Mercer County

Multi-Jurisdictional Hazard Mitigation Plan

2016-2021

Public Health
Prevent. Promote. Protect.

MERCER COUNTY
Illinois

IEMA

Jurisdictions in multi-jurisdictional plan shall include Mercer County municipalities, school districts, and unincorporated areas

Mercer County Multi-Jurisdictional Hazard Mitigation Plan participants' eligible for assistance and/or funding from April 1, 2015 – 2021.

Prepared by Mercer County Emergency Management Agency in partnership with Mercer County Health Department

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Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2016

Plan Author:

Mercer County Emergency Management Agency – Jennifer Hamerlinck

Mercer County Health Department – Leslie Connell

June 2016

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan was funded by Hazard Mitigation Grant Program

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Table of Contents

Contents

Introduction

Authority The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended by (PL) 106-390 (Pre-Disaster Mitigation Program, Hazard Mitigation Grant Program and the Flood Mitigation Assistance Program - 44 CFR Part 78) addresses state mitigation planning, identifies new local mitigation planning requirements, authorizes Hazard Mitigation Grant Program (HMGP) funds for planning activities, and increases the amount of HMGP funds available to states that develop a comprehensive, enhanced mitigation plan. The Disaster Mitigation Act of 2000 (DMA 2000) emphasizes the importance of strong state and local planning processes and comprehensive program management at the state level with a link in the planning process between the state and local mitigation programs. The Federal Emergency Management Agency (FEMA) has promulgated rules for implementation in 44 CFR Parts 201 and 206. 2013 Illinois Hazard Mitigation Plan I-2 The Illinois Emergency Management Agency Act created IEMA and its authority to develop, plan, analyze, conduct, provide, implement and maintain programs for disaster mitigation, preparedness, response and recovery. (20 ILCS 3305/5) Further, the Illinois Administrative Code restates the IEMA mandate to prepare the State of Illinois to deal with disasters, to preserve the lives and property of the people of the State and to protect the public peace, health and safety in the event of a disaster. (29 Ill. Adm. Code 301.110) (2013 Illinois Natural Hazard Mitigation Plan)

The State of Illinois will comply with all applicable Federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c) and will amend its plan whenever necessary to reflect changes in State or Federal laws and statutes as required in 44 CFR 13.11(d). (2013 Illinois Natural Hazard Mitigation Plan)

What is a Multi-Jurisdictional Natural Hazard Mitigation Plan?

A multi-jurisdictional hazard mitigation plan is a plan jointly prepared by more than one jurisdiction. The term “jurisdiction” in this guide means “local government.” Title 44 Part 201 Mitigation Planning in the CFR defines a “local government” as “any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.” (FEMA Multi-Jurisdictional Mitigation Planning State and Local Mitigation Planning How – To Guide Number Eight FEMA 386-8 August 2006)

Why Conduct Multi-Jurisdictional Hazard Mitigation Planning?

Local jurisdictions have the option of preparing a multi-jurisdictional hazard mitigation plan under DMA 2000. Jurisdictions can benefit in several ways when they choose to participate in a multi-jurisdictional planning process. Among such benefits, this process:

- Enables comprehensive approaches to mitigation of hazards that affect multiple jurisdictions;
- Allows economies of scale by:
  - leveraging individual capabilities; and –
  - sharing costs and resources;
- Avoids duplication of efforts; and
- Imposes an external discipline on the process.

A multi-jurisdictional planning approach may have certain complications that jurisdictions should consider before joining a collective planning effort. Some potential challenges include:

- Having less individual control over the process;
- Needing strong, centralized leadership and organizational skills;
- Dealing with conflict that may arise among participants; and,
- Requiring consistent participation by each jurisdiction throughout the planning process so that the plan stays on schedule.

Each jurisdiction should consider whether the advantages in participating in a joint planning effort outweigh the disadvantages for its particular situation. Jurisdictions must understand that when opting to participate in a multijurisdictional plan, they still must meet all planning requirements in the Rule, including formal adoption of the plan. Failure of any of the participating jurisdictions to meet the requirements will not prevent the compliant jurisdictions from adopting the plan, getting it approved by FEMA, and consequently being eligible for project grants. (FEMA Multi-Jurisdictional Mitigation Planning State and Local Mitigation Planning How – To Guide Number Eight FEMA 386-8 August 2006)

How Do You Organize a Multi-Jurisdictional Plan?

There are a variety of ways that multi-jurisdictional plans may be organized. For example, they may describe what is common to all jurisdictions in one section of the plan and then have for each participating jurisdiction an appendix containing a detailed description of each jurisdiction (e.g., its history, economy, demographics, etc.), specific hazard information, and a mitigation strategy the jurisdiction commits to implementing. Figure 1 depicts this conceptual organization of a multi-jurisdictional plan. Jurisdictions can ask their State Hazard Mitigation Officer (SHMO) for a copy of an approved plan that can serve as a guide for assembling their own mitigation plan. (FEMA Multi-Jurisdictional Mitigation Planning State and Local Mitigation Planning How – To Guide Number Eight FEMA 386-8 August 2006)

Figure 1. Conceptual Organization of a Multi-Jurisdictional Plan

Plan Maintenance and Updates

The Mercer County Multi-Jurisdictional Hazard Mitigation Plan must be updated and FEMA approved every 5 years. Mercer County originally created this plan in 2010, and began the 5 year update process in 2015 with an extension into 2016 to complete appropriate planning elements. The new period will be considered 2016-2021 with the next 5 year update in 2020. The maintenance and updates to this plan will be the responsibility of the Mercer County Emergency Management Agency. This original document is stored at the EMA office. This document serves as a county wide tool in regards to mitigation of the effects of natural hazards.

Plan Approval

This multi-jurisdictional hazard mitigation plan was submitted for public comment and review on April 1, 2016. An initial revision of the plan was completed by Mercer County Emergency Management Agency (EMA) and Mercer County Health Department.

The plan has officially been adopted and incorporated into the planning process for each participating jurisdiction. With approval and adoption, each jurisdiction is eligible to apply for Hazard Mitigation Assistance (HMA) funding to complete their mitigation strategy.

In Mercer County, participating jurisdictions will be notified of funding opportunities by Mercer County Emergency Management Agency and Mercer County Health Department. Lead agencies will provide ongoing support related to funding inquiries, applications, and maintaining this plan during the five-year term.

Active Plan Period

The Mercer County Multi-Jurisdictional Hazard Mitigation Plan for 2016-2021 was approved on June 28, 2016. The plan is active for five years following the approval date. A full update must be completed within five years to maintain Hazard Mitigation Assistance funding eligibility.

Plan Background

Purpose of Hazard Mitigation Planning

The primary purpose of hazard mitigation planning is to identify how a community can minimize the negative impacts of natural, technological, and human caused hazards. This type of planning attempts to minimize death, injury, property damage, and community disruption. For Mercer County, recurring natural disasters such as windstorms, flooding, and ice storms have made local hazard mitigation planning an essential activity.

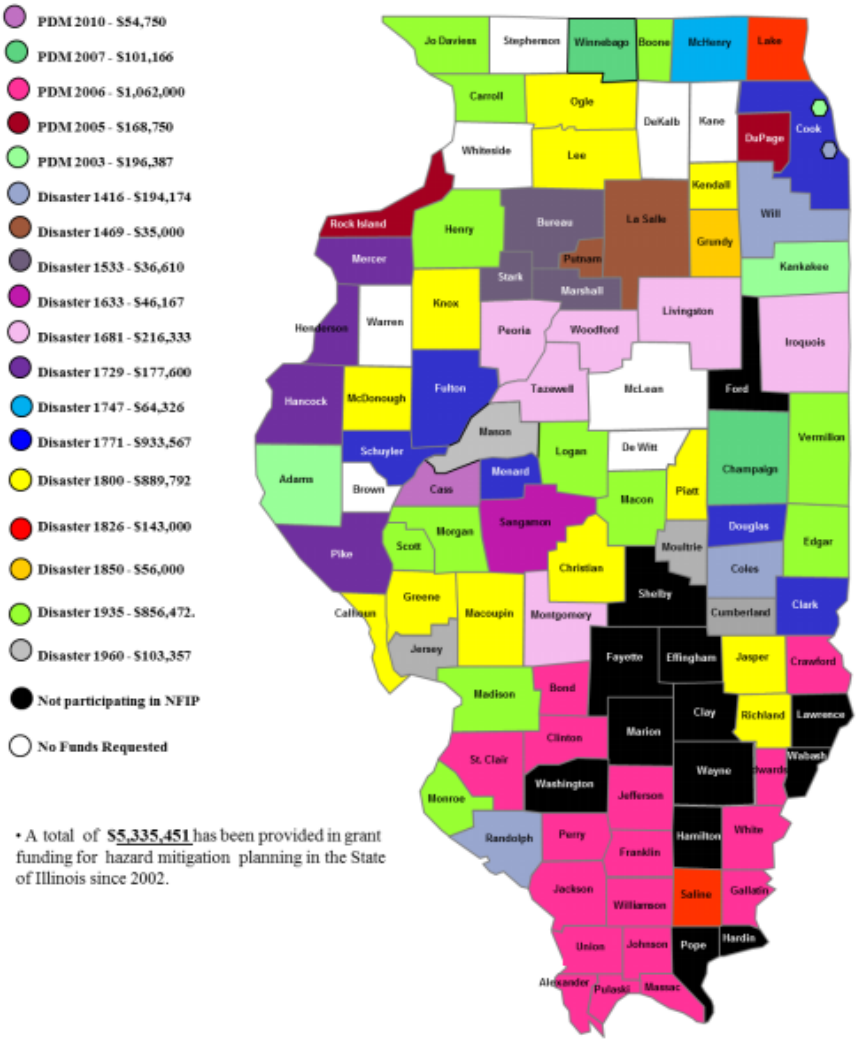
The secondary purpose of hazard mitigation planning is to maintain a local government's eligibility to apply for Hazard Mitigation Assistance funding. Upon approval of this plan, the county, cities, and school districts included in this plan are eligible to apply for Hazard Mitigation Assistance funding to complete their mitigation strategy. It is important to note, when a federal disaster declaration is issued in Illinois, the federal government awards the state Hazard Mitigation Grant Program funding while other programs are annual and nationally competitive.

At the federal level, the importance of hazard mitigation planning was recognized in the Disaster Mitigation Act of 2000 (DMA 2000). The DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) by repealing the previous mitigation planning provisions and replacing them with requirements that emphasize the need to coordinate mitigation planning and implementation. The legislation established the requirement for local hazard mitigation planning to access Hazard Mitigation Assistance, which funds hazard mitigation projects for state and local governments.

The development of this plan was funded by a Hazard Mitigation Grant Program planning grant awarded to Mercer County.

IEMA

State of Illinois
DMA2K Disaster Grant Funding
Updated: 7/1/2013



• A total of **$5,335,451** has been provided in grant funding for hazard mitigation planning in the State of Illinois since 2002.

V-13

(2013 Illinois Multi-Jurisdictional Natural Hazard Mitigation Plan)

Plan Participants

Definition of a Jurisdiction

Legislation defines a local government or jurisdiction as any county, municipality, city, town, township, public authority, school district, intrastate district, council of governments, regional or interstate government entity, or agency of a local government; any Indian tribe or tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity. For a hazard mitigation plan in Illinois, jurisdictions or local governments typically include the unincorporated areas, cities, and school districts within a county.

The planning area for a multi-jurisdictional hazard mitigation plan includes multiple jurisdictions with common climate and geography. Jurisdictions are either contiguous or located in close proximity. In Illinois, the planning area for a multi-jurisdictional plan typically includes an entire county. The planning area includes the unincorporated areas, cities, and school districts.

Table 1: Planning Area Jurisdictions

County/Townships	Cities/Villages	School Districts
Mercer County	City of Aledo	Mercer County School District #404
Bay Island Drainage District	Village of Alexis	Sherrard Community Unit School District 200
Abington Township	Village of Joy	
Duncan Township	City of Keithsburg	
Eliza Township	Village of Matherville	
Greene Township	City of New Boston	
Mercer Township	Village of New Windsor	
Millersburg Township	Village of North Henderson	
Ohio Grove Township	Village of Seaton	
Perryton Township	Village of Sherrard	
Preemption Township	Village of Viola	
Richland Grove Township		
Rivoli Township		
Suez Township		

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan Planning Team

Name	Title	Address of Facility	Phone of Facility
Jennifer Hamerlinck	Mercer County Emergency Management Director	305 NW 7th Street Aledo, IL 61231	309-582-3759
Carla Ewing	Mercer County Health Department Administrator	305 NW 7th Street Aledo, IL 61231	309-582-3759
Leslie Connell	Mercer County LEPC Secretary, Mercer County MRC Coordinator	305 NW 7th Street Aledo, IL 61231	309-582-3759
Angie Litterst	Mercer County Emergency Preparedness Coordinator	305 NW 7th Street Aledo, IL 61231	309-582-3759
Dave Staley	Mercer County Sheriff	906 SW 3rd Street Aledo, IL 61231	309-582-5194
Dennis Litwiler	Aledo Fire Chief	211 SE 3rd Street Aledo, IL 61231	309-582-2208
Kirk Doonan	Viola Mayor	1305 17th Ave Viola, IL 61486	309-596-2513
Allen Henshaw	Keithsburg Mayor	302 S 14th Street Keithsburg, IL 61442	309-374-2311
Chris DeFrieze	New Boston Mayor	405 Main Street New Boston, IL 61272	309-587-8181
Ron Brown	North Henderson Mayor	PO Box 101 North Henderson, IL 61466	Cell phone on file
Brian Mills	Bay Island Drainage District Commissioner	1199 Swan Lake Rd. New Boston, IL 61272	Cell phone on file
Matt Lower	Mercer County Highway Engineer	1630 Highway 17 Aledo, IL 61231	309-582-2715
Chris Sullivan	Aledo Police Chief	200 NE 2nd Street Aledo, IL 61231	309-582-2331
Justin Blaser	Aledo Public Works Director	120 N College Ave Aledo, IL 61231	309-582-7241
Jim Olson	Alexis Public Works	PO Box 356 Alexis, IL 61412	309-482-3424
Mark Heater	Joy Public Works	200 W Main Street Joy, IL 61260	309-584-4127
Paula Rath	Sherrard Fire	101 E 1st Street Sherrard, IL 61281	309-593-2412

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan Participants

Name	Title	Address of Facility	Phone of Facility
Todd Heath	Mayor of Joy	200 W Main Street Joy, IL 61260	309-584-4127
Delbert Henry	Sherrard Mayor	517 3rd Street Sherrard, IL 61281	309-593-2415
Mike Peterson	New Windsor Mayor	125 N 3rd Ave New Windsor, IL 61465	309-667-2344
Stephanie McMeekan	Matherville Mayor	500 2nd Street Matherville, IL 61263	309-754-8814
Bob Mahrt	Aledo City Administrator	120 N College Ave Aledo, IL 61231	309-582-7241
Dell Hicks	New Windsor Police Chief	125 N 3rd Ave New Windsor, IL 61465	309-667-2601
Bob Millikan	Viola Fire Chief	1713 17th Street Viola, IL 61486	309-596-2311
Paul Hampton	Joy Fire	200 W Main Street Joy, IL 61260	309-584-4127
Frank Wheeler	Seaton Fire Chief	317 Maple Street Seaton, IL 61476	Cell phone on file
David Wheeler	Seaton Fire	317 Maple Street Seaton, IL 61476	Cell phone on file
Kent Gerber	Aledo Fire	211 SE 3rd Street Aledo, IL 61231	309-582-2208
Jeff Simpson	Seaton Fire/Ohio Grove Road Commissioner	317 Maple Street Seaton, IL 61476	Cell phone on file
Jim Morrison	Viola Fire	1713 13th Street Viola, IL 61486	309-596-2311
Michael Tillie	Matherville Fire	500 2nd Street Matherville, IL 61263	309-754-8814
Jason Nass	Matherville Fire	500 2nd Street Matherville, IL 61263	309-754-8814
Lori Bruning	Matherville Fire	500 2nd Street Matherville, IL 61263	309-754-8814
Ray Wolf	National Weather Service	9050 Harrison Street Davenport, Ia 52806	563-386-3976
Travis Matlick	Aledo Water Department	120 N College Ave Aledo, IL 61231	309-582-7241
Ralph Smith	New Windsor	125 N 3rd Ave New Windsor, IL 61465	309-667-2344
Christine Junis	Joy	200 W Main Street Joy, IL 61260	309-584-4127

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan Participants

Name	Title	Address of Facility	Phone of Facility
Jim Tucker	North Henderson Public Works/Mercer County MRC	South Street North Henderson, IL 61466	Cell phone on file
George Lyle	Keithsburg Public Works	302 S 4th Street Keithsburg, IL 61442	309-374-2311
Mike Miller	Mercer Township Road Commissioner	Home address on file	Cell phone on file
Donald Fowler	Rivoli Township Road Commissioner	Home address on file	Cell phone on file
Lynn Peace	Suez Township Road Commissioner	Home address on file	Cell phone on file
Tom Slavish	Preemption Township Road Commissioner	Home address on file	Cell phone on file
Harvey DeKeyrel	Abington Township Road Commissioner	Home address on file	Cell phone on file
Dave Lloyd	Perryton Township Road Commissioner	Home address on file	Cell phone on file
Kenneth King	Greene Township Road Commissioner	Home address on file	Cell phone on file
John Retherford	Millersburg Township Road Commissioner	Home address on file	Cell phone on file
Bob Howe	Eliza Township Road Commissioner	Home address on file	Cell phone on file
Jeff Attig	Duncan Township Road Commissioner	Home address on file	Cell phone on file
Donna Wade	Genesis Medical Center, ER Manager	409 NW 9th Ave Aledo, IL 61231	309-582-5301
Kevin Pauley	CBF Pastor	1109 SE 3rd Street Aledo, IL 61231	309-582-7406
Jan Occhi	Keithsburg City Council/MRC Volunteer	PO Box 87 Keithsburg, IL 61442	309-374-2311
Audrey Bryant	Village of Joy	200 W Main Street Joy, IL 61260	309-584-4127
Ernie Dillie	Village of Joy	200 W Main Street Joy, IL 61260	309-584-4127
Richard Bland	New Windsor	Home address on file	Cell phone on file
Keith Clark	Mercer County MRC	Home address on file	Cell phone on file
Karen Tucker	Mercer County MRC	Home address on file	Cell phone on file
Kyle Lloyd	Mercer County Health Department	305 NW 7th Street Aledo, IL 61231	309-582-3759

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan Participants

Name	Title	Address of Facility	Phone of Facility
Tom Lloyd	Mercer County MRC	Home address on file	Cell phone on file
Randy Anderson	Seaton	N/A	N/A
Elaine Anderson	Village of Joy	N/A	N/A
Joy Gallaugher	Village of Viola	N/A	N/A
Michael Nelson	Community Member	N/A	N/A
Cindy Howard	Community Member	N/A	N/A
Aubree Norton	Community Member	N/A	N/A
Joyce King	Community Member	N/A	N/A
Sabrena Williams	Community Member	N/A	N/A
Elaine Wheeler	Community Member	N/A	N/A
Elizabeth Wheeler	Community Member	N/A	N/A
Karlee Gerber	Community Member	N/A	N/A
Matt Simpson	Community Member	N/A	N/A
Cindy Simpson	Community Member	N/A	N/A
Sharon Simpson	Community Member	N/A	N/A
Elaine Henshaw	Community Member	N/A	N/A
Renee Forber	Community Member	N/A	N/A
Sheri Williams	Community Member	N/A	N/A
Linda Morrow	Community Member	N/A	N/A
Drew Norton	Community Member	N/A	N/A
Grady Norton	Community Member	N/A	N/A
Quinton Ball	Community Member	N/A	N/A
Wyatt Miller	Community Member	N/A	N/A
Melisa Matlick	Community Member	N/A	N/A

In order for a Jurisdiction to be eligible to receive federal assistance funding in the event of a natural disaster participation in planning is a must. Participation requirements were developed for 2010 Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan and slightly adjusted for 2016 Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan.

Participation Requirements

1. Attend a minimum of 1 meeting
2. Submit at least 2 of the 3 completed community documents (Statement of Intent, Review of 2010 Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan, Existing Documents chart)
3. Complete Hazard Mitigation Project Grid
4. Hosted opportunities for public involvement
5. Reviewed and adopt 2016 Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan

According to the above participation requirements all jurisdictions will be eligible to receive funding.

Jurisdictions include:

Mercer County
Aledo
Alexis
Bay Island
Joy
Keithsburg
Matherville
New Boston
New Windsor
North Henderson
Seaton
Sherrard
Viola

Record of Participation

	Mercer County	Aledo	Alexis	Bay Island	Joy	Keithsburg	Matherville
Attended Kick Off Meeting (5-27-15)	√	√	√	√	√	√	
Attended Hazard and Vulnerability Analysis Meeting (8-26-16)	√	√	√		√	√	√
Attended Weather Focus Group (11-3-15)	√	√			√	√	√
Attended Hazard Mitigation Strategy Meeting (2-25-16)	√	√	√	√	√	√	√
Signed Statement of Intent	√	√	√	√	√	√	√
Completed Natural Hazard Surveys		√	√	√	√	√	√
Reviewed 2010 Hazard Mitigation Plan	√	√	√	√	√	√	√
Completed Existing Documents Form	√	√	√	√	√	√	√
Completed Hazard Mitigation Project Grid	√	√	√	√	√	√	√
Hosted Opportunity for Public Involvement	√	√	√	√	√	√	√
Attended Final Review Meeting	√	√	√	√	√		
Reviewed and adopted plan							

Record of Participation

	New Boston	New Windsor	North Henderson	Seaton	Sherrard	Viola
Attended Kick Off Meeting (5-27-15)	√	√	√		√	√
Attended Hazard and Vulnerability Analysis Meeting (8-26-16)	√	√	√	√		√
Attended Weather Focus Group (11-3-15)		√		√	√	
Attended Hazard Mitigation Strategy Meeting (2-25-16)		√	√	√	√	√
Signed Statement of Intent	√	√	√	√	√	√
Completed Natural Hazard Surveys		√	√		√	
Reviewed 2010 Hazard Mitigation Plan		√	√		√	
Completed Existing Documents Form	√	√	√	√	√	√
Completed Hazard Mitigation Project Grid	√	√	√	√	√	√
Hosted Opportunity for Public Involvement	√	√	√	√	√	√
Attended Final Review Meeting		√		√	√	√
Reviewed and adopted plan						

Plan Development

A hazard mitigation plan is the product of a multi-year planning process that involves collaboration between officials, staff, and residents in participating jurisdictions.

