure during a tornado and other severe storms	O
30	Maintain an evacuation plan as referenced in the CEMP.	O
31	Develop Emergency Alert Notification Systems for vulnerable unincorporated areas of Dubuque County (i.e. text alert, email, voice recording, etc.) to notify residents of pending/possible disasters.	O
32	Encourage building a tornado safe room in conjunction with all rehabilitation or new construction of County facilities.	O
33	Continue to maintain existing generators and infrastructure to operate County facilities in the event of a power outage.	O
34	Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the County to provide power in the event of a power failure.	O
35	Continue to purchase and seek funding for communication tools such as Mobile Computer Terminals and 2-Way Radios.	O
36	Continue to maintain existing generators and infrastructure to operate County facilities in the event of a power outage.	O
37	Develop Extreme Heat Plan.	IP
38	Continue to monitor public roads of concern that may require maintenance or rebuilding and repair or rebuild as deemed necessary.	O

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N/A = No longer applicable

#### Asbury – 2009

Number	Mitigation Action	Status
1	Continue to use City Hall as a storm shelter and to consider the building of a safe room in conjunction with any new city building projects for the safety of current and future Asbury citizens.	O
2	Continue to keep all seven backup generators in good repair and available.	O
3	Continue to notify residents through a newsletter about the hazards of thunderstorms, lightning, high windstorms and tornadoes and include	O

	directions to the NOAA website	
4	Continue to monitor emergency sirens and monitor coverage as city grows.	O
5	Purchase two additional generators for sewer lift stations as funds become available.	O
6	Build new lift stations with generators in place as determined by the City's continued growth.	O
7	Consider building a new city hall, police station and water tower to better serve the growing population of the City of Asbury.	I
8	Continue to maintain snow removal policy, including no parking on city streets within 48 hours of a severe winter storm.	I
9	Notify residents through a newsletter and website about the hazards of severe winter storms.	O
10	Continue to improve awareness through public service announcement on Cable TV and radio or newsletters.	O
11	Utilize city marquee to make public service announcements regarding hailstorms and other hazards.	O
12	Refrain from issuing burn permits in times of extreme heat or drought to prevent fires.	O
14	Continue to make the Fire Station available as a shelter space to persons in need on a temporary basis during periods of extreme heat.	O

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#### Bankston - 2009

Number	Mitigation Action	Status
1	Consider the building of a safe room in conjunction with any new city building projects for the safety of current and future Bankston citizens. And, in the meantime, continue "shelter in place" policy.	O
2	Reconnect the city's weather siren.	N/A
3	Explore use of reverse 911 systems.	O
4	Provide education on NOAA radio usage.	O
5	Refer people who are suffering from the effects of extreme temperatures to Dubuque or Dyersville hospitals.	O
6	Continue to make church available on temporary basis to those suffering from effects of extreme heat.	O
7	Refer people who are suffering from the effects of extreme temperatures to Dubuque or Dyersville hospitals or to Operation New View in Dubuque	O
8	In the event of serious damage from future flash flooding, upgrade storm sewers and culverts as needed.	O
9	In the event of serious damage from future flash flooding, elevate or	O

	acquire structures in the path of repeat flash flooding.	
10	In the event of serious damage from future flash flooding, and if deemed appropriate, add lift stations.	O

**Bernard - 2009**

Number	Mitigation Action	Status
1	Explore the possibility of building a safe room/city hall/community room with backup generator that will also serve the water supply in the event of a power outage for the safety of current and future residents of Bernard.	O
2	Maintain outdoor weather siren.	
3	Purchase backup generator(s) and install hookups to provide electricity for the water supply and the main pumping station in the event of a power outage.	
4	Continue contract for snow removal.	
5	Continue to make Emergency Management Services building available in the event of hazardous weather.	
6	Continue to employ Good Neighbor policy and Shelter in Place policy until better options available.	
7	Find and implement solution as to why sewer system is being infiltrated.	