Grant Funding

For this plan, the planning process began when a plan was first written in 2010. The original plan was written by University of Illinois Extension with assistance from Illinois State Water Survey. The plan was funded by Hazard Mitigation Grant Program (HMGP) Planning Grant and by Mercer County. Hazard Mitigation Grant Program states that the plan must be rewritten every 5 years. The plan is now being updated and revised by Mercer County Emergency Management Agency and Mercer County Health Department. Due to funding timelines the plan will be completed and adopted in 2016.

Review and Research

Throughout the plan development process, existing documents and data were reviewed. Each municipality along with several other officials and jurisdictions were asked to review the 2010 Mercer County Hazard Mitigation Plan. A form was given to them to return with changes and suggestions for the plan in progress. Each jurisdiction was also asked to sign a Statement of Intent form agreeing to participate in the planning process. Municipalities, the county, specific staff and elected officials also completed and returned a Natural Hazard Survey to assess hazard risk and vulnerability in Mercer County. *(See documents sent as attachments numbers 2, 3, 4, 5, and 6)*

Planning Meetings

A kickoff meeting was held on May 27, 2015 to introduce the planning cycle, share ideas on improving hazard mitigation, and go over progress made on the plan to date. Eighteen individuals representing a variety of jurisdictions were in attendance. In addition to Leslie Connell who came into this project late, these 18 people make up Mercer County Multi-Jurisdictional Natural Hazard Mitigation Planning Team. Mercer County Emergency Management Agency, Mercer County Health Department, local mayors/village presidents, fire departments, law enforcement, and public works are all included in representation of Mercer County on this planning team. Planning team contact information can be found on page 12 of this document.

Focus group with Mercer County Hazard Mitigation Committee was held on August 26, 2015 where 22 people were in attendance. A Hazard and Vulnerability Assessment (HVA) tool was completed. Natural hazards, weather related incidents, and community preparedness were discussed and hazard mitigation plan progress was reviewed.

Mercer County Hazard Mitigation Community Weather Focus Group featuring WQAD News Channel 8 Chief Meteorologist James Zahara was held on November 3, 2015. Forty-seven people attended this focus group to learn about weather related events with a presentation called *Severe Weather Awareness*. Community and expert input was also given concerning natural hazards Mercer County faces as well as ideas regarding mitigating these affects.

Mitigation Strategies Focus Group was held on February 25, 2016. Mercer County 5-year plan was discussed, a PowerPoint presentation was given concerning mitigation strategies and action plans. Hazard mitigation goals and priorities were reviewed and voted on and then a mitigation project grid was completed by attendees. Forty-one were in attendance.

Final Review Meeting was held Tuesday, June 28, 2016. At this meeting the plan was reviewed and approved by those in attendance. Each jurisdiction was given their specific planning area to review and the remainder of the plan was broken up into sections for groups to review and approve. There were also full documents printed and available for review. Corrections were made to the Mercer County Multi-Jurisdictional Natural Hazard Mitigation Draft Plan where necessary. All in attendance approved the draft plan with signature. The draft plan along with signature form will be sent to IEMA for approval. Eighteen people were in attendance.

Expert Interviews

Expert interviews were attempted with each municipality and individuals in charge. Those whom participated in an expert interview are listed below.

Mike Sponsler – Aledo Police Chief
Bob Mahrt – Aledo City Administrator
Jim Olson – Alexis Supervisor
Brian Mills – Bay Island Drainage District Commissioner
Todd Heath – Joy Village President
Allen Henshaw – Keithsburg Mayor
Stephanie McMeekan – Matherville Village President
Chris DeFrieze – New Boston Mayor
Mike Peterson – New Windsor Village President
Ron Brown – North Henderson Village President
Delbert Henry – Sherrard Mayor

Participants were asked:

1. "If money was not an option what would be some hazard mitigation projects, big or small, which would benefit your municipality?"

Aledo	Currently developing city's own CFS plan for all facilities, will share information as it becomes available
Alexis	Generators for pump house and community center, Communication Center county wide, Shelter supplies, water backups
Bay Island	Bridge repairs, Emergency Sirens
Joy	Easier access to clean up equipment and workers
Keithsburg	Shelter for campers (currently looking for grants)
Matherville	Generators

New Boston	Shelter for residents who lose housing, Transportation to evacuate or move residents, Improve bridges, Storm Siren by river front
New Windsor	Training/Man Power to respond, Resources on standby, Generator for water facilities, Early detection for disasters, Emergency fund specifically for hazard mitigation
North Henderson	"Not much you can do to prevent things from happening, just have to help each other once it happens."
Seaton	
Sherrard	Storm shelter (perhaps at one of the schools), Storm Siren so there is one at each end of town
Viola	

Mike Sponsler, Aledo Police Chief, stated that GPS for squad cars is now in place and that dispatch is able to locate if needed. Aledo Police Department is working on getting a generator at the department. Bob Mahrt, Aledo City Administrator was asked for progress updates on several projects. All construction as well as the moves have taken place with Aledo Fire and Aledo PD. Water facilities now have portable generators, and most other facilities are equipped with permanent generators. Aledo was in the process of installing a new automatic storm siren for the Northeast side of town. This has since been completed and now all four quadrants of Aledo are equipped with sirens.

Alexis was granted funding through USDA to refurbish school into a community center. An angled roof, steel siding, new windows, and central air conditioning are included in the list of updates. A fresh coat of paint will be applied as well. Jim Olson stated that they would also like to get a permanent generator to replace the portable generator they have now.

When speaking with Brian Mills, Commissioner of Bay Island Drainage District, about the purchase of a 42 inch electric pump to replace the smaller diesel pump he stated that the pump had been purchased and they are very pleased with the replacement.

Todd Heath, Joy Village President, informed us that new sirens are being installed. Generators will be installed at each water facility by the end of May 2015. There is also a generator being installed at the lift station.

An expert interview was conducted with Mayor of Keithsburg, Allen Henshaw, in April of 2015. At that time the $5 million project acquisition grant status was that the FEMA buyout has been completed and properties were being torn down. Henshaw was hopeful that work would begin in the fall/winter of 2015 on a $6 million grant that was being written to update levee and water systems. Keithsburg had also completed work for a roadway grant they received.

Stephanie McMeekan was asked about the progress of getting Storm Sirens fixed. She said that all sirens are back in working order after being down for 11 months.

As of April of 2015, Chris DeFrieze, Mayor of New Boston, stated that a generator was recently donated to Community Center for use in case a shelter is needed. New Boston Fire houses 2-3 generators that are distributed to elderly and needy residents if needed. There is also a water generator so the community never loses use of water facilities. A storm siren was being installed at the fire station as well.

Mike Peterson, Village of New Windsor President, stated that there are now generators in town hall, police department, and fire department. New Windsor is also working on getting a storm siren.

Village of Sherrard has assigned all hazard mitigation activities to Trustee, Paula Rath. While speaking with Paula she shared that Village Board has been trained for emergency response. All water facilities now have emergency generators. Sherrard Fire is equipped with an emergency generator and can also be used as a warming center and meeting place. There is an automatic storm siren on top of the water tower as well.

Public Comment

Public Comment period ran from April 1, 2016 through June 30, 2016. Public comment was announced by the following: *(see attachments for flyers/letters – attachments 9, 10, and 11)*

Public Notice Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan			
Type of Notice	Notice Distributed	Date Given	Additional Comments
Flyer/Letter	Aledo City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Alexis Village Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Bay Island Pump House	4/1/16	To be posted for Citizens
Flyer/Letter	Joy City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Keithsburg City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Matherville City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	New Boston City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	New Windsor Village Hall	4/1/16	To be posted for Citizens
Flyer/Letter	North Henderson Village Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Seaton Village Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Sherrard Village Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Viola City Hall	4/1/16	To be posted for Citizens
Flyer/Letter	Mercer County Board	4/1/16	To be posted for Citizens
Flyer/Letter	Mercer County Sherriff Department	4/1/16	To be posted for Citizens
Flyer/Letter	College Ave Presbyterian, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	United Methodist, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	First Baptist, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Trinity Presbyterian, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Riverbend Assembly, New Boston	4/4/16	To be posted for Congregation
Flyer/Letter	St. Anthony's, Matherville	4/4/16	To be posted for Congregation
Flyer/Letter	St. Mary's, Keithsburg	4/4/16	To be posted for Congregation

Public Notice Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan			
Flyer/Letter	First Christian, Keithsburg	4/4/16	To be posted for Congregation
Flyer/Letter	United Methodist, Joy	4/4/16	To be posted for Congregation
Flyer/Letter	Grace Chapel, Joy	4/4/16	To be posted for Congregation
Flyer/Letter	First Baptist, Joy	4/4/16	To be posted for Congregation
Flyer/Letter	Eliza Community Church, Muscatine IA	4/4/16	To be posted for Congregation
Flyer/Letter	Assembly of God, New Boston	4/4/16	To be posted for Congregation
Flyer/Letter	Buffalo Prairie Presbyterian, Reynolds	4/4/16	To be posted for Congregation
Flyer/Letter	Hamlet Perryton Presbyterian, Reynolds	4/4/16	To be posted for Congregation
Flyer/Letter	Center Presbyterian, Seaton	4/4/16	To be posted for Congregation
Flyer/Letter	First Lutheran, Sherrard	4/4/16	To be posted for Congregation
Flyer/Letter	Presbyterian Church, Sherrard	4/4/16	To be posted for Congregation
Flyer/Letter	First Apostolic Church, Viola	4/4/16	To be posted for Congregation
Flyer/Letter	United Methodist, Viola	4/4/16	To be posted for Congregation
Flyer/Letter	United Presbyterian, Viola	4/4/16	To be posted for Congregation
Flyer/Letter	United Presbyterian, Alexis	4/4/16	To be posted for Congregation
Flyer/Letter	Village Baptist, Alexis	4/4/16	To be posted for Congregation
Flyer/Letter	Cable, Community Church, Sherrard	4/4/16	To be posted for Congregation
Flyer/Letter	Norwood United Presbyterian, Alexis	4/4/16	To be posted for Congregation
Flyer/Letter	Community Bible Fellowship, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Grace Evangelical Free, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Messiah Lutheran, Aledo	4/4/16	To be posted for Congregation

Public Notice Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan			
Flyer/Letter	St. Catherine's, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Catholic Parishes of Mercer County	4/4/16	To be posted for Congregation
Flyer/Letter	Kingdom Hall of Jehovah's Witnesses, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Nazarene, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	New Life Assembly of God, Aledo	4/4/16	To be posted for Congregation
Flyer/Letter	Open Bible, Aledo	4/4/16	To be posted for Congregation
Posted Flyer	Mercer Market	4/1/16	Posted on Community Event Board
Posted Flyer	Black Hawk Bank & Trust	4/1/16	Posted on Community Event Board
Posted Flyer	Farmers State Bank	4/1/16	Posted on Community Event Board
Posted Flyer	Midwest Bank	4/1/16	Posted on Community Event Board
Posted Flyer	Town & County Restaurant	4/1/16	Posted on Community Event Board
Posted Flyer	Bank Orion	4/1/16	Posted on Community Event Board
Posted Flyer	1st Community Bank	4/1/16	Posted on Community Event Board
Newspaper	Aledo Times Record	4/1/16-6/1/16	Printed Public Notice (once a month for 3 months)
Community Calendar	WRMJ Radio	4/1/16-6/1/16	Listed daily on website and on air
Focus Interview	WRMJ Radio	5/25/16	Radio broadcast
Social Media	MCHD Facebook	3-31-2016	Posted at 3:52pm

As can be seen in the above chart, flyers were mailed to and posted at each church in the county and each city/village hall in the county. Flyers were posted at multiple banks and other businesses. Local newspaper, local radio station, and social media were used to encourage public participation as well.

Plan Review and Revision

During the public comment period, the draft version of this plan was concurrently reviewed by Mercer County Hazard Mitigation Committee. Plan was reviewed and approved the final time at the June meeting.

Plan Approval & Adoption Date

Plan Approval: June 28, 2016

Plan Adoption by Mercer County: _____

Plan Approval and Adoption

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan was submitted for public comment, review, and approval on June 28, 2016. An initial review of the plan was completed by Mercer County Emergency Management Agency and Mercer County Health Department. Following the approval of the plan by the planning team Mercer County Multi-Jurisdictional Hazard Natural Mitigation Plan was sent to IEMA and FEMA for approval. Necessary edits were made and adopted by Mercer County and all municipalities.

Plan Review Schedule

Public Comment Period: April 1, 2016 – June 30, 2016

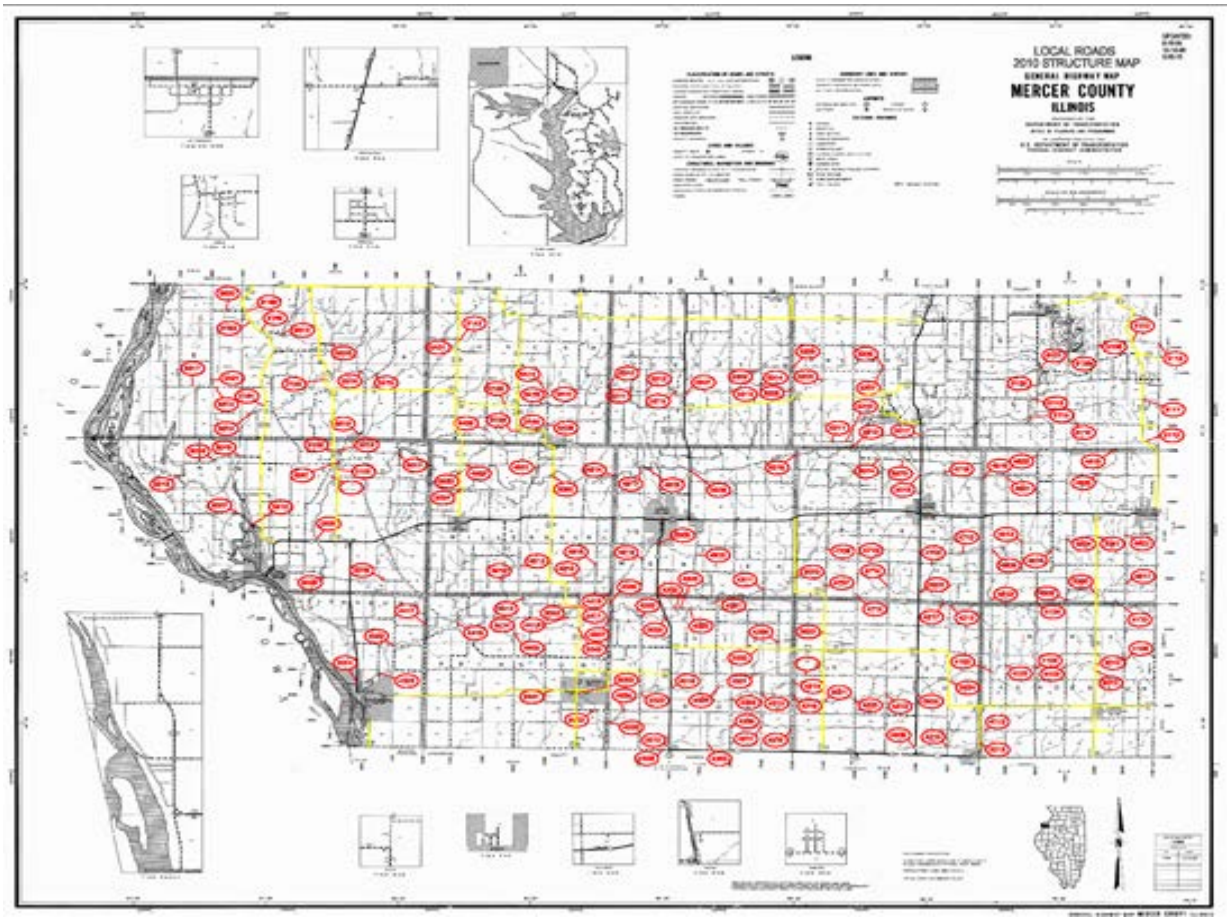
State Review Submission: August 1, 2016

FEMA Final Review Submission: ??????????

Protecting Community Infrastructure

Protecting Community Infrastructure

Mercer County Highway Department maintains 150 miles of county highway and 31 bridge structures on the county road system. These interconnect with over 743 miles of township roads and 131 township bridges of the 15 townships. Major highways include State Highways' 94 and 17, and US Highway 67. Critical and essential facilities and infrastructure have been identified and mapped for inclusion in the mitigation plan and other comprehensive emergency plans for the county/municipalities.



ADDITIONAL SITUATIONS

The majority of the utility poles throughout Mercer County are aging.

The local radio station (WRMJ, in Aledo) has no back-up power system.

Some elderly or special needs housing facilities within Mercer County have no back-up power system.

Some of the critical structures and utilities throughout Mercer County have no back-up power system.

Not all shelters within Mercer County have back-up power systems.

ASSUMPTIONS

By documenting and identifying the infrastructure throughout the county, these important components may more easily be returned to working condition following a disaster.

Because most roadways throughout the county are rural, county highways, or gravel roads; damage to the roadways would impede recovery efforts of emergency personnel as well as those transporting critical supplies needed during the recovery phase of a disaster such as fuel, construction equipment, etc.

Damage to critical infrastructure or essential facilities will likely surpass the local county or jurisdiction's capability to recover. Mutual aid will likely be needed.

Because loss of power is likely regardless of the type of disaster:

- WRMJ will be unavailable for disseminating information
- Some elderly/special needs facilities will require assistance
- Some municipalities, as well as most rural residents, will be without water and/or sewer
- Some shelter facilities will be unavailable for use

The following data was ascertained through expert interviews with each municipality within the county in regards to their public infrastructure:

Which three would be the most likely to be lost/disabled by a disaster?
(Please rank from most likely to lose → least likely.)

Aledo	Electric – Water/Sewer - Shelter
Alexis	Electricity – Water - Sewer
Joy	Electricity – Water – Food Service
Keithsburg	Roads – Barge traffic - Electric
Matherville	Water – Telecommunication - Sewer
New Boston	Power – Water – Heat (gas)
New Windsor	Telecommunications – Water Supply – Security or Housing
North Henderson	Water - Gas
Seaton	Electric – Water - Roads
Sherrard	Electric – Water - Sewer
Viola	Electric – Telecommunications – Natural Gas

Resource Agencies

Aledo	Chris Hagloch	309-582-7241
Alexis	Dale Oberhaus	309-368-3240
Joy	Todd Heath	309-584-4127
Keithsburg	Allen Henshaw, home: 309-374-2571, cell: 309-299-5232	309-374-2311
Matherville	Stephanie McMeekan, cell: 815-262-2244	309-754-8814
New Boston	Chris DeFrieze	309-587-8181
New Windsor	Mike Peterson, home: 309-667-2433	309-667-2344
North Henderson	Ron Brown, 309-644-0998	309-337-1207
Seaton	Bob Springer, cell: 309-582-4099	309-586-5341
Sherrard	Delbert Henry, home: 309-593-2467, cell: 309-781-8046	309-593-2415
Viola	Kirk Doonan, home: 309-596-2511	309-596-2513
	PUBLIC WORKS	
Aledo	Justin Blaser 309-582-7241	
Alexis	Jim Olson 309-371-8404	
Joy	Mark Heater at village hall: 309-584-4127, cell: 319-759-3989	
Keithsburg	George Lyle 309-221-0852	
Matherville	Rod Hartman 309-314-5538	
New Boston	Mike DeFrieze 309-587-8181	
New Windsor	Mike Johnson 309-667-2344	
North Henderson	Jim Tucker 309-337-1207	
Seaton	Mark Blythe 309-221-9056	
Sherrard	Will Conger 309-738-9858	
Viola	Dave Maynard 309-341-6130	
	TOWNSHIP ROAD COMMISSIONERS	
Abington	Harvey DeKeyrel at home: 309-586-4281, cell: 309-221-5538	
Duncan	Jeff Attig at home: 309-372-8269, cell: 309-371-7721	
Eliza	Bob Howe 563-260-9655	
Greene	Kenneth King at home: 309-582-5237, cell: 309-337-7903	
Keithsburg	David Hudson 309-221-4898	
Mercer	Michael Miller 309-221-1932	
Millersburg	John Retherford at home: 309-584-4110, cell: 309-337-5740	
New Boston	Wilbur Frieden 309-337-0155	
North Henderson	Dan Cheline 309-337-0076	
Ohio Grove	Jeff Simpson 309-371-5946	
Perryton	David Lloyd 309-738-9424	
Preemption	Tom Slavish 309-582-6277	
Richland Grove	Jeff Weber 309-235-4228	
Rivoli	Don Fowler 309-337-8291	
Suez	Lynn Pease 309-255-5987	

MERCER COUNTY HIGHWAY DEPARTMENT	
County Engineer	Rick Walker office: 309-582-2715
Engineer Tech	Matt Lower at home: 309-582-2640, cell: 309-221-2744
MERCER COUNTY EMERGENCY MANAGEMENT AGENCY	
Director	Jennifer Hamerlinck 309-371-8326
ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)	
Lead Worker	Cory Burgland 309-221-7091
BAY ISLAND DRAINAGE DISTRICT	
Commissioners	Brian Mills at home: 309-587-8557, cell: 563-260-5670 Mike Frieden: cell: 309-337-0515 Dustin Marston cell: 563-260-0688
SUBDISTRICT OF UNION #1	
Commissioners	Jake Elliot: 563-260-6560 Sam Bieri cell: 563-260-3367 Bill Onken cell: 309-791-2322

Illinois Department of Commerce & Economic Opportunity

Lee Trotter (Account Manager)
1305 17th Avenue
Viola, IL 61486
(309) 596-4027, cell (309) 582-4090
Business Development Public Infrastructure Program (BDPIP)
http://www.commerce.state.il.us/dceo/Bureaus/Business_Development/Grants/bdpip.htm

The BDPIP program is designed to provide grants to units of local government for public improvements on behalf of businesses undertaking a major expansion or relocation project that will result in substantial private investment and the creation and/or retention of a large amount of Illinois jobs. The infrastructure improvements must be made for public benefit and on public property and must directly result in the creation or retention of private sector jobs. The local government must demonstrate clear need for financial assistance to undertake the improvements. Grant eligibility and amount are determined by the amount of investment and job creation or retention involved.