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**Dubuque - 2011**

#	Mitigation Action	Status
1	Continue to maintain and update City's severe weather plan and winter weather plan on an annual basis.	O
2	Continue to remove snow and ice from City streets, airport parking and City-owned parking lots per the snow and ice control plans.	O
3	Continue to develop public awareness campaign, including educational programming, marketing, and public service announcements and advertising to inform the public regarding the proper procedure during a severe winter storm.	O
4	Continue maintenance review and enforcement of snow removal regulations and updating the ordinance regarding on-street parking following a snow event.	O
5	Continue to maintain, upgrade and acquire snow removal equipment as necessary.	O
6	Continue to maintain existing generators and infrastructure to operate city facilities in the event of a power outage.	O

7	Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the City to provide power in the event of a power failure.	IP
11	Encourage local news media to participate with the EMA staff and improve their emergency and severe storm weather coverage.	O
12	Continue to monitor and work with local AM and FM radio stations and cable TV providers with direct EAS systems.	O
13	Continue to promote the use of NOAA indoor weather radios at residences, schools, hospitals, nursing homes, etc., throughout the City.	O
14	Continue to maintain, enforce and update building codes as needed.	O
15	Maintain an evacuation plan as referenced in the CEMP.	O
16	Review and maintain outdoor warning systems and policies and expand as necessary based on coverage to protect all the current and future residents of the City of Dubuque.	O
17	Encourage building a tornado safe room in conjunction with all rehabilitation or new construction of City facilities.	O
19	Acquire permanent and portable generators and infrastructure necessary to operate generators as deemed necessary by the City to provide power in the event of a power failure.	IP
23	Restore the Bee Branch Creek with open channel from the 24 <sup>th</sup> St. neighborhood to E. 16 <sup>th</sup> St. retention basin, including the acquisition of approximately 70 homes and businesses.	IP
24	Complete improvements to the North Fork Catfish Creek from Key Way Dr. to the Northwest Arterial, including the upsizing of culverts under Key Way Dr. and Rosemont St.	C
25	Continue ongoing maintenance and monitoring of the City of Dubuque's floodwall system as mandated by federal law.	O
27	Continue public awareness campaign, including educational programming, marketing, public service announcements and advertising to inform the public regarding the proper procedure during a flood.	O
28	Maintain awareness of repetitive loss properties to identify potential areas of risk to life and safety of residents and consider pursuing grant funds for the acquisition and demolition of these properties.	IP
29	Conduct Levee Flood Certification analysis to determine whether or not improvements are deemed necessary for the floodwall system.	C
30	Make required improvements based on the outcome of the Levee Flood Certification.	O
31	Conduct a Levee Breach Study to determine scenarios in the event of levee failure.	IP
32	Develop evacuation plan based on Levee Breach Study.	IP
33	Purchase portable generators and necessary equipment to use along floodwall in the event of a power outage.	IP
34	Maintain and repair storm sewers as necessary.	O
38	If necessary, raise, grade or resurface roads; reinforce culverts to counteract washouts, or add lift stations if necessary.	O

39	Update and maintain Extreme Heat Plan.	O
42	Continue to monitor public retaining walls of concern that may require maintenance or rebuilding.	O
43	Evaluate ownership and work with responsible entities to mitigate any hazardous situations related to retaining walls in the City of Dubuque.	O

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### Dyersville - 2011

#	Mitigation Action	Status
1	Continue acquisition of flood-damaged properties through current and future State- and FEMA-funded programs and/or other programs and marketing of the programs to floodplain residents.	O
2	Continue flood watch protocol whereby river elevations are regularly monitored during potential flood events. Included in this protocol is the need to purchase cameras to assist in monitoring river levels from remote locations. The protocol includes defined responses to the various river elevations.	O
3	Continue the Flood Development Advisory Committee to review floodplain applications and provide input on process. The Committee will provide recommendations to city council as to whether or not to issue Building Permits.	O
4	Continue to address storm water runoff through development agreements for all commercial industrial and residential subdivision developments. The Planning & Zoning Commission, along with City staff, will review developments and work to assure storm water runoff issues are addressed in development agreements when appropriate.	O
5	Continue to enforce storm water ordinances.	O
6	Continue to enforce Dyersville floodplain ordinance and National Flood Insurance Program regulations. The City Administrator is designated as the local Floodplain Manager and enforcement person.	O
7	Continue to closely monitor development of land surrounding the City and potential for the creation of hazards to the City. The City Administrator will monitor and review land developments around the City and provide comments as appropriate.	O
8	Continue to maintain storm sewer system including the dry runs that serve as open channel drainage ditches.	O
9	Continue to improve storm sewer system as a component of the City's regular street improvement program.	O
10	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	O