Illinois Department of Transportation:

IDOT Mercer County Lead Worker
Cory Burgland
(309) 221-7091

IDOT has several programs that provide state assistance in improving highway and rail access improvements to new or expanding industrial, distribution or tourism developments. The focus of these programs is the retention and creation of Illinois jobs. Funding may be available for transportation improvement projects related to facilities that provide direct access to economic development projects. Projects providing access to retail establishments, office parks, government facilities or school/universities are not eligible.

IDOT Economic Development Program (EDP):

Chief, Bureau of Statewide Program Planning
IDOT, 2300 S. Dirksen Parkway, Rm. 307
Springfield, IL 62764
(217) 782-2755
http://www.dot.state.il.us/edp/edp.html

Administered through the Illinois Department of Transportation (IDOT), the EDP program is designed to provide state assistance to local governments for highway improvements and access to new or expanding industrial distribution and tourism development projects. The state may provide up to 50 percent matching (grant) funds to local governments for eligible public roadway related construction and engineering items. Projects involving private roadways, retail development, office parks, government facilities, and school/universities are not eligible for funding.

IDOT Truck Access Route Program (TARP):

Bureau of Local Roads and Streets
Highway Systems Manager
Room 205
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764
Phone (217) 782-3401
Fax (217) 782-3971
http://www.dot.state.il.us/tarp.html

Administered through the Illinois Department of Transportation (IDOT), the TARP program can provide grants to local government agencies to assist them in upgrading roads to accommodate 80,000-pound trucks. The routes are to provide access to points of loading and unloading and to facilities for food, fuel, truck repair, and driver rest. Projects must connect to a truck route and end at another truck route or truck generator. IDOT will provide up to $30,000 per lane mile and $15,000 per intersection. The states participation will not exceed 50 percent of the total construction cost or $600,000 whichever is less. Each fall IDOT solicits local projects that can be constructed during the upcoming fiscal year

Aging infrastructure has been an issue in the county resulting in downed power lines and poles with subsequent power outage during winter and ice storms; roads and bridges washing out during flooding; and some structures more vulnerable to high wind events. Reference planning areas for details on county infrastructure.

Incorporation of protective measures into all future projects related to community infrastructure enhances community resilience and mitigation efforts. Hazard mitigation actions include those related to such things as:

- Flood protection of water or sewer facilities, roads, and drainage projects
- Repairing or replacing aging transportation infrastructure such as roads and bridges
- Protective improvements made to critical facilities such as hospital, fire stations, the Emergency Operations Center
- Dam or levee work/maintenance
- Utility system redundancies

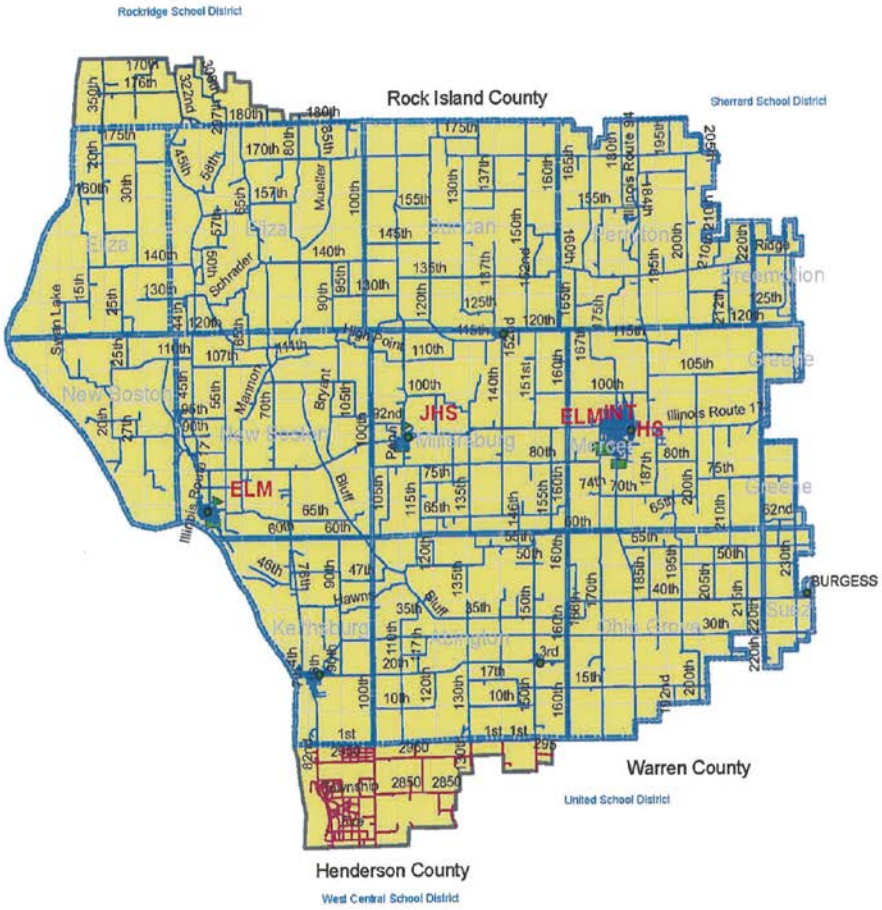
Planning Area

Mercer County is located along U.S. Highway 67 and State Highways 17 and 94 in the U.S. state of Illinois. The Mississippi River is located along the western border of Mercer County and is part of the Yellowbanks Territory, named by the Sauk and Fox Indians because of the yellow, sandy soil along the riverbank. Named after Revolutionary War hero General Hugh Mercer, Mercer County was chartered in 1835 as part of the Old Northwest Territory and the Military Tract. As of 2010, the population was 16,434 a drop of 523 from 2000. The county seat is Aledo. Mercer County is one of the four counties that make up the Davenport-Moline-Rock Island Metropolitan Statistical Area.
(www.mercercountyil.org)

Figure 1: Mercer County Planning Area

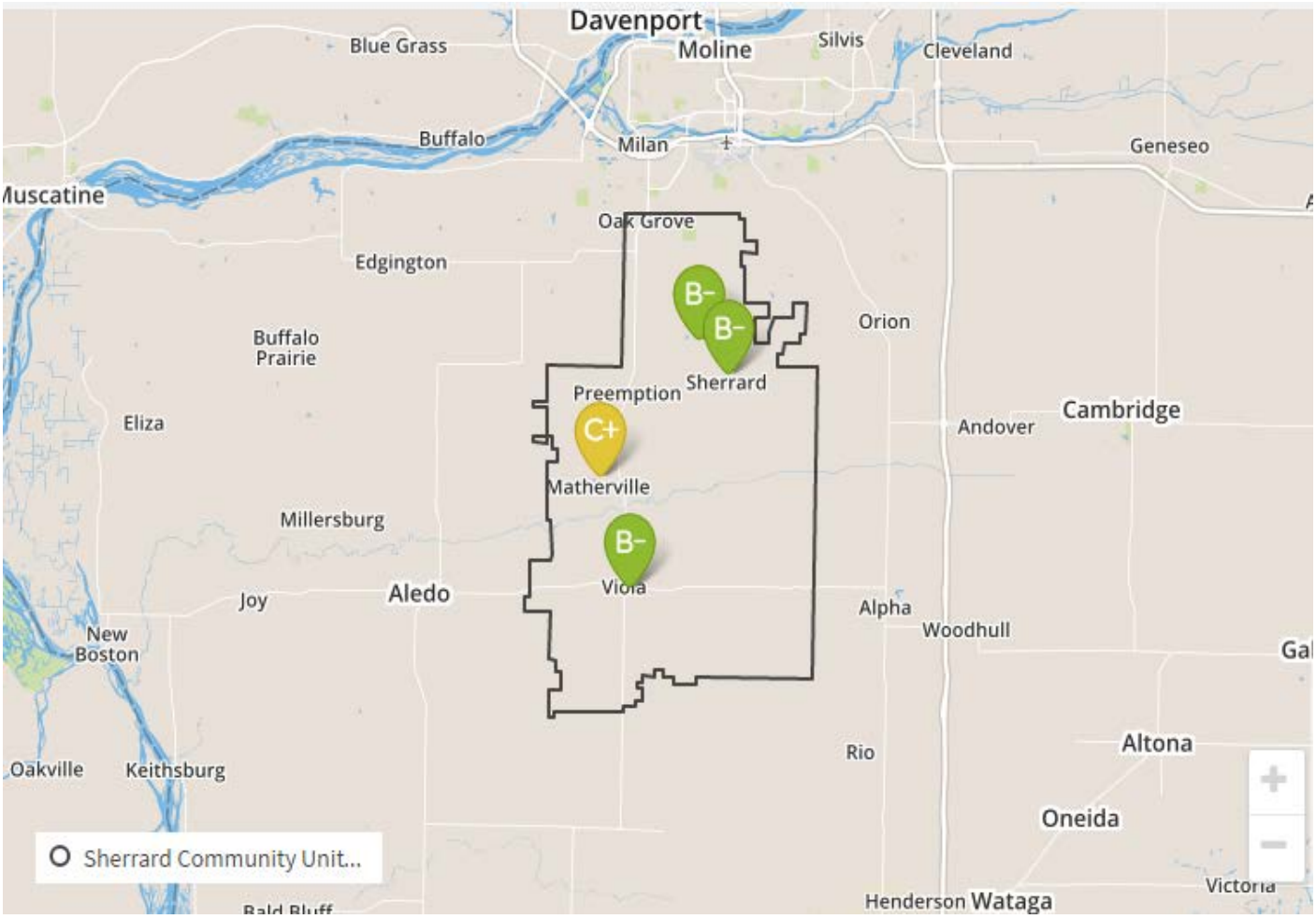
Mercer County School District #404 is located in northwest Illinois and covers an area of 370 square miles making it the fifth largest district in the state. The district was created in 2009 as a result of a consolidation of the Westmer and Aledo School Districts. The district serves approximately 1,300 students from pre-kindergarten through 12th grade in five buildings and employs approximately 210 full and part-time employees. *(www.mercerschool.org)*

Figure 2: Mercer County Planning Area School Districts
Mercer County School District #404



The Sherrard Community Unit School District #200 is a Pre-K through 12th grade Unit District located in Rock Island and Mercer Counties in the northwestern part of Illinois. The district is located approximately 20 miles south of the Quad Cities and encompasses 173 square miles. Sherrard has a strong tradition of academic and athletic excellence. The current Pre-K through 12 enrollment of nearly 1700 students is housed in five different campuses. *(www.sherrard.us)*

Figure 3: Mercer County Planning Area School Districts
Sherrard Community Unit School District #200



The largest city in Mercer County is Aledo with a population of 3,641 as of 2013. The second largest is Viola with only 927 people. The smallest municipality in Mercer County is North Henderson with a population of 181 people.

Figure 3: Mercer County 2010 U.S. Census Population

*Population data from www.census.gov 2014 population estimate statistics

Jurisdiction	Population
Mercer County	15,858 (2015 pop. estimate)
Aledo	3,588
Alexis	818
Joy	396
Keithsburg	586
Matherville	689
New Boston	658
New Windsor	716
North Henderson	181
Seaton	215
Sherrard	614
Viola	927

There are two school districts in Mercer County. Mercer County School District 404 students all reside in Mercer County. Mercer County School District 404 has an enrollment of 1,299 students in grades K-12 for 2015-2016 school year. A total of 1,463 students are enrolled at Sherrard Community Unit School District, but Sherrard houses both Mercer County and Rock Island County students.

Table 4: School District Enrollment 2015-2016 School Year

District	School Location	Student Enrollment
Mercer County School District	Mercer County High School Aledo	378
Mercer County School District	Mercer County Intermediate Aledo	190
Mercer County School District	Mercer County Jr. High Joy	199
Mercer County School District	Apollo Elementary School Aledo	356
Mercer County School District	New Boston Elementary School New Boston	209
Sherrard School District	Sherrard High School Sherrard	478
Sherrard School District	Sherrard Jr. High Sherrard	231
Sherrard School District	Sherrard Elementary School Sherrard	267
Sherrard School District	Winola Elementary School Viola	276
Sherrard School District	Matherville Intermediate Matherville	226

Planning Area - Aledo

As of the census [13] of 2010, there were 3,640 people, 1,568 households, and 947 families residing in the city. The racial makeup of the city was 98.5% (3,586) White; 0.6% (22) African American; 0.0% (1) Native American; 0.3% (12) Asian; 0.1% (4) from other races; and 0.4% (15) from two or more races. Hispanic or Latino of any race were 1.2% (45) of the population.

There were 1,568 households out of which 24.5% had children under the age of 18 living in them, 49.0% were married couples living together, 3.6% had a male householder with no wife present, 7.8% had a female householder with no husband present, and 39.6% were non-families. 35.7% of all households were made up of individuals and 20.2% had someone living alone who was 65 years of age or older. The average household size was 2.20 and the average family size was 2.84.

The male population made up 47.5% (1,728), the female population made up 52.5% (1,912). There was 6.3% (229) of the population under 5 years; 17.1% (622) from 5 to 19 years; 10.3% (374) from 20 to 29 years; 10.2% (368) from 30 to 39; 12.5% (453) from 40 to 49; 12.9% (472) from 50 to 59; 12.1% (441) from 60 to 69; 8.2% (296) from 70 to 79; and 10.6% (385) were 80 years and over. The median age was 45.8 years.

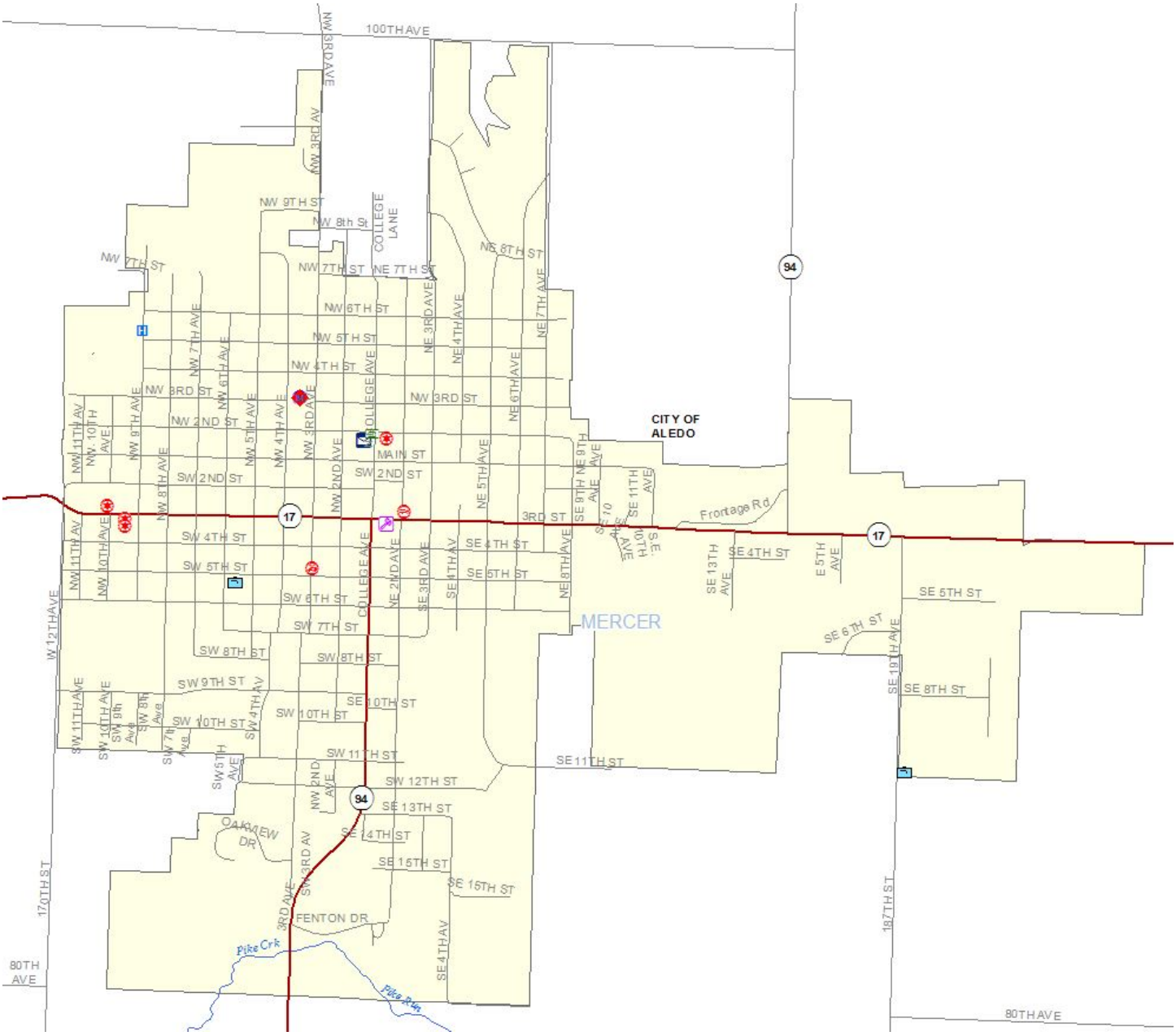
The 2009-2013 American Community Survey [14] estimated the median income in 2013 for a household in the city to be $39,424, and the median income for a family to be $56,546. Full-time, year-round male workers were estimated to have a median income of $44,435 versus $30,357 for females. The per capita income for the city was $21,373. About 15.0% of families and 18.4% of the population were estimated below the poverty line, including 22.1% of those under age 18 and 11.7% of those age 65 or over.