	inspections of lift stations seals, etc. in the flood plain. The Public Works Department Head will recommend improvements to the City Administrator for inclusion in the City budget as funding allows.	
11	Continue to work with appropriate agencies to identify effective physical means to minimize flooding.	O
12	Continue to maintain and improve the outdoor warning system.	O
13	Continue to educate the public of appropriate responses to tornado watches and warnings.	O
14	Continue to train weather spotters.	O
15	Continue to identify and publicize location and availability of storms shelters.	O
16	Continue process of incorporating tornado safe-rooms into construction of new or rehabilitated buildings as appropriate.	O
17	Continue to encourage the National Weather Service to add a weather transmitter tower to their system or relocate their existing tower to better serve the City of Dyersville.	O
18	Continue to evaluate and monitor potential risks with utility placements.	O
19	Continue to maintain and update list of contacts at all critical facilities.	O
20	Continue to remove dead trees/prune trees and clean areas vulnerable to high winds. The Public Works Department Head will monitor trees within City right-of-way and continue to remove dead trees/prune trees vulnerable to high winds.	O
21	Continue with debris management training in response to high winds.	O
22	Continue to maintain and improve the outdoor warning system.	O
23	Continue to educate the public of appropriate responses to tornado watches and warnings.	O
24	Maintain and improve protocol for snow removal.	O
25	Continue to maintain and improve protocol for response to ice storms including downed power lines, debris removal, contact lists, etc. The local Emergency Management Director and Public Works Department Head jointly coordinate the response to ice storms.	O
26	Continue to maintain upgrades of equipment in Capital Improvements Plan budget. All City department heads present equipment upgrade requests to the City Administrator as part of the City budget preparation for the Administrator's and City Council's consideration.	O
27	Continue to educate the public on snow emergency declarations including snow routes, snow removal, etc.	O
28	Continue to maintain and improve the outdoor warning system.	O
29	Continue to educate the public of appropriate responses to tornado watches and warnings.	O
31	Continue to identify and publicize location and availability of storms shelters.	O
32	Continue process of incorporating tornado safe-rooms into construction of new or rehabilitated buildings as appropriate.	O
33	Continue to encourage the National Weather Service to add a weather	O

	transmitter tower to their system or relocate their existing tower to better serve the City of Dyersville.	
34	Continue to evaluate and monitor potential risks with utility placements.	O
35	Continue to maintain and update list of contacts at all critical facilities.	O
36	Continue to remove dead trees/prune trees and clean areas vulnerable to high winds. The Public Works Department Head will monitor trees within City right-of-way and continue to remove dead trees/prune trees vulnerable to high winds.	O
39	Continue to educate the public of appropriate responses to tornado watches and warnings.	O
40	Maintain and improve protocol for snow removal.	O
41	Continue to maintain and improve protocol for response to ice storms including downed power lines, debris removal, contact lists, etc. The local Emergency Management Director and Public Works Department Head jointly coordinate the response to ice storms.	O

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**Graf - 2008**

<b>Number</b>	<b>Mitigation Action</b>	<b>Status</b>
1	Ensure all residents in the community have NOAA indoor weather radios.	O
2	Improve public awareness of the potential risks of tornadoes through publication of a bi-annual newsletter.	O
3	Continue to enforce burn ordinances.	O
4	Continue to contract with the Epworth Fire Department for fire protection and training for Firefighter I Certification.	O

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**Holy Cross – 2010**

<b>Number</b>	<b>Mitigation Action</b>	<b>Status</b>
1	Consider the possibility of building a community safe room in conjunction with any future government building projects for the safety of current and future residents of Holy Cross.	C
2	Maintain the two existing outdoor warning sirens as an early warning signal to alert individuals of tornadoes and high winds and to reduce damages to existing buildings and infrastructure.	O
3	Construct new fire station to better serve the community and to allow for upgraded equipment and better response to hazards.	C
4	Replace tanker truck to meet safety guidelines and to provide better response in the event of an emergency.	C
5	Continue to enforce snow removal policy.	O