The American Community Survey estimated that in 2013 there were 1,740 civilians 16 years and over employed. Of those, 33.7% were estimated to be employed in educational services, health care or social assistance; 14.3% in manufacturing; 10.0% in construction; 8.4% in retail trade; 6.8% in professional, scientific, management, administrative or waste management services; 6.1% in finance, insurance, real estate, rental and leasing; 4.8% in arts, entertainment, recreation, accommodation or food services; and the remaining 15.9% in other (including agriculture, forestry, fishing and hunting, mining, wholesale trade, transportation and warehousing, utilities, information, public administration, and other services). *(www.wikipedia.com)*

Aledo Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	120 N College Ave, Aledo, IL 61231 309-582-7241	N 41°12'8.16 W 90°44'57.19
Fire Department	Fire Station	211 SE 3rd St, Aledo, IL 61231 309-582-2208	N 41°11'59.69 W 90°44'52.47
Genesis Ambulance	Genesis Ambulance	409 NW 9th Ave, Aledo, IL 61231 309-582-5301, Brian Payne cell: 309-737-8863	N 41°12'19.20 W 90°45'30.61
Genesis Medical Center Aledo	Hospital	409 NW 9th Ave, Aledo, IL 61231 309-582-5301	N 41°12'19.20 W 90°45'30.61
Mercer County Courthouse	Courthouse	100 SE 3rd St, Aledo, IL 61231 309-582-2138	N 41°11'58.26 W 90°44'55.10
Mercer County Emergency Management Agency	Emergency Management	305 NW 7th St, Aledo, IL 61231 309-582-3759	N 41° 12'12.00 W 90° 45'07.79
Mercer County Health Department	Health Department	305 NW 7th St, Aledo, IL 61231 309-582-3759	N 41° 12'12.00 W 90° 45'07.79
Mercer County Jail	Law Enforcement	906 SW 3rd St, Aledo, IL 61231 309-582-5020	N 41°11'58.72 W 90°45'32.93
Mercer County Sheriff's Annex	Law Enforcement	1000 SW 3rd St, Aledo, IL 61231 No phone	N 41°12'0.09 W 90°45'35.55
Mercer County Sheriff's Department	Law Enforcement	906 SW 3rd St, Aledo, IL 61231 309-582-5194	N 41°11'58.72 W 90°45'32.93
Police Department	Law Enforcement	200 NE 2nd Street, Aledo, IL 61231 309-582-2331	N 41°12'08.50 W 90°44'52.12
Post Office	Post Office	117 N College Ave, Aledo, IL 61231 309-582-7113	N 41°12'7.57 W 90°44'57.32
Water Tower (East Side)	Water	187th St, South of SE 8th St, Aledo, IL 61231 No phone	N 41° 11'32.56 W 90° 43'39.59"
Water Tower (West Side)	Water	581 SW 5th Street, Aledo, IL 61231 No phone	N 41° 11'52.75" W 90° 45'17.09"
Water Treatment	Water	West of Joy, on Bryant Road, North of Hwy 17 No phone	N 41° 11'37.07" W 90° 55'30.49"

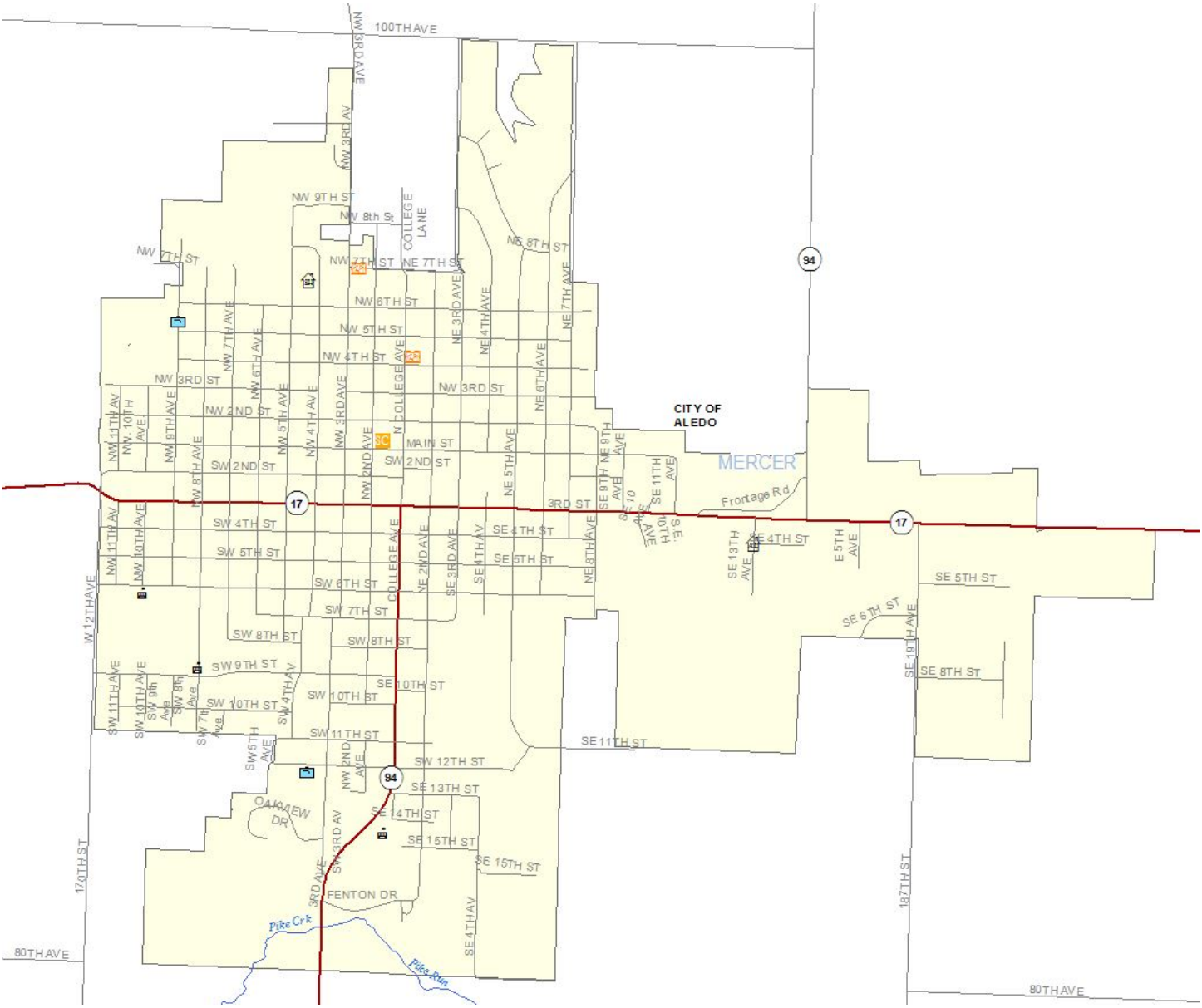
Aledo Essential Facilities



Aledo Vulnerable Populations

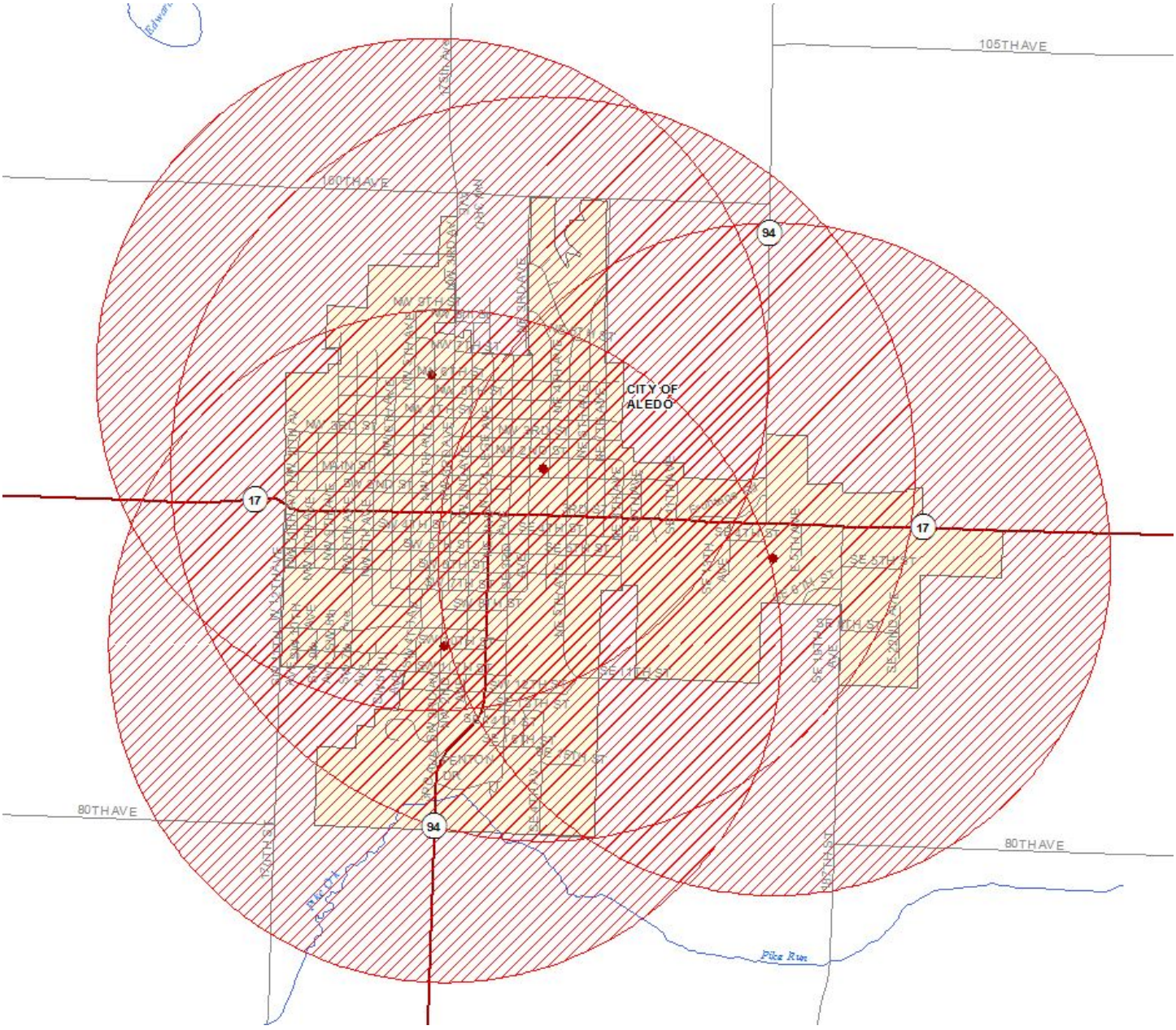
NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Aledo Rehabilitation & Health Care Center	Nursing Home	304 SW 12th St, Aledo, IL 61231 309-582-5376	N 41°11'29.04 W 90°45'11.07
Apollo Elementary	School	801 SW 9 St, Aledo, IL 61231 309-582-5350	N 41°11'40.60 W 90°45'27.40
Brookstone of Aledo	Assisted Living	405 SE 13th Ave, Aledo, IL 61231 309-582-1132	N 41°11'54.82 W 90°44'5.11
Genesis Senior Living	Nursing Home	409 NW 9th Ave, Aledo, IL 61231 309-582-5301	N 41°12'19.20 W 90°45'30.61
Mercer County High School	School	1500 College Ave, Aledo, IL 61231 309-582-2223	N 41°11'22.18 W 90°44'59.78
Mercer County Intermediate School	School	1002 SW 6th St, Aledo, IL 61231 309-582-2441	N 41°11'50.56 W 90°45'35.62
Mercer County Senior Center	Senior Center	137 W Main St, Aledo, IL 61231 309-582-7221	N 41°12'6.12 W 90°45'0.04
Project Now – Head Start	Daycare	305 NW 7th St, Aledo, IL 61231 309-582-3668	N 41°12'26.39 W 90°45'3.65
Vashti Village	Senior Housing	609 NW 4th Ave, Aledo, IL 61231 309-582-5410	N 41°12'26.74 W 90°45'26.41
YMCA Children's School	Daycare	400 N College Ave, Aledo, IL 61231 309-582-2503	N 41°12'15.57 W 90°44'57.14

Aledo Vulnerable Populations

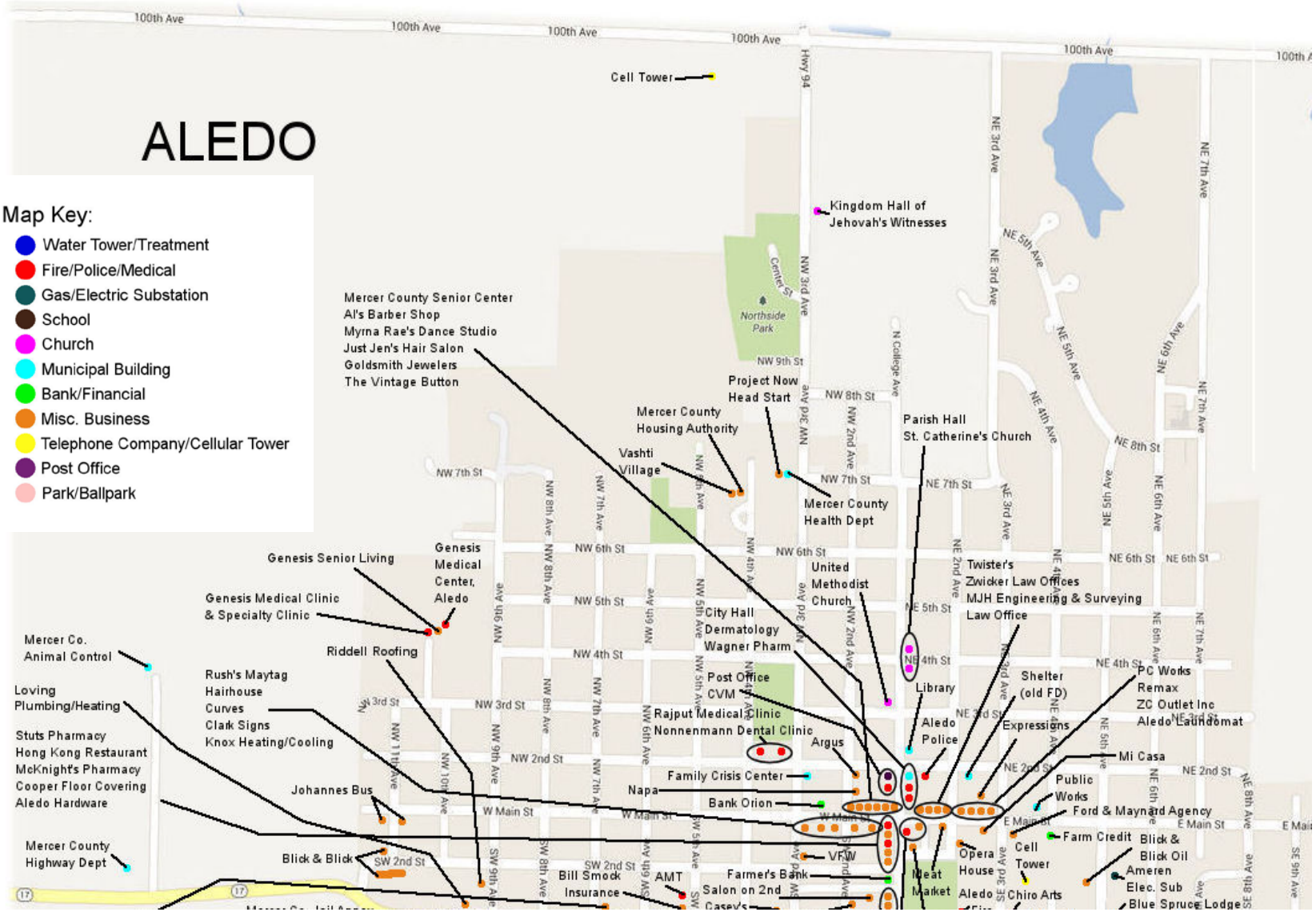


Aledo Storm Siren Locations

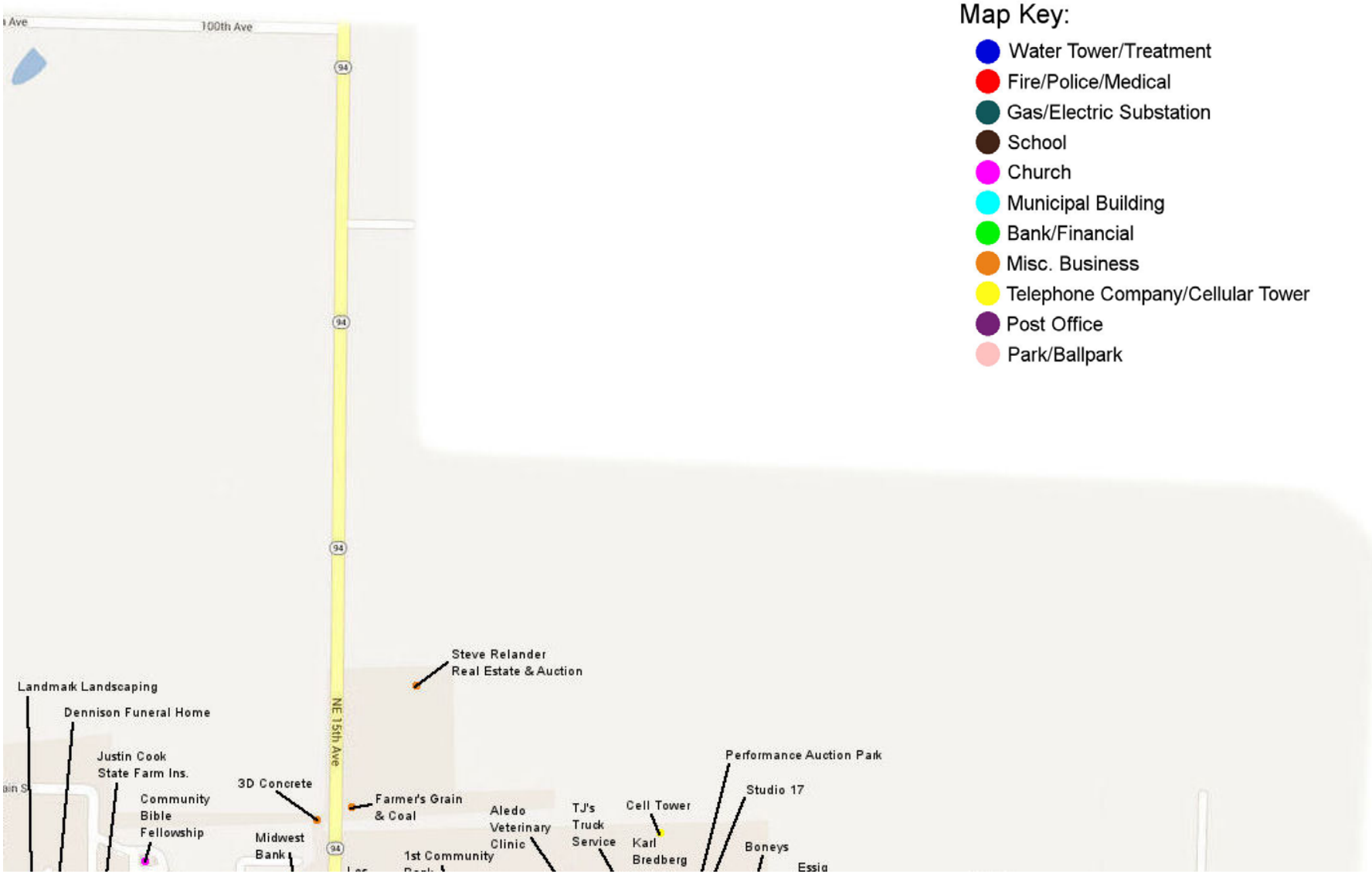
Location	GPS Coordinates	Effective Range
City of Aledo Garage 309 E. Main Street	N 41.202004 W 90.746072	Effective range at 70dBC: 6200ft
Walmart Rt. 17 and SE 15th Ave.	N 41.197947 W 90.732034	Effective range at 70dBC: 5600ft
Thede Residence SW 3rd Ave & SW 10th Str.	N 41.193870 W 90.751924	Effective range at 70dBC: 5600ft
Vashti NW 4th Ave & NW 6th Str.	N 41.206288 W 90.752787	Effective range at 70dBC: 5600ft



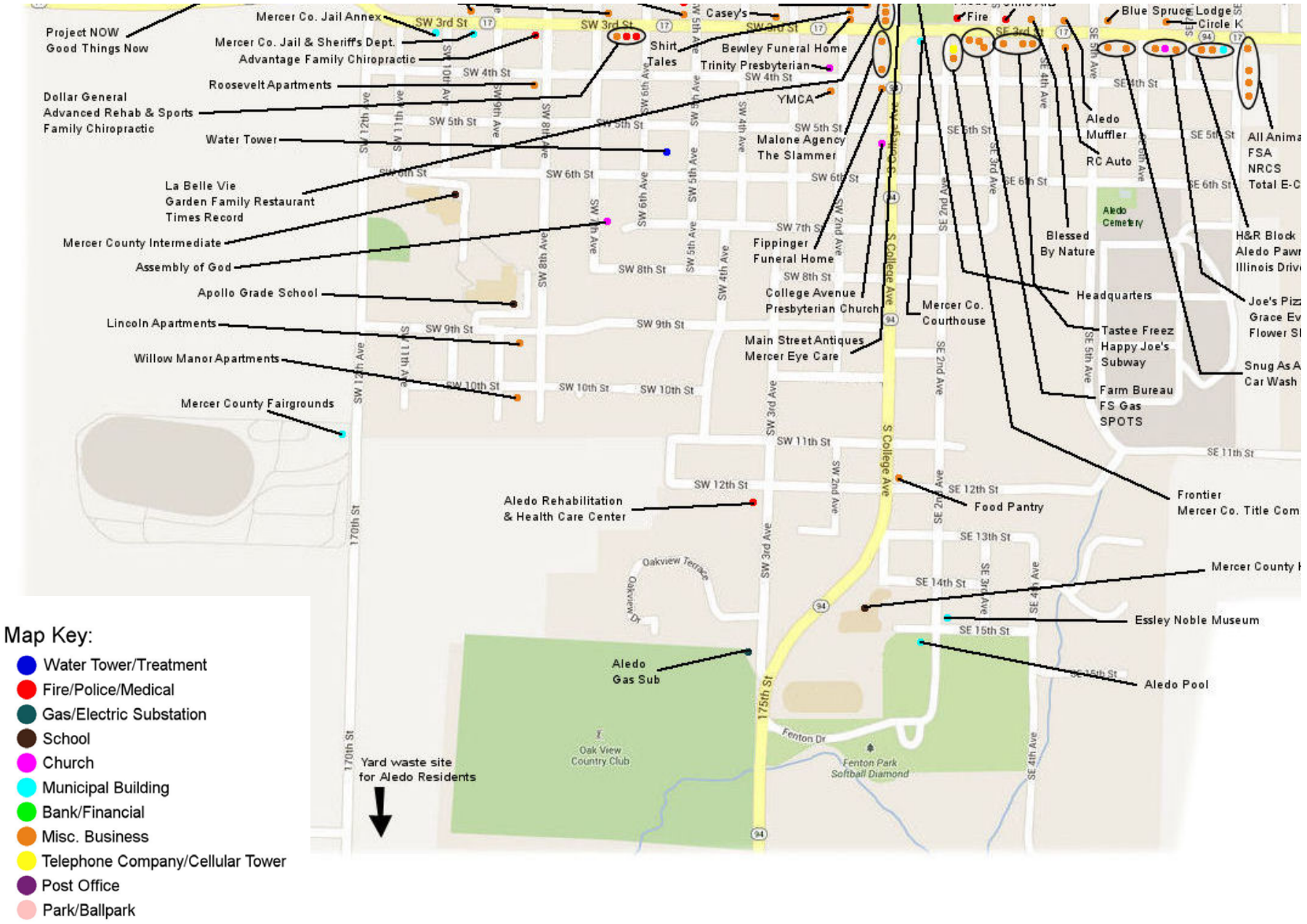
Aledo Map NW Quadrant



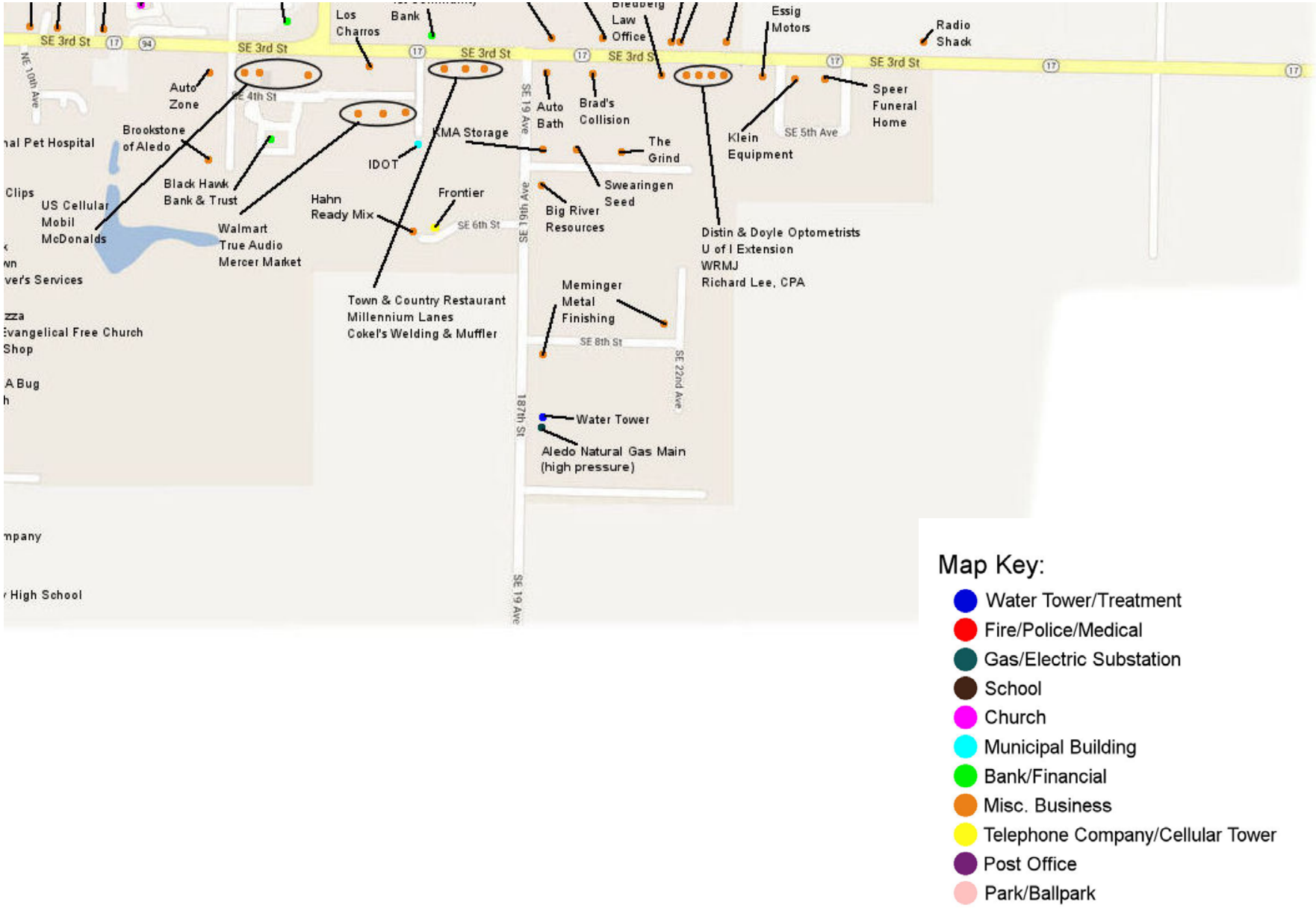
Aledo Map NE Quadrant



Aledo Map SW Quadrant



Aledo Map SE Quadrant



Map Key:

- Water Tower/Treatment
- Fire/Police/Medical
- Gas/Electric Substation
- School
- Church
- Municipal Building
- Bank/Financial
- Misc. Business
- Telephone Company/Cellular Tower
- Post Office
- Park/Ballpark

ALEDO

Map Key:
- Water Tower/Treatment
- Fire/Police/Medical
- Gas/Electric Substation
- School
- Church
- Municipal Building
- Bank/Financial
- Misc. Business
- Telephone Company/Cellular Tower
- Post Office
- Park/Ballpark

Cell Tower
Kingdom Hall of Jehovah's Witnesses
Mercer County Senior Center
Al's Barber Shop
Myrna Rae's Dance Studio
Just Jen's Hair Salon
Goldsmith Jewelers
The Vintage Button
Project Now Head Start
Mercer County Housing Authority
Vashti Village
Mercer County Health Dept
Parish Hall
St. Catherine's Church
Genesis Senior Living
Genesis Medical Center, Aledo
Genesis Medical Clinic & Specialty Clinic
United Methodist Church
Twister's
Zwicker Law Offices
MJH Engineering & Surveying
Law Office
City Hall
Dermatology
Wagner Pharm
Mercer Co. Animal Control
Riddell Roofing
Rush's Maytag
Hairhouse
Curves
Clark Signs
Knox Heating/Cooling
Post Office
CVM
Rajput Medical Clinic
Nonnenmann Dental Clinic
Argus
Library
Shelter (old FD)
Aledo Police
Expressions
PC Works
Remax
ZC Outlet Inc
Aledo Laundromat
Mi Casa
Public Works
Ford & Maynard Agency
Farm Credit
Loving Plumbing/Heating
Stuts Pharmacy
Hong Kong Restaurant
McKnight's Pharmacy
Cooper Floor Covering
Aledo Hardware
Family Crisis Center
Napa
Bank Orion
Johannes Bus
Blick & Blick
Mercer County Highway Dept
Project NOW
Good Things Now
Bill Smock Insurance
AMT
Farmer's Bank
Salon on 2nd
Casey's
VFW
Meat Market
Opera House
Aledo Fire
Chiro Arts
Cell Tower
Blick & Blick Oil
Ameren
Elec. Sub
Blue Spruce Lodge
Circle K
Mercer Co. Jail Annex
Mercer Co. Jail & Sheriff's Dept.
Advantage Family Chiropractic
Shirt Tales
Bewley Funeral Home
Trinity Presbyterian
Roosevelt Apartments
Dollar General
Advanced Rehab & Sports
Family Chiropractic
YMCA
Water Tower
Malone Agency
The Slammer
La Belle Vie
Garden Family Restaurant
Times Record
Mercer County Intermediate
Assembly of God
Apollo Grade School
Lincoln Apartments
Willow Manor Apartments
Mercer County Fairgrounds
Fippinger Funeral Home
College Avenue Presbyterian Church
Main Street Antiques
Mercer Eye Care
Mercer Co. Courthouse
Headquarters
Tastee Freez
Happy Joe's
Subway
Farm Bureau
FS Gas
SPOTS
Snug As A Bug
Car Wash
Blessed By Nature
Aledo Muffler
RC Auto
All Animal Pet Hospital
FSA
NRCS
Total E-Clips
H&R Block
Aledo Pawn
Illinois Driver's Services
Joe's Pizza
Grace Evangelical Free Church
Flower Shop
US Cellular
Mobil
McDonalds
Landmark Landscaping
Dennison Funeral Home
Justin Cook
State Farm Ins.
Community Bible Fellowship
Steve Relander
Real Estate & Auction
3D Concrete
Farmer's Grain & Coal
Midwest Bank
Los Charros
1st Community Bank
Aledo Veterinary Clinic
TJ's Truck Service
Cell Tower
Karl Bredberg Law Office
Performance Auction Park
Studio 17
Boneys
Essig Motors
Radio Shack
Speer Funeral Home
Klein Equipment
Auto Bath
Brad's Collision
The Grind
Swearingen Seed
Big River Resources
Auto Zone
Brookstone of Aledo
Black Hawk Bank & Trust
Walmart
True Audio
Mercer Market
IDOT
KMA Storage
Hahn Ready Mix
Frontier
Town & Country Restaurant
Millennium Lanes
Cokel's Welding & Muffler
Meminger Metal Finishing
Water Tower
Aledo Natural Gas Main (high pressure)
Distin & Doyle Optometrists
U of I Extension
WRMJ
Richard Lee, CPA
Frontier
Mercer Co. Title Company
Aledo Rehabilitation & Health Care Center
Food Pantry
Mercer County High School
Essley Noble Museum
Aledo Pool
Aledo Gas Sub
Yard waste site for Aledo Residents
Oak View Country Club
Fenton Park Softball Diamond
Aledo Cemetery
Northside Park

Planning Area - Alexis

As of the census [9] of 2000, there were 863 people, 361 households, and 246 families residing in the village. The population density was 1,778.6 people per square mile (680.0/km²). There were 383 housing units at an average density of 789.3 per square mile (301.8/km²). The racial makeup of the village was 99.65% White, 0.12% from other races, and 0.23% from two or more races. Hispanic or Latino of any race were 2.20% of the population.

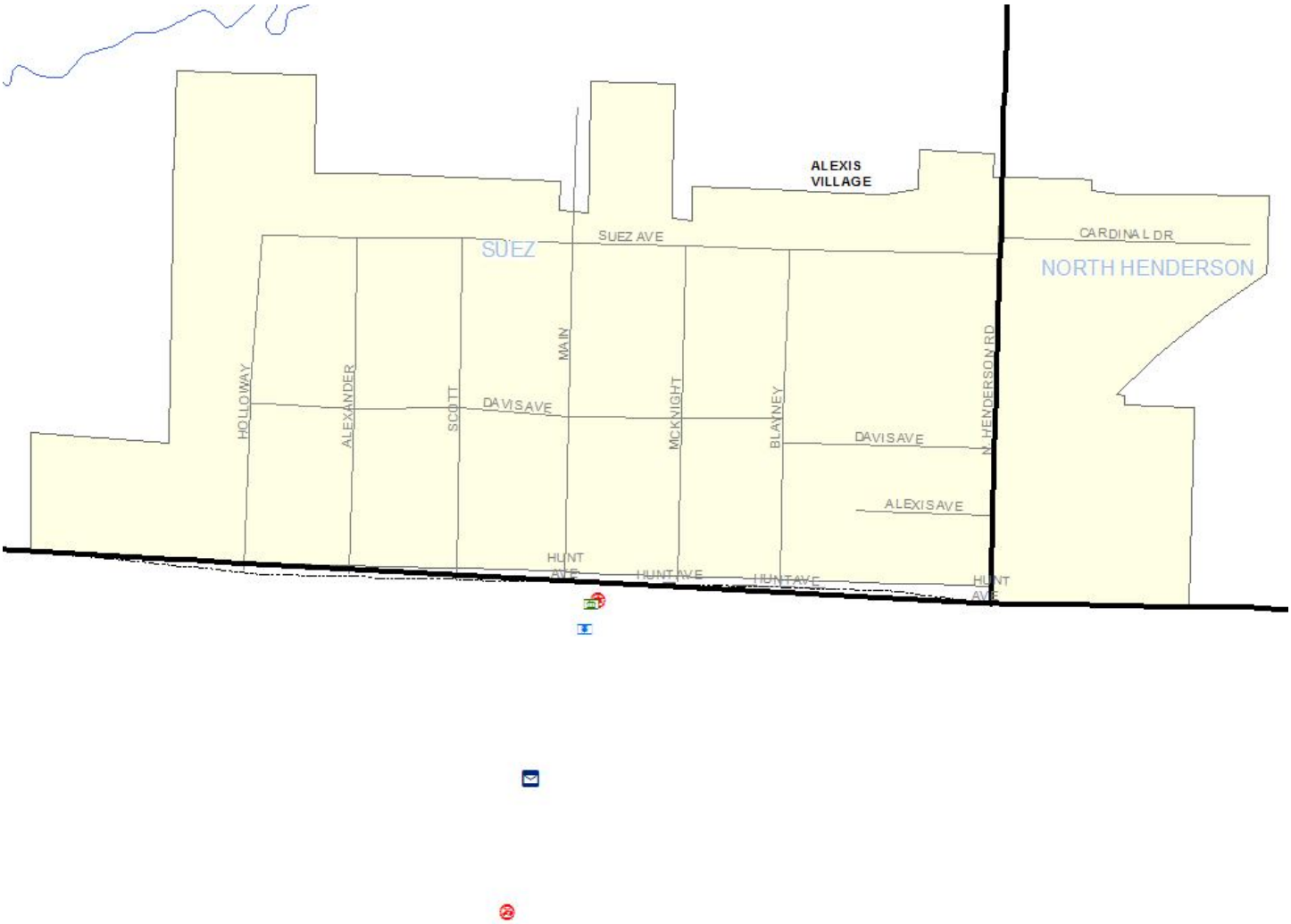
There were 361 households out of which 28.3% had children under the age of 18 living with them, 58.7% were married couples living together, 6.6% had a female householder with no husband present, and 31.6% were non-families. 28.8% of all households were made up of individuals and 15.5% had someone living alone who was 65 years of age or older. The average household size was 2.39 and the average family size was 2.94.

In the village the population was spread out with 24.3% under the age of 18, 7.0% from 18 to 24, 25.5% from 25 to 44, 24.1% from 45 to 64, and 19.1% who were 65 years of age or older. The median age was 40 years. For every 100 females there were 88.0 males. For every 100 females age 18 and over, there were 88.7 males.

The median income for a household in the village was $36,705, and the median income for a family was $46,364. Males had a median income of $32,419 versus $19,000 for females. The per capita income for the village was $17,059. About 4.0% of families and 5.9% of the population were below the poverty line, including 4.0% of those under age 18 and 3.8% of those age 65 or over.
(www.wikipedia.com)

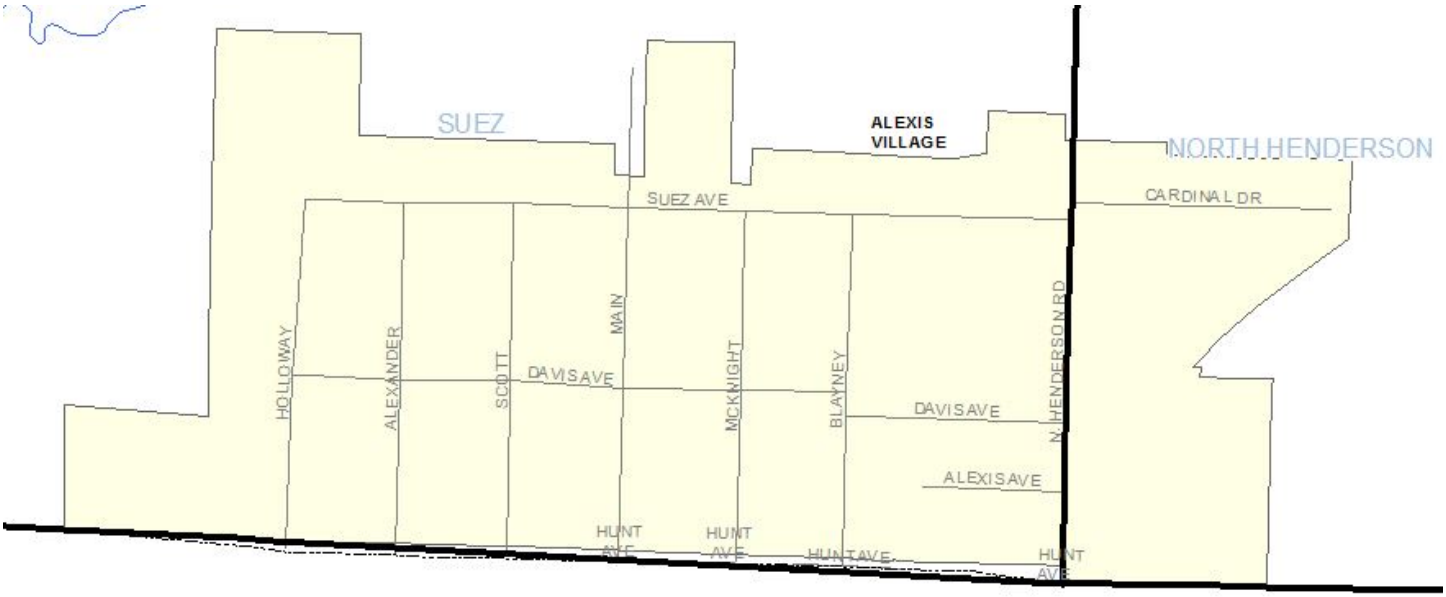
Alexis Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Alexis-North Henderson Volunteer Ambulance Service	Ambulance Service	106 E. Palmer Ave, Alexis IL 61412 (2 ambulances at this location)	N 41°3'40.436 W 90°33'17.169
City Hall	City Hall	122 N Main St, Alexis, IL 61412 309-482-3424	N 41°3'51.34 W 90°33'20.31
Fire Department	Fire Station	108 E. Palmer Ave, Alexis IL 61412 309-482-5551	N 41°3'39.8 W 90°33'17.177
Police Department	Law Enforcement	122 N Main St, Alexis, IL 61412 309-482-5537	N 41°3'51.34 W 90°33'20.31
Post Office	Post Office	101 S Main St, Alexis, IL 61412 309-482-3264	N 41°3'42.67 W 90°33'20.50
Water Tower	Water Tower	North Main Street, South of City Hall, Alexis No Phone	N 41° 03'49.69 W 90° 33'19.27



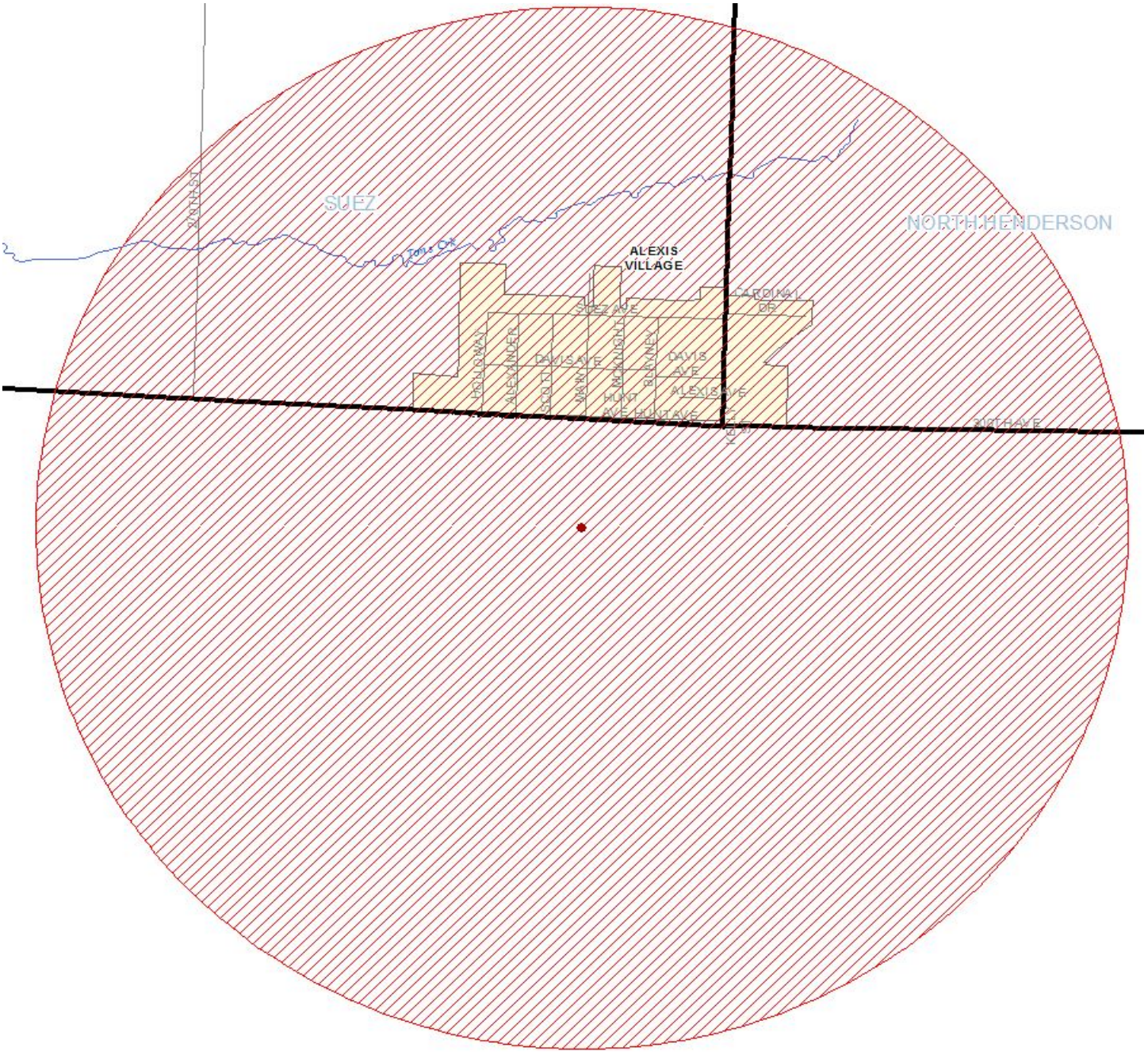
Alexis Vulnerable Populations

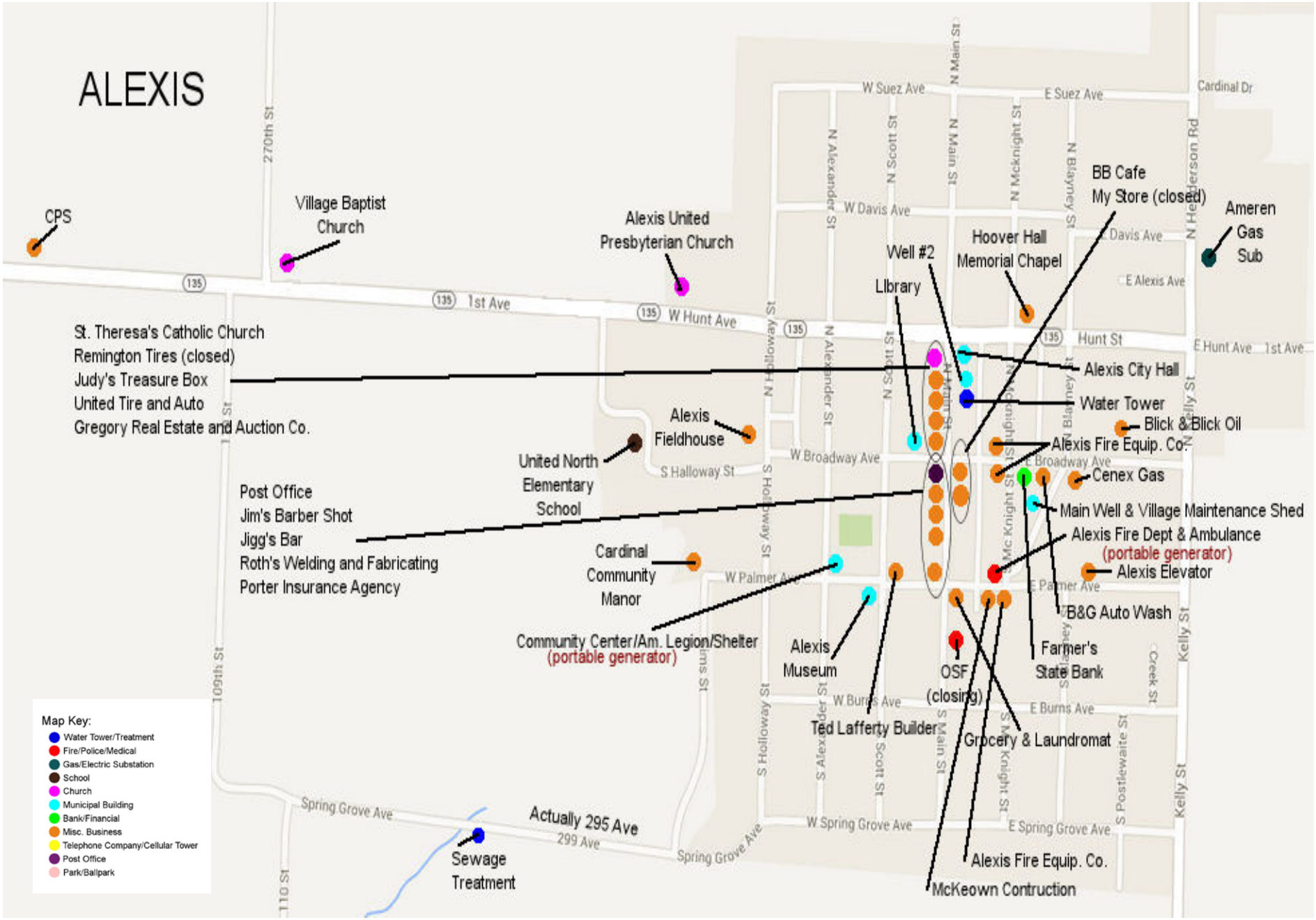
NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
United North Elementary School	School	1905 100th Street, Alexis, IL 61412 309-482-9413	N 41°3'31.02 W 90°35'22.23