**Luxemburg -**

<b>Number</b>	<b>Mitigation Action</b>	<b>Status</b>
1	Consider the possibility of building a community safe room in conjunction with any future government building projects for the safety of current and future residents of Luxemburg.	O
2	Upgrade weather siren to one that includes battery backup.	
3	Continue Good Neighbor program where volunteers check on welfare of residents following a severe weather event.	
4	Purchase portable generator and prepare several facilities for hookup so that the generator could be used at the most needed facility during a power outage.	
5	Purchase generator and install at City Hall so that facility could be used as a temporary shelter in the event of a power outage.	
6	Maintain generator and hook up to the water system.	
7	Upgrade tanker/pumper trucks to assist in any fires caused by lightning as well as manmade fires.	
8	Issue monthly newsletter on the hazards of severe weather.	
9	Create and maintain city website to keep residents better informed of weather events and hazards related to severe weather.	
10	Continue to enforce snow removal policy.	
11	Purchase portable generator and prepare several facilities for hookup so that the generator could be used at the most needed facility during a power outage.	
12	Purchase generator and install at City Hall so that facility could be used as a	

	temporary shelter in the event of a power outage.	
13	Upgrade storm sewers to prevent flash flooding in times of heavy downfall of rain.	

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**New Vienna -**

Number	Mitigation Action	Status
1	Continue to improve public awareness through publications in local newspaper and newsletters.	
2	Check conditions of the coverage of the city's outdoor warning system.	
3	Continue to go to storm spotter training annually	
4	Purchase new digital pagers for the fire department.	
6	Continue snow removal policy.	
7	Continue to improve public awareness through publications in local newspaper and newsletters.	
8	Establish good neighbor program for winter storms	
10	Continue to monitor river levels and areas that have experienced flash flooding in the past.	
11	Perform Coffee Creek bank stabilization near baseball diamond to prevent washing and to protect sewer lines.	
12	Build another access road on higher ground to waste water treatment facility.	
13	Purchase an all-terrain vehicle that will allow access to the WWTF during flash flooding.	
14	Continue enforcement of flood plain ordinances.	
16	Continue to improve public awareness through publications in local newspaper and newsletters.	
18	Continue to improve public awareness through publications in local newspaper and newsletters.	
19	Continue to utilize Mercy St. Mary's in Dyersville, US Post Office and VFW Club in New Vienna as facilities for individuals suffering from extreme heat.	
20	Replace fire department's 20 year old pumper tank for new one that is up to code and reliable.	

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**Peosta - 2009**

Number	Mitigation Action	Status
1	Provide storm drainage between Tennis Lane and Kapp Drive.	IP
2	Provide storm drainage between Willow Ridge and Walnut Ridge.	I
3	Promote and provide NOAA indoor weather radios to vulnerable population centers in the community of Peosta.	O
4	Acquire a generator for the Peosta Community Centre for backup in the event of an emergency.	I
5	Improve public awareness of the potential risks of hazards through publication of quarterly newsletters.	I
6	Trim trees or remove trees that are potential risks to city properties and infrastructures.	I
7	Continue to contract out snow removal services for removing snow from city streets.	N/A
8	Continue with the 28E Agreement between the City of Peosta and the Centralia/Peosta Fire Department for fire protection.	O
9	Install Knox Boxes for all industrial and commercial buildings including schools.	O
10	Continue to participate in the 28E Agreement with the City of Dubuque Fire Department's Hazardous Materials Team.	O
11	Coordinate an evacuation plan for all hazardous materials incidents.	O
12	Utilize the Peosta Community Centre as a shelter for persons suffering from extreme heat.	O

**Sherrill - 2009**

Number	Mitigation Action	Status
1	Promote the use of NOAA indoor weather radios by residents in the community for planned responses to tornadoes.	
2	Improve public awareness of the potential threat of a tornado and safety awareness through publication of a quarterly newsletter.	
3	Continue to maintain and test the outdoor weather siren.	
4	Continue to contract with Dubuque County on an annual basis for snow removal and contact private contractor if a very severe snowstorm occurred.	
5	Continue to contract with the Sherrill Fire Association for Fire Protection.	
6	Utilize the Sherrill Fire Station with generator back up to accommodate citizens in the community during extreme heat or wind chill conditions.	

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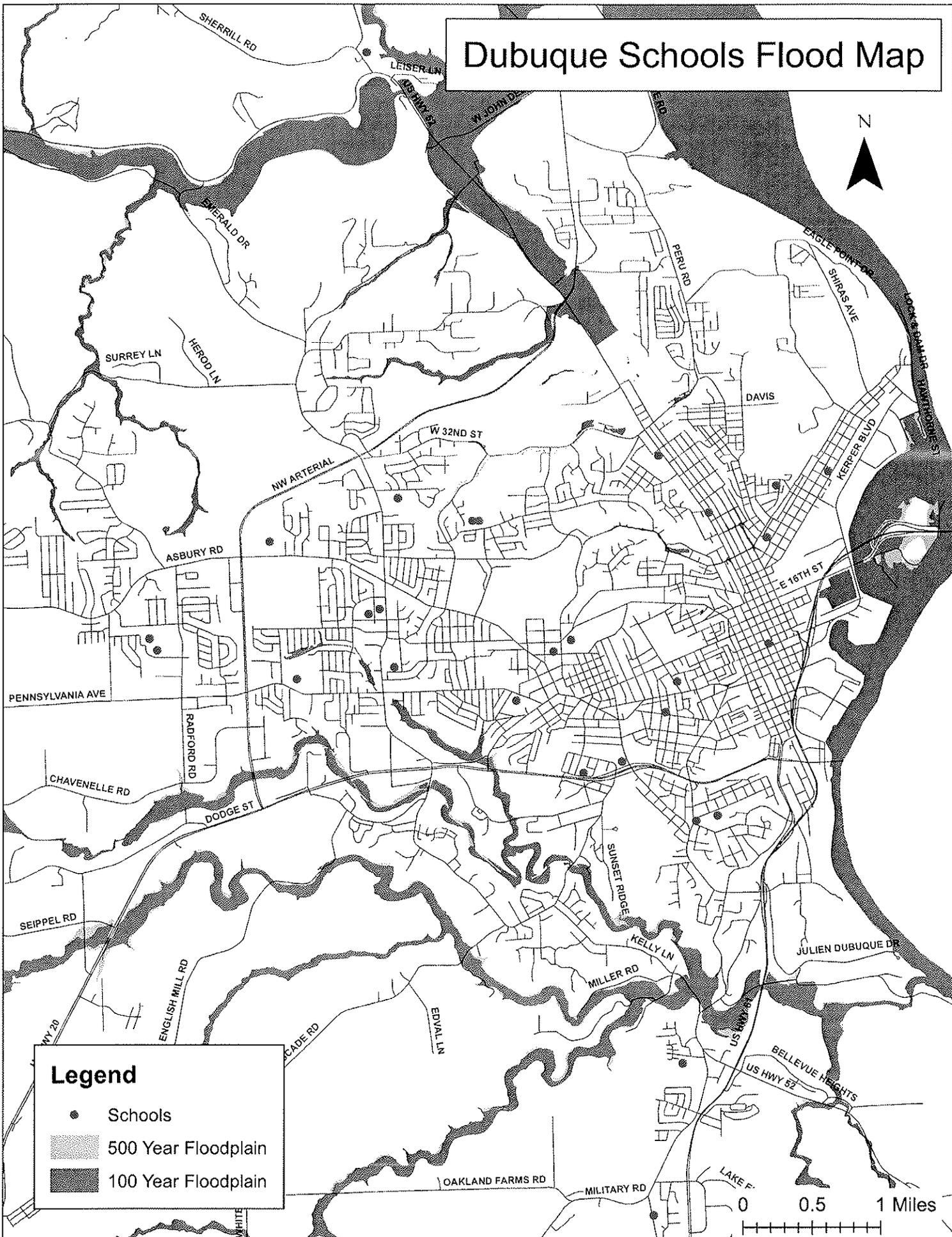
**Worthington - 2009**

<b>Number</b>	<b>Mitigation Action</b>	<b>Status</b>
1	Acquire flood damaged structures through FEMA and State Funded Programs.	O
2	Elevate flood prone structures.	O
3	Continue to maintain current outdoor weather siren to assure the siren is operable as an alert system in the event of a tornado.	O
4	Promote the use of NOAA indoor weather radios by residents in the community to assist in appropriate planned responses to tornadoes.	O
5	Improve public awareness of the potential threat of hazards through utility notice billings stating where residents need to go for shelter.	O
6	Pursue acquiring a backup generator for Memorial Hall to accommodate citizens in the event of a power failure as a result of a severe thunderstorm.	I
7	Coordinate with the Worthington Fire Dept. to upgrade their tanker truck for fire protection.	C
8	Coordinate with the Worthington Fire Dept. to continue training of their personnel for Firefighter I Certification, Operations and Awareness Level.	O
9	Coordinate with the Worthington Fire Dept. to attend schools during Fire Prevention week to conduct fire and safety presentations.	O
10	Maintain fire hydrant with current flushing and testing programs in place.	O
11	Continue to participate in the 28E Agreement with the Dubuque County/Delaware County Hazardous Materials Team.	O
12	Continue to train fire personnel at the operations level.	O
13	Accommodate citizens at the Community Center in the event of extreme heat.	O