Alexis Storm Sirens

Location	GPS Coordinates	Effective Range
Fire Station 108 E Palmer Ave.	N 41°3'39.8 W 90°33'17.177	Effective range at 70dBC: 5600ft

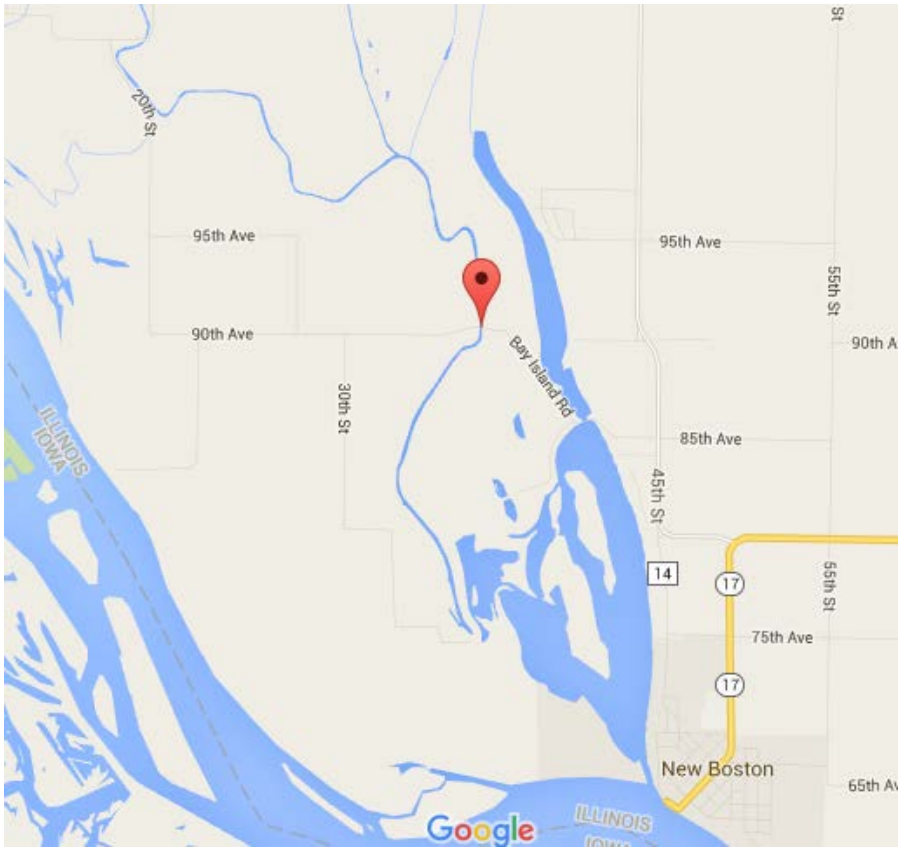



ALEXIS
CPS
Village Baptist Church
Alexis United Presbyterian Church
St. Theresa's Catholic Church
Remington Tires (closed)
Judy's Treasure Box
United Tire and Auto
Gregory Real Estate and Auction Co.
Alexis Fieldhouse
United North Elementary School
Post Office
Jim's Barber Shot
Jigg's Bar
Roth's Welding and Fabricating
Porter Insurance Agency
Cardinal Community Manor
Community Center/Am. Legion/Shelter
(portable generator)
Sewage Treatment
Well #2
Llbrary
Hoover Hall Memorial Chapel
BB Cafe
My Store (closed)
Ameren Gas Sub
Alexis City Hall
Water Tower
Blick & Blick Oil
Alexis Fire Equip. Co.
Cenex Gas
Main Well & Village Maintenance Shed
Alexis Fire Dept & Ambulance
(portable generator)
Alexis Elevator
B&G Auto Wash
Farmer's State Bank
Alexis Museum
OSF (closing)
Ted Lafferty Builder
Grocery & Laundromat
Alexis Fire Equip. Co.
McKeown Contruction
Actually 295 Ave
299 Ave
Spring Grove Ave
W Suez Ave
E Suez Ave
Cardinal Dr
W Davis Ave
E Davis Ave
E Alexis Ave
W Hunt Ave
Hunt St
E Hunt Ave
1st Ave
W Broadway Ave
E Broadway Ave
S Halloway St
W Palmer Ave
E Palmer Ave
W Burns Ave
E Burns Ave
W Spring Grove Ave
E Spring Grove Ave
270th St
109th St
110 St
N Alexander St
N Scott St
N Main St
N Mcknight St
N Blayney St
N Henderson Rd
S Holloway St
S Alexander St
S Scott St
S Main St
S Mcknight St
S Postlewaite St
Kelly St
Creek St
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark

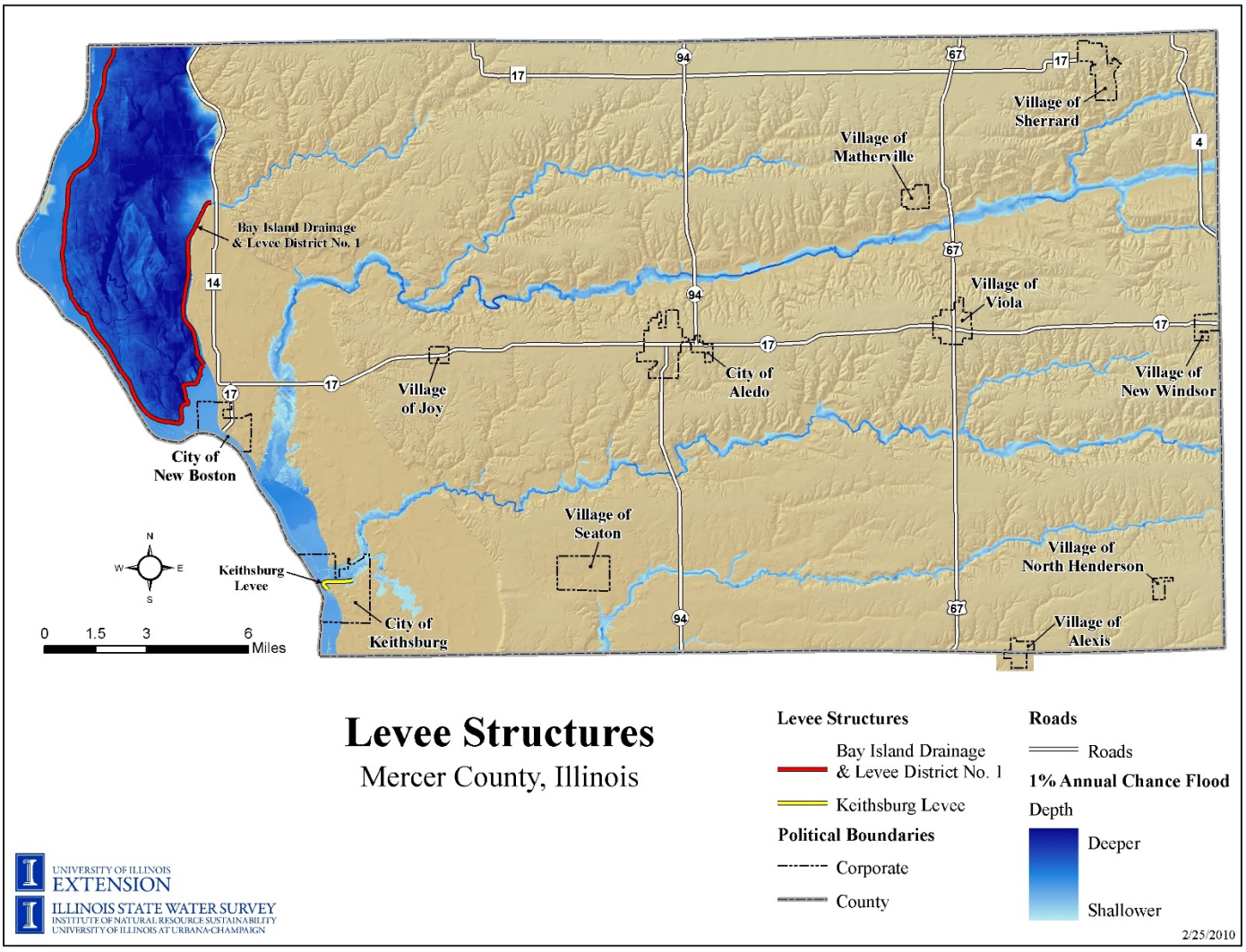
Planning Area – Bay Island

Bay Island is an unincorporated community located in northwestern Mercer County along the Mississippi River. Bay Island contains approximately 18,500 acres of farm land plus 500 additional acres of timber, ditches, roads, and a large lake. Bay Island Drainage District was formed in 1906 and is about 10 miles long and 4.5 miles wide at the largest point. Bay Island Pumping Station serves both Bay Island Drainage & Levee District #1 and Sub District of Union #1 (4,500 acres). All seepage water and rainwater that collect in both districts are pumped over the levee into the Mississippi River by 3 pumps that can operate at a maximum pumping capacity of 265,000 gallons of water per minute. ("Welcome to Bay," 1998) District is also the levee sponsor and maintains the 25 miles of levee working closely with US Army Corps of Engineers. Bay Island Drainage & Levee District #1 is overseen by three commissioners and it employs two people full time. The District is completely funded by the landowners within the district.

(Mercer County Social and Economic Impact Analysis 2013)

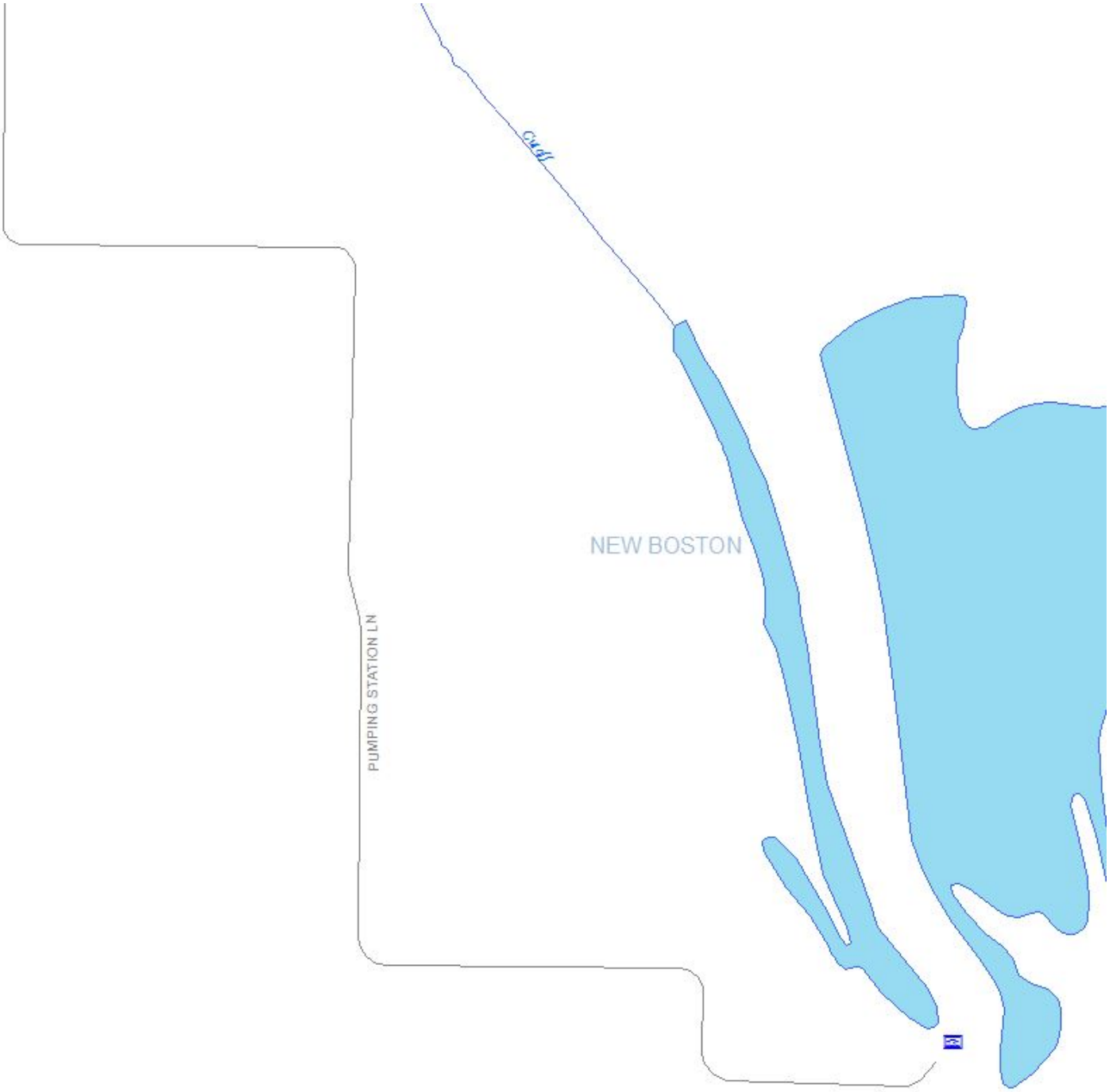


Levee Structures in Mercer County



Bay Island Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Pumping Station	Pumping Station	771 Pumping Station Lane, New Boston, IL 61272 309-587-8194	N 41°11'5.54 W 90°1'44.17



Planning Area - Joy

At the 2000 census, [5] there were 373 people, 156 households and 104 families residing in the village. The population density was 888.3 per square mile (342.9/km²). There were 167 housing units at an average density of 397.7 per square mile (153.5/km²). The racial makeup of the village was 99.46% White, and 0.54% from two or more races. Hispanic or Latino of any race were 1.07% of the population.

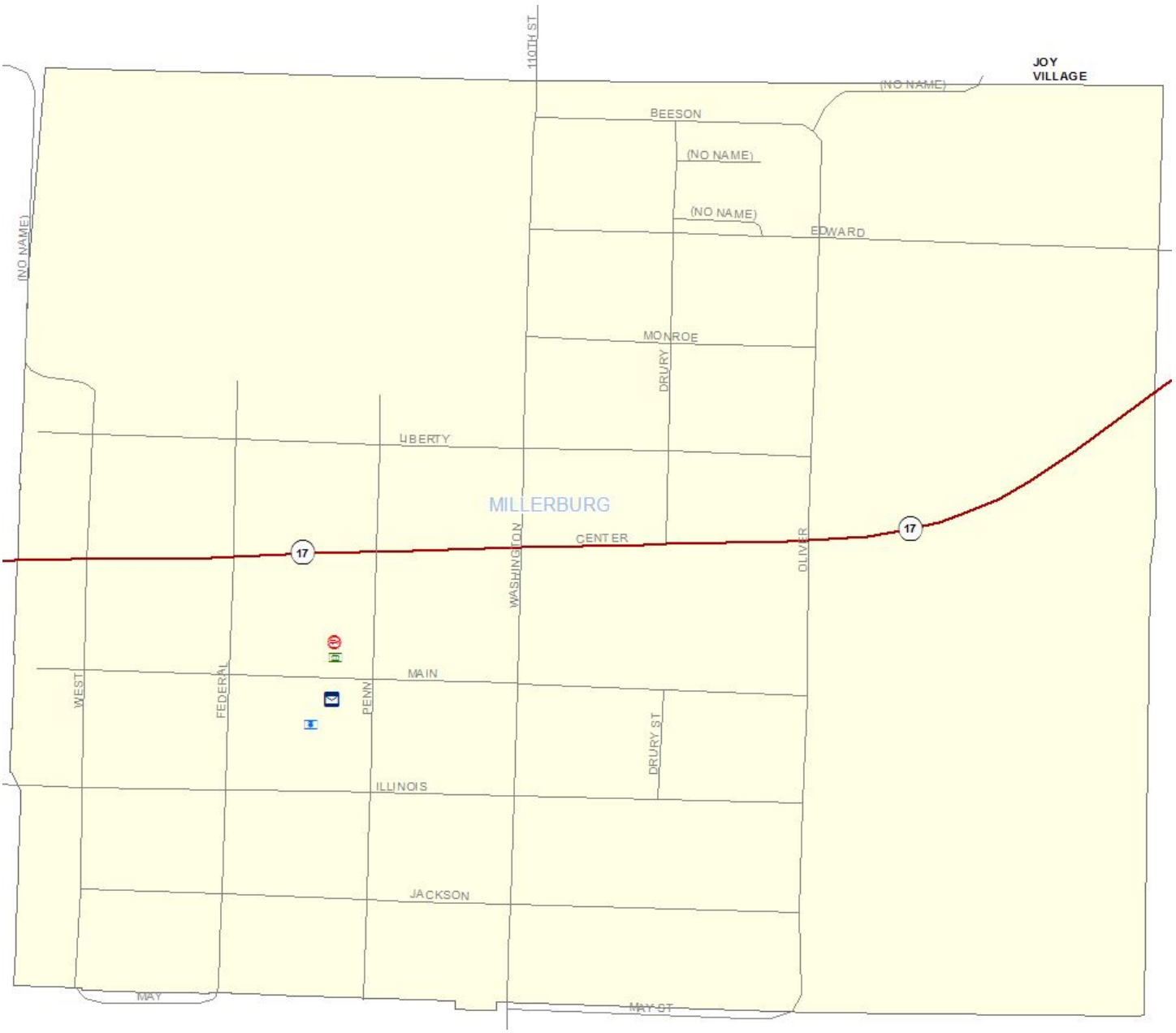
There were 156 households of which 32.1% had children under the age of 18 living with them, 54.5% were married couples living together, 9.6% had a female householder with no husband present, and 33.3% were non-families. 29.5% of all households were made up of individuals and 13.5% had someone living alone who was 65 years of age or older. The average household size was 2.39 and the average family size was 2.96.

26.5% of the population were under the age of 18, 9.7% from 18 to 24, 27.3% from 25 to 44, 20.9% from 45 to 64, and 15.5% who were 65 years of age or older. The median age was 35 years. For every 100 females there were 92.3 males. For every 100 females age 18 and over, there were 91.6 males.

The median household income was $36,625 and the median family income was $39,722. Males had a median income of $32,232 versus $25,500 for females. The per capita income was $14,201. About 12.7% of families and 18.6% of the population were below the poverty line, including 26.9% of those under age 18 and 4.3% of those age 65 or over. *(www.wikipedia.com)*

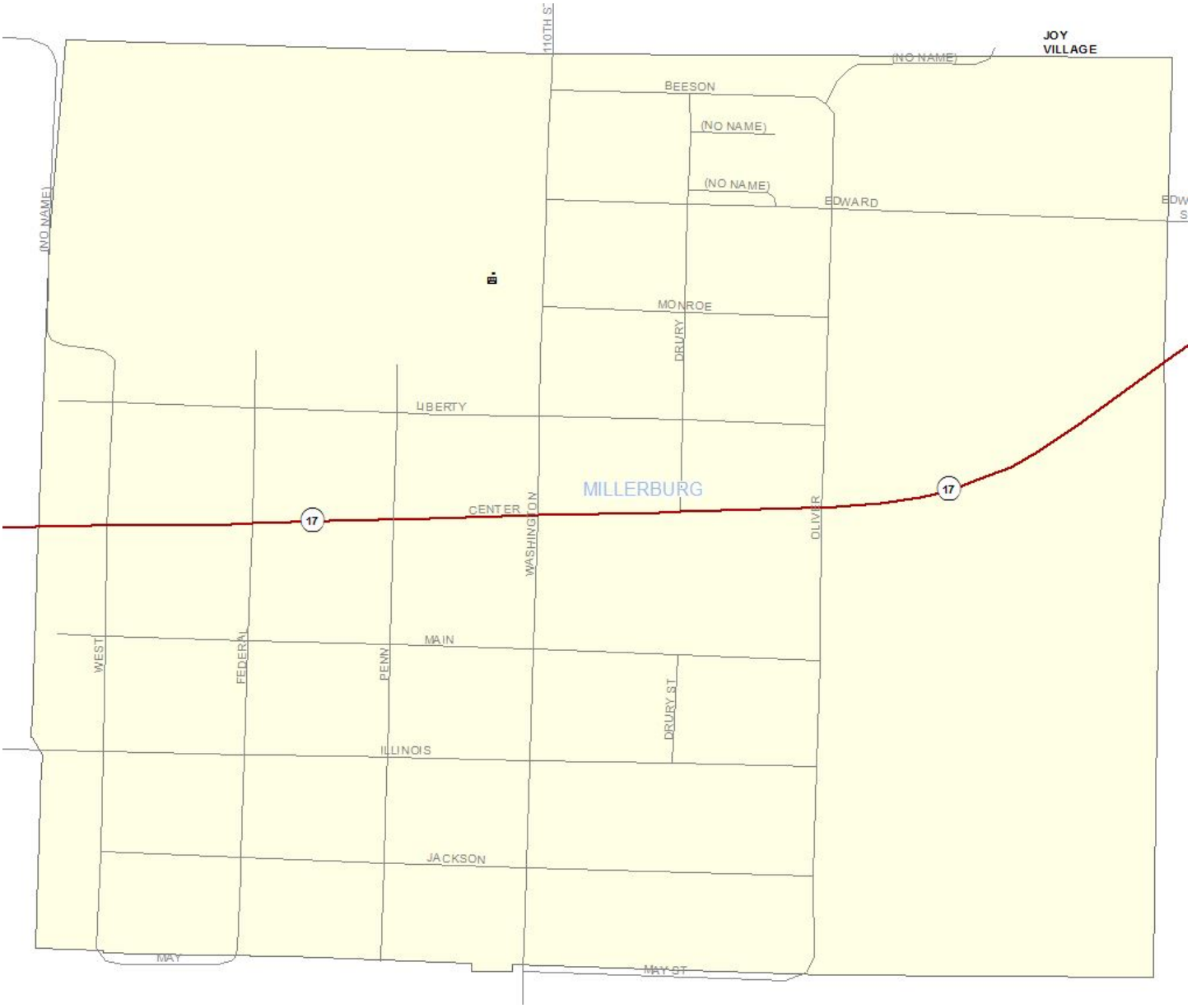
Joy Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	200 W Main St, Joy, IL 61260 309-584-4127	N 41°11'47.55 W 90°52'49.09
Fire Department	Fire Station	200 W Main St, Joy, IL 61260 309-584-4127	N 41°11'47.55 W 90°52'49.09
Post Office	Post Office	202 W Main St, Joy, IL 61260 309-584-4851	N 41°11'47.57 W 90°52'50.07
Water Tower	Water Tower	South of Post Office along the alley No Phone	N 41° 11'46.29" W 90° 52'51.61"



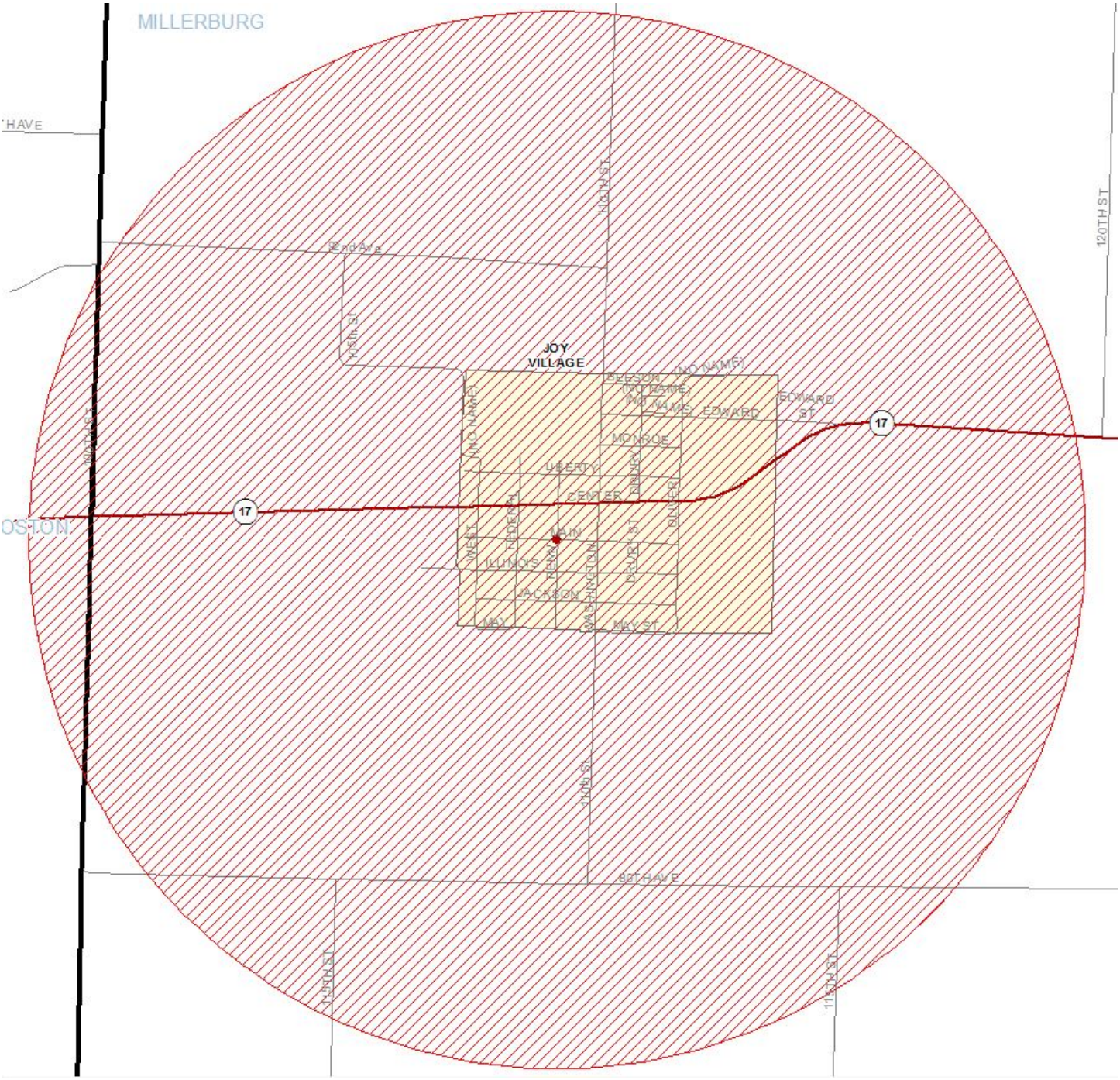
Joy Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Mercer County Jr. High School	School	203 N Washington St, Joy, IL 61260 309-584-4174	N 41°11'56.78 W 90°52'43.13



Joy Storm Sirens

Location	GPS Coordinates	Effective Range
Fire Station 201 W Main Str.	N 41°11'47.55 W 90°52'49.09	Effective range at 70dBC: 5600ft




JOY
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark
Mercer County Junior High
First Baptist Church
(generator) Sinclair
CPS
Blick & Block LP Tank
Chubbas
(generator) Fire
(generator) Boon Docks
Joy State Bank
Anderson's Antiques
Storage Buildings
Liquigrow
Frieden's Custom Truck
Cell Tower
Post Office
City Hall
Water Tower
Jeff's
Joy United Methodist Church
Bewley Funeral Home
Grace Chapel Church
Center St
E Beeson St
Beeson St
E Edwards St
E Monroe St
W Liberty St
Liberty St
E Liberty St
W Main St
E Main St
W Illinois St
E Illinois St
W Jackson St
E Jackson St
W May St
May St
E May St
N Washington St
S Washington St
N Drury St
Drury St
N Oliver St
Oliver St
West St
S West St
N Federal St
S Federal St
Penn St
S Penn St
Boon Docks

Planning Area - Keithsburg

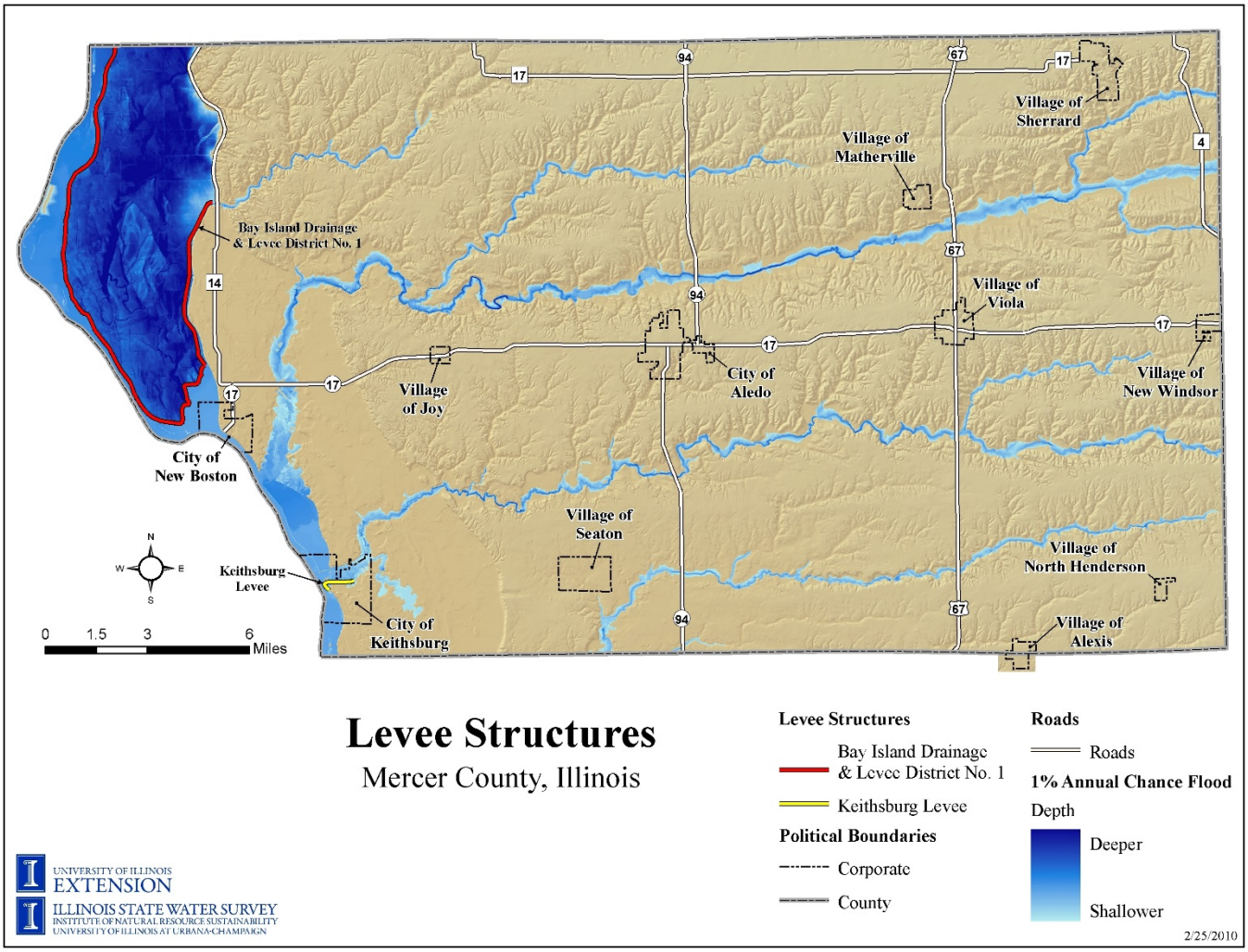
As of the census [6] of 2000, there were 714 people, 278 households, and 199 families residing in the city. The population density was 276.9 people per square mile (106.9/km²). There were 306 housing units at an average density of 118.7 per square mile (45.8/km²). The racial makeup of the city was 98.32% White, 0.28% Native American, and 1.40% from two or more races. Hispanic or Latino of any race were 0.42% of the population.

There were 2780 households out of which 30.2% had children under the age of 18 living with them, 57.2% were married couples living together, 10.1% had a female householder with no husband present, and 28.1% were non-families. 24.5% of all households were made up of individuals and 16.9% had someone living alone who was 65 years of age or older. The average household size was 2.57 and the average family size was 2.96.

In the city the age distribution of the population shows 26.9% under the age of 18, 7.7% from 18 to 24, 26.6% from 25 to 44, 22.1% from 45 to 64, and 16.7% who were 65 years of age or older. The median age was 36 years. For every 100 females there were 91.4 males. For every 100 females age 18 and over, there were 88.4 males.

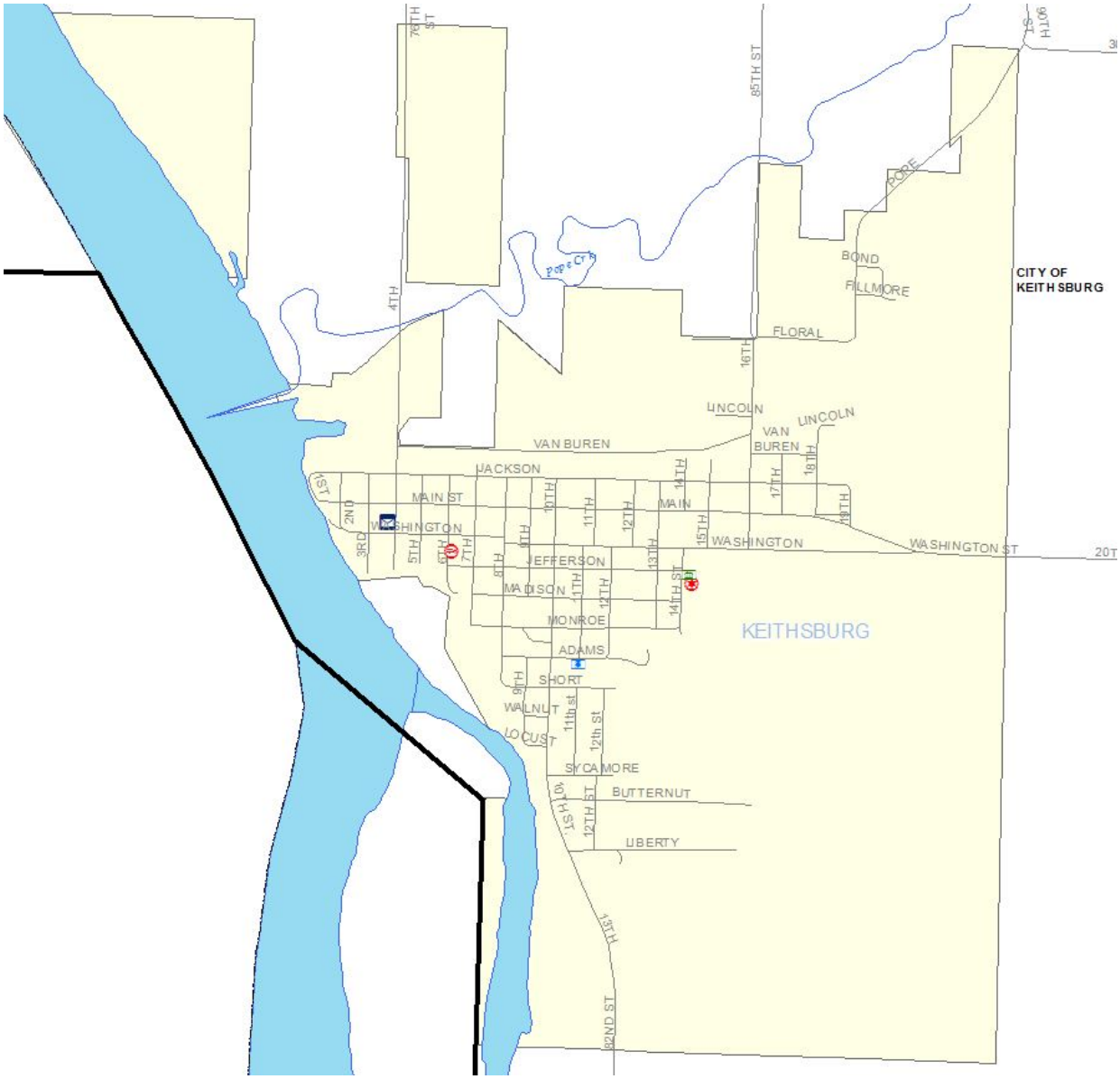
The median income for a household in the city was $32,500, and the median income for a family was $40,781. Males had a median income of $27,000 versus $16,719 for females. The per capita income for the city was $14,008. About 10.3% of families and 14.0% of the population were below the poverty line, including 16.1% of those under age 18 and 4.8% of those age 65 or over.
(www.wikipedia.com)

Levee Structures in Mercer County



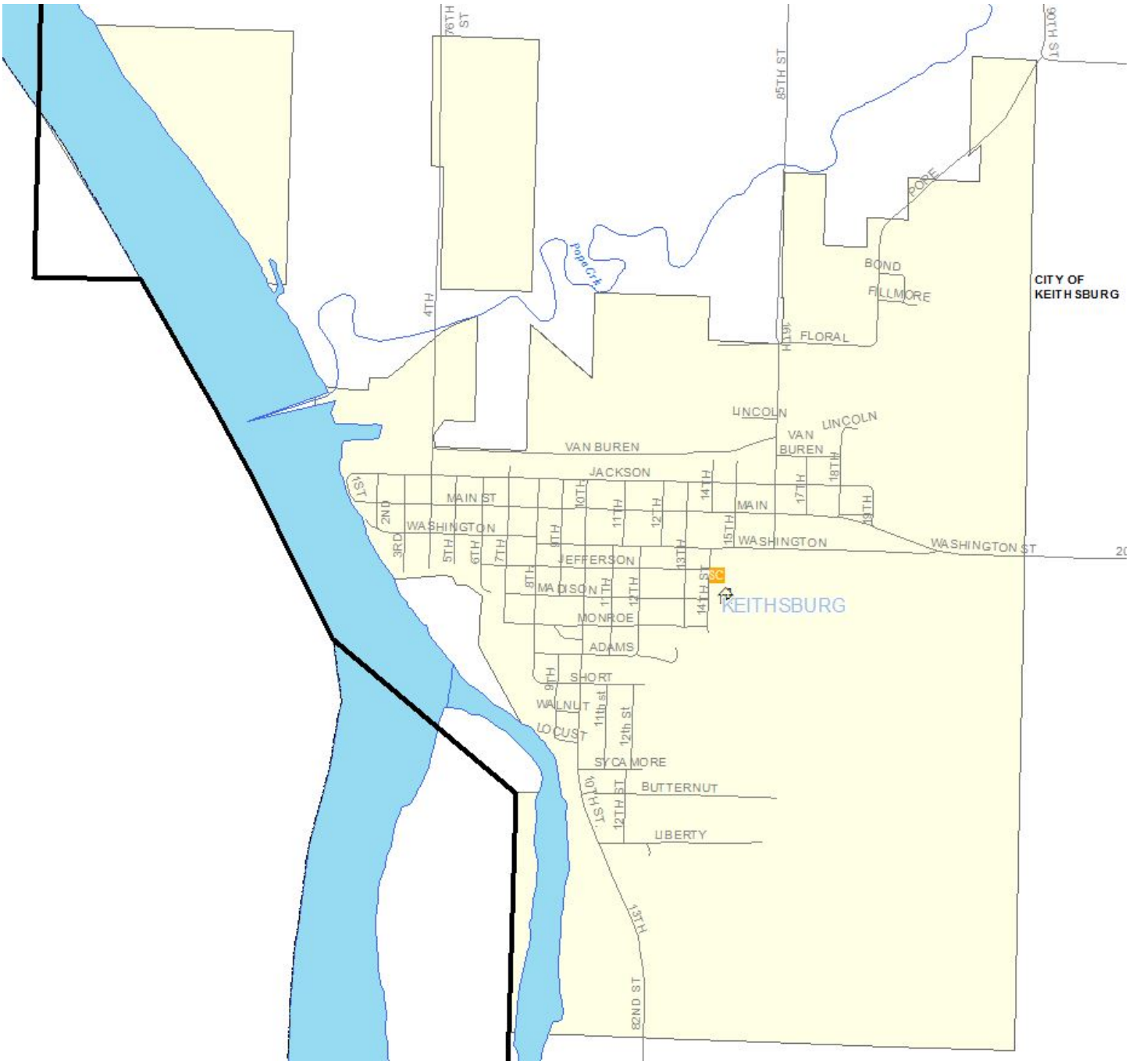
Keithsburg Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	302 S 14th St, Keithsburg, IL 61442 309-374-2311	N 41°6'4.80 W 90°55'55.14
Fire Department	Fire Station	202 S 6th Street, Keithsburg, IL 61442 309-374-2220	N 41°6'5.07 W 90°56'27.06
Police Department	Law Enforcement	302 S 14th St, Keithsburg, IL 61442 309-374-2311	N 41°6'4.80 W 90°55'55.14
Post Office	Post Office	103 S 4th St, Keithsburg, IL 61442 309-374-2261	N 41°6'21.17 W 90°56'33.78
Water Tower	Water Tower	Between Adams and Short St, East of S 10th St. No Phone	N 41° 05'45.60" W 90° 56"09.18"