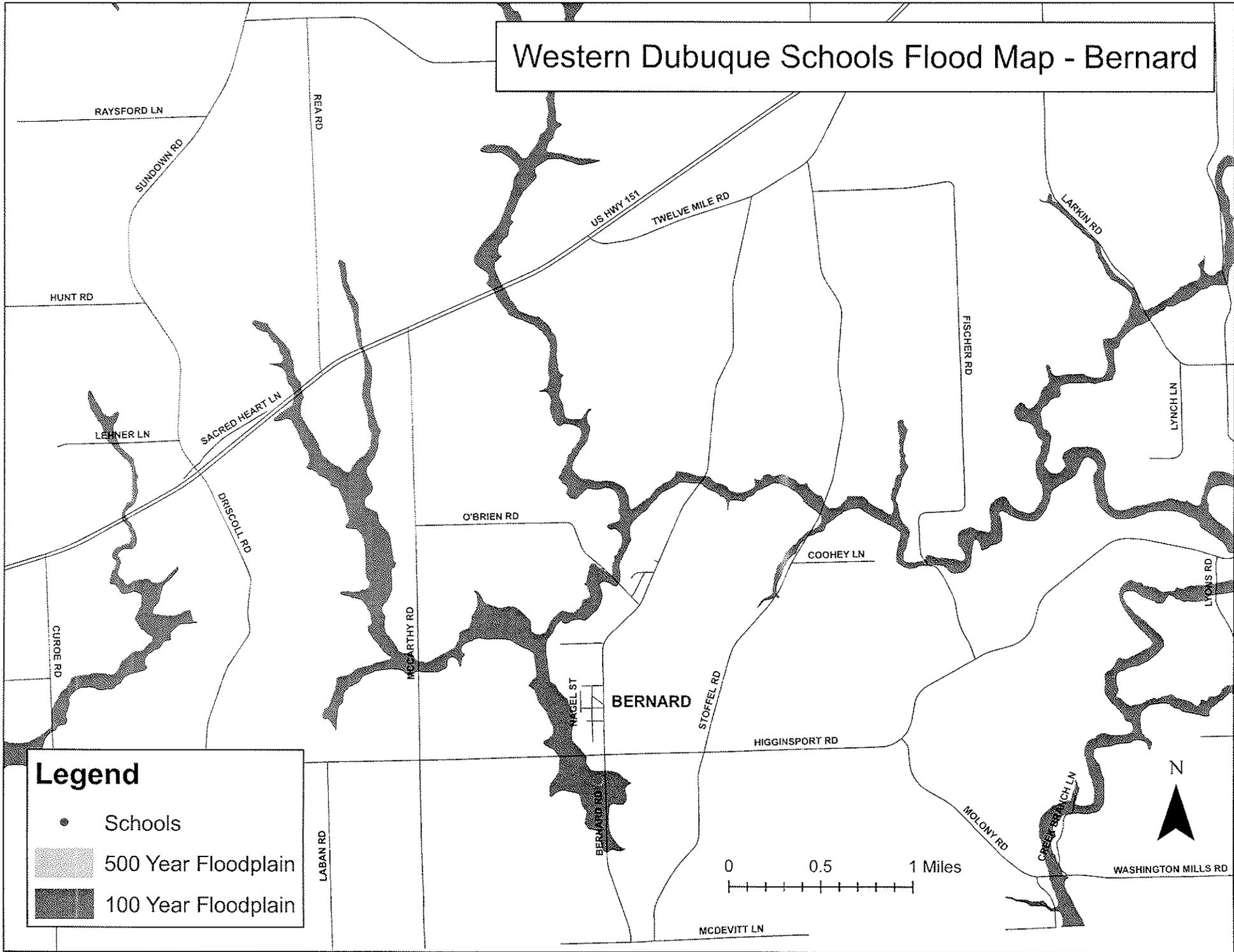
## Appendix J:

Overlay maps of school structures and HAZUS flood zone

# Dubuque Schools Flood Map



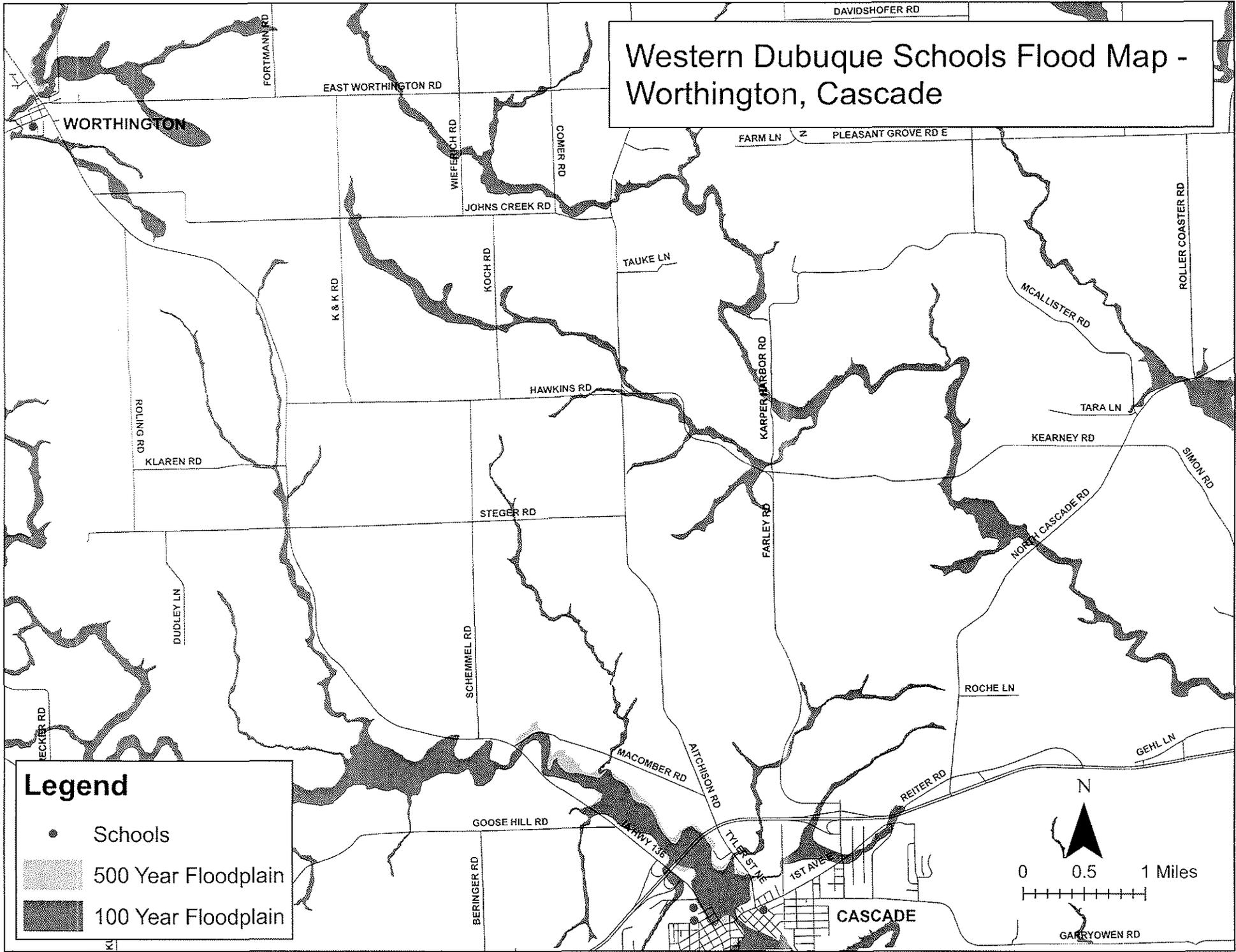
# Western Dubuque Schools Flood Map - Bernard



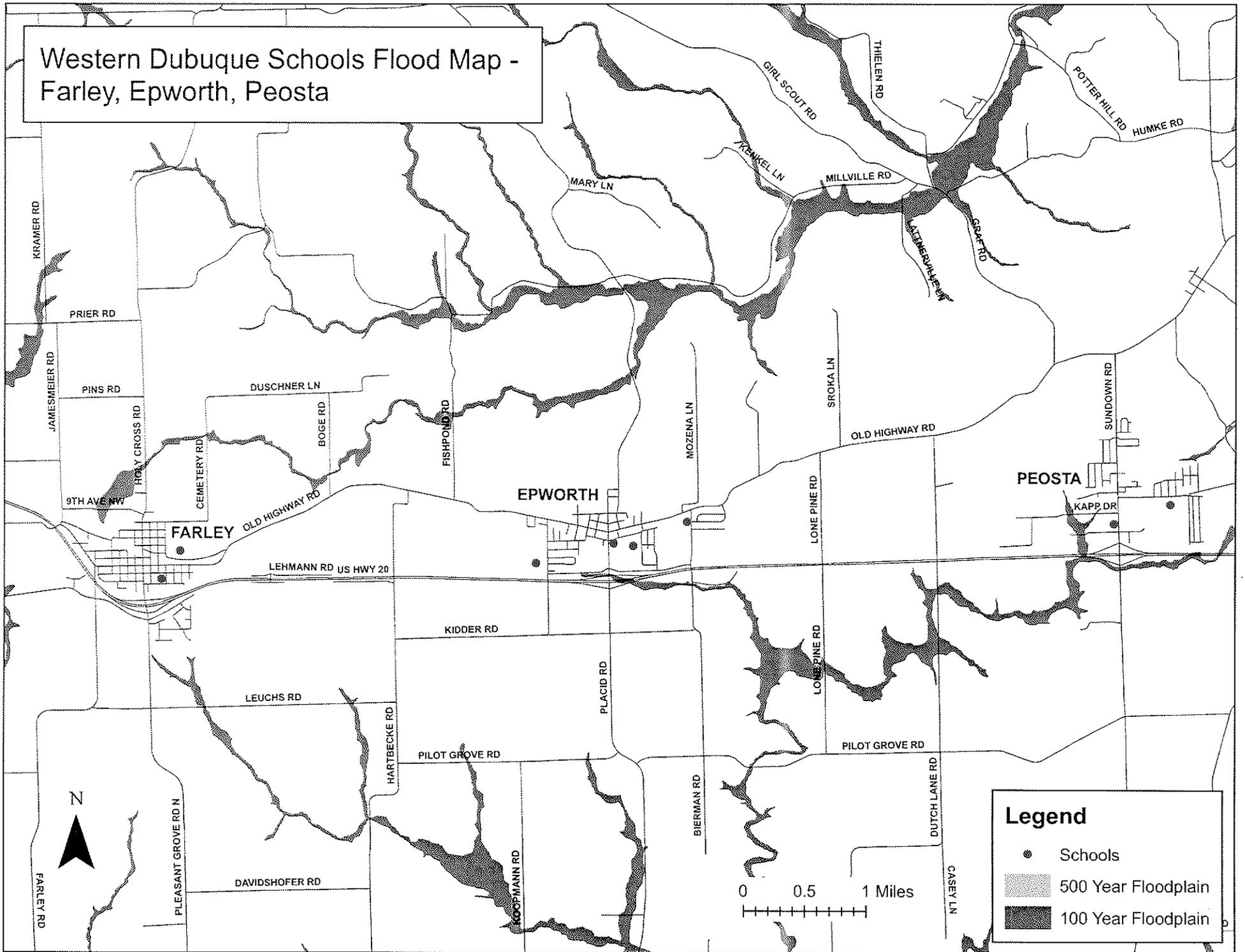
## Legend

- Schools
- 500 Year Floodplain
- 100 Year Floodplain

# Western Dubuque Schools Flood Map - Worthington, Cascade

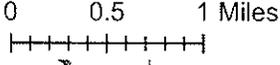


# Western Dubuque Schools Flood Map - Farley, Epworth, Peosta



**Legend**

- Schools
- 500 Year Floodplain
- 100 Year Floodplain



KRAMER RD  
PRIER RD  
JAMESMEIER RD  
PINS RD  
9TH AVENUE  
FARLEY RD  
PLEASANT GROVE RD N

HOLY CROSS RD  
CEMETERY RD  
OLD HIGHWAY RD

FARLEY

LEHMANN RD US HWY 20

DUSCHNER LN

LEUCHS RD

DAVIDSHOFER RD

HARTBECKE RD

PILOT GROVE RD

KIDDER RD

FISHPOND RD

EPWORTH

KOOPMANN RD

PLACID RD

BIERMAN RD

MOZENA LN

LONE PINE RD

LONE PINE RD

SROKA LN

PILOT GROVE RD

OLD HIGHWAY RD

MILLVILLE RD

GIRL SCOUT RD

KEMKEL LN

MARY LN

THIELEN RD

LATERBURN RD

CASEY LN

DUTCH LANE RD

PEOSTA

KAPP DR

SUNDOWN RD

POTTER HILL RD

HUMKE RD