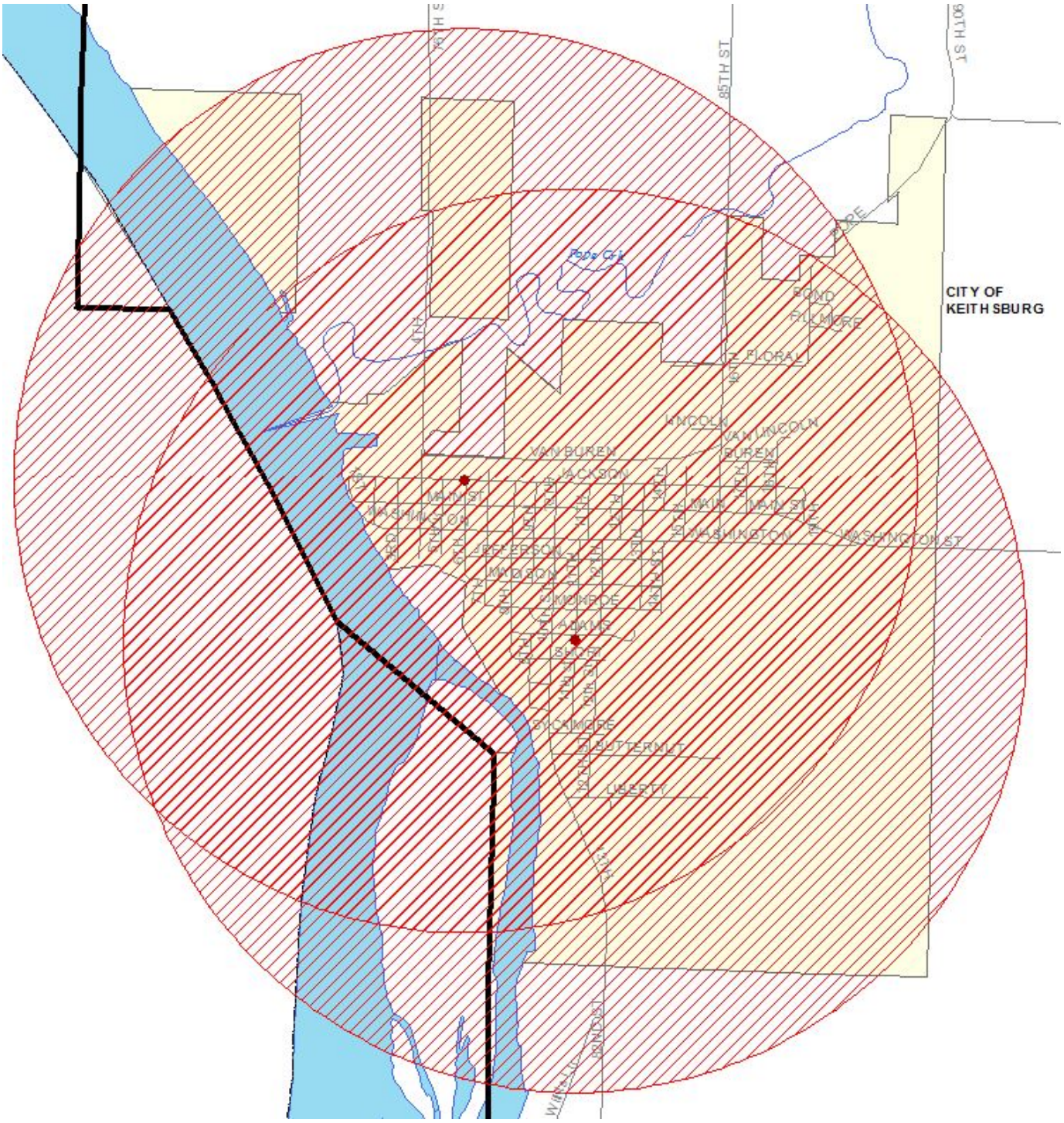
Keithsburg Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Keithsburg Senior Center	Senior Center	302 S 14th St, Keithsburg, IL 61442 309-374-2311	N 41°6'4.80 W 90°55'55.14
Village Green Apartments	Senior Housing	304 S 14 St, Keithsburg, IL 61442 309-374-2247	N 41°6'4.80 W 90°55'55.14



Keithsburg Storm Sirens

Location	GPS Coordinates	Effective Range
Water Tower 11th & Adams	N 41°05'45.6 W 90°56'09.1	Effective range at 70dBC: 5600ft
Fire Station 6th & Jefferson	N 41°6'5.07 W 90°56'27.06	Effective range at 70dBC: 5600ft




KEITHSBURG
Water Treatment
ADM
Ameren Electric Substation
Detailing & More
Willy's Saloon
Ameren Gas Substation
Old Masonic Building
Eagles Nest
Historical Solomon Wolfe House
Casey's
Tweety's
Post Office
Cannon Precision
Frontier Building
Fire Station
Standard Station
Pump House For Water Tower (w/ generator)
Keithsburg Campground (City Owned)
Historical E.J. Glancy House
City Hall
Village Green Apartments
Lazy Acres Lodge
Catholic Church
Water Tower
Cell Tower
Keithsburg Ball Park
St. Mary's Cemetery
Keithsburg Cemetery
Lincoln St
Van Buren St
Jackson St
Main St
Washington St
Jefferson St
Madison St
Monroe St
Adams St
Short St
Sycamore St
Butternut St
Liberty St
20th Ave
4th St
7th St
8th St
9th St
10th St
11th St
12th St
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14th St
15th St
16th St
17th St
18th St
19th St
S 8th St
S 9th St
S 10th St
S 11th St
S 12th St
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark

Planning Area - Matherville

As of the census [5] of 2000, there were 772 people, 290 households, and 216 families residing in the village. The population density was 1,968.7 people per square mile (764.3/km²). There were 301 housing units at an average density of 767.6 per square mile (298.0/km²). The racial makeup of the village was 98.45% White, 0.26% Asian, 0.52% from other races, and 0.78% from two or more races. Hispanic or Latino of any race were 1.04% of the population. - - There were 290 households out of which 45.2% had children under the age of 18 living with them, 55.5% were married couples living together, 15.2% had a female householder with no husband present, and 25.5% were non-families. 21.7% of all households were made up of individuals and 10.7% had someone living alone who was 65 years of age or older. The average household size was 2.66 and the average family size was 3.06. - - In the village the population was spread out with 32.4% under the age of 18, 7.1% from 18 to 24, 31.2% from 25 to 44, 18.3% from 45 to 64, and 11.0% who were 65 years of age or older. The median age was 32 years. For every 100 females there were 90.6 males. For every 100 females age 18 and over, there were 80.6 males. - - The median income for a household in the village was $33,438, and the median income for a family was $39,375. Males had a median income of $37,273 versus $25,179 for females. The per capita income for the village was $14,956. About 14.1% of families and 15.8% of the population were below the poverty line, including 24.5% of those under age 18 and 4.0% of those age 65 or over.

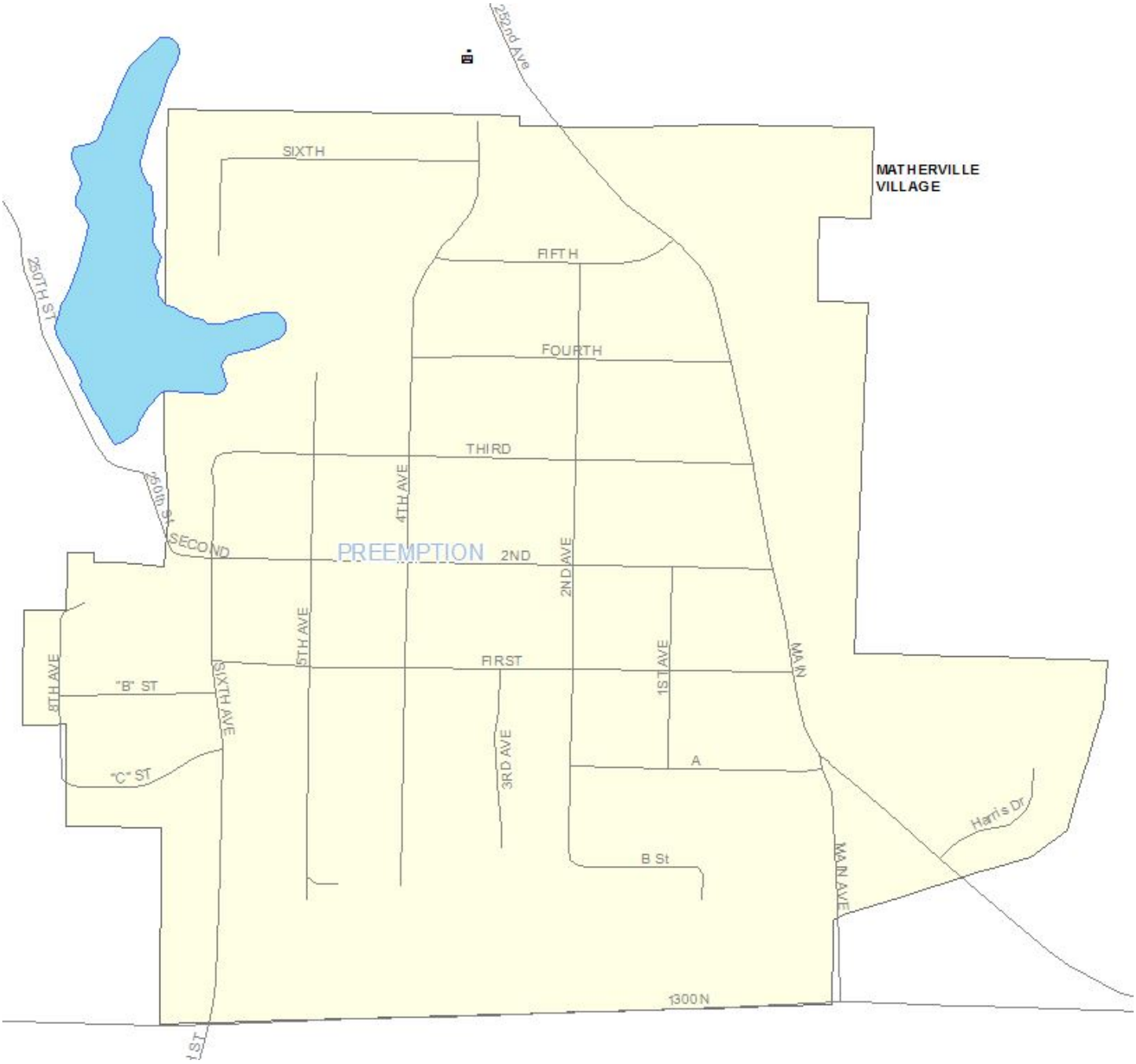
Matherville is part of Sherrard Public Library District. Matherville is served locally by the Library District Bookmobile one day a week with a stop at the Old School Park. *(www.wikipedia.com)*

Matherville Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	500 2nd St, Matherville, IL 61263 309-754-8814	N 41°15'35.00 W 90°36'30.05
Fire Department	Fire Station	500 2nd St, Matherville, IL 61263 309-754-8814	N 41°15'35.00 W 90°36'30.05
Post Office	Post Office	509 2nd St, Matherville, IL 61263 309-754-8938	N 41°15'33.84 W 90°36'33.33
Water Tower	Water Tower	5th Ave, North of 2nd St. No Phone	N 41° 15'36.59" W 90° 36'30.42"

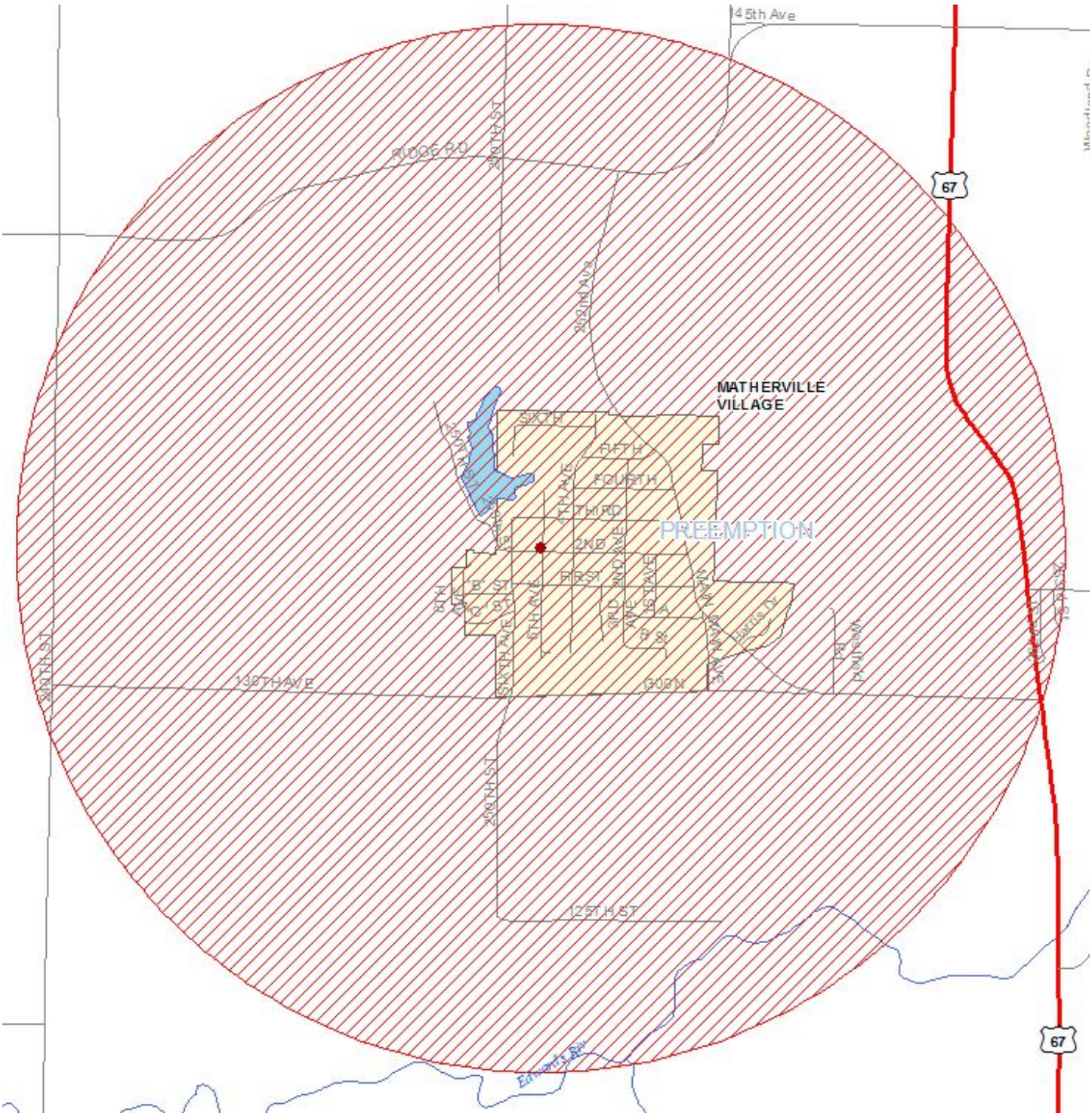
Matherville Vulnerable Populations

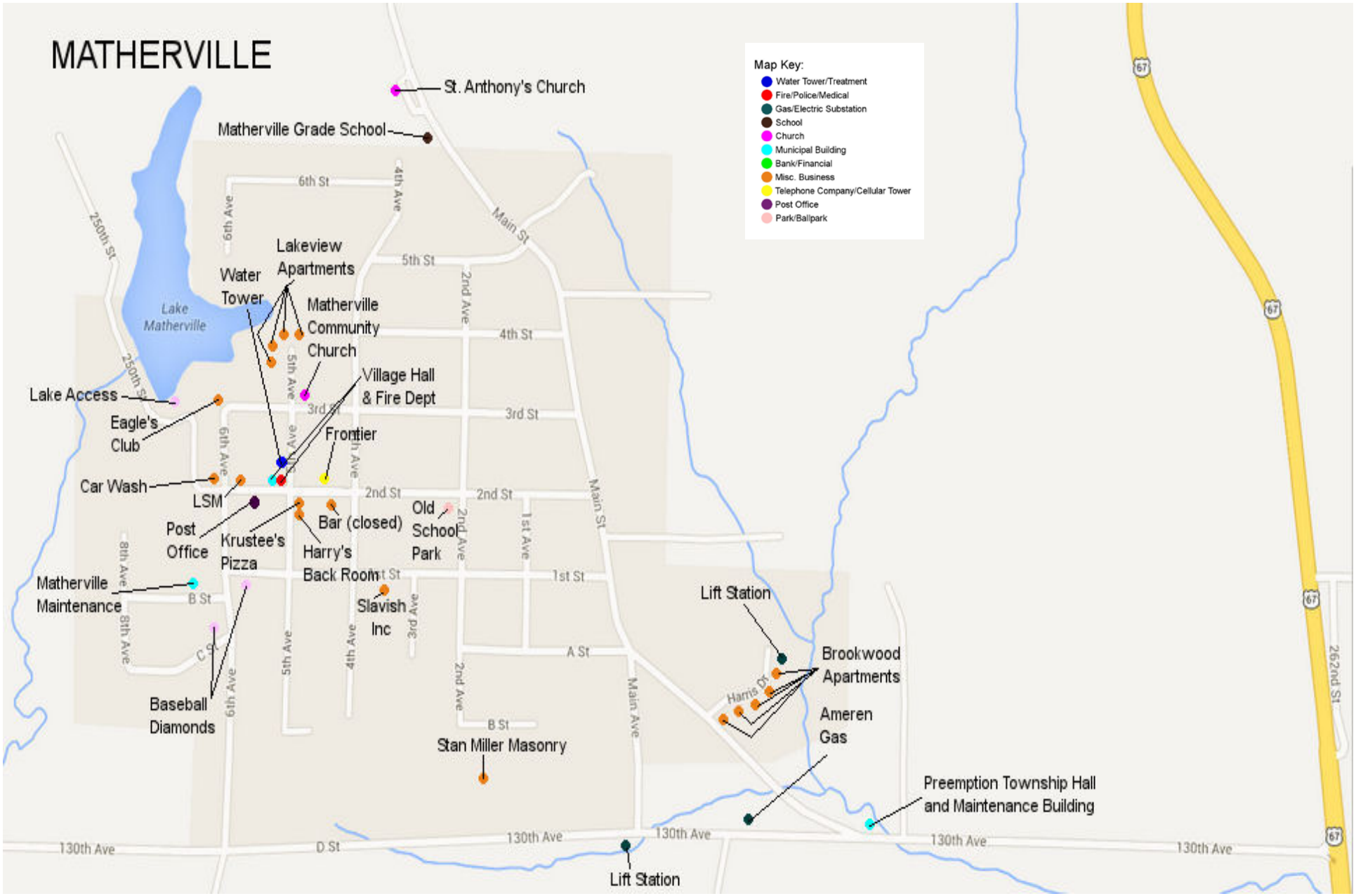
NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Matherville Intermediate	School	1376 252nd St, Matherville, IL 61263 309-754-8244	N 41°15'54.63 W 90°36'20.95



Matherville Storm Siren

Location	GPS Coordinates	Effective Range
City Hall 500 2nd Str.	N 41°25'98.01 W 90°60'83.52	Effective range at 70dBC: 6200ft




MATHERVILLE
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark
St. Anthony's Church
Matherville Grade School
Lake Matherville
Water Tower
Lakeview Apartments
Matherville Community Church
Village Hall & Fire Dept
Frontier
Lake Access
Eagle's Club
Car Wash
LSM
Post Office
Krustee's Pizza
Bar (closed)
Harry's Back Room
Old School Park
Slavish Inc
Matherville Maintenance
Baseball Diamonds
Stan Miller Masonry
Lift Station
Brookwood Apartments
Ameren Gas
Preemption Township Hall and Maintenance Building
Lift Station
6th St
5th St
4th St
3rd St
2nd St
1st St
A St
B St
C St
D St
130th Ave
262nd St
Main St
Main Ave
2nd Ave
3rd Ave
4th Ave
5th Ave
6th Ave
8th Ave
250th St
Harris Dr
67

Planning Area - New Boston

As of the census [7] of 2000, there were 632 people, 269 households, and 177 families residing in the city. The population density was 672.6 people per square mile (259.6/km²). There were 317 housing units at an average density of 337.4 per square mile (130.2/km²). The racial makeup of the city was 99.53% White, 0.16% African-American, 0.16% Native American, 0.16% from other races. Hispanic or Latino of any race were 0.32% of the population.

There were 269 households out of which 28.3% had children under the age of 18 living with them, 53.2% were married couples living together, 8.2% had a female householder with no husband present, and 34.2% were non-families. 29.0% of all households were made up of individuals and 12.3% had someone living alone who was 65 years of age or older. The average household size was 2.35 and the average family size was 2.92.

In the city the population was spread out with 23.1% under the age of 18, 9.3% from 18 to 24, 25.9% from 25 to 44, 24.5% from 45 to 64, and 17.1% who were 65 years of age or older. The median age was 40 years. For every 100 females there were 103.2 males. For every 100 females age 18 and over, there were 102.5 males.

The median income for a household in the city was $29,231, and the median income for a family was $36,875. Males had a median income of $32,361 versus $17,917 for females. The per capita income for the city was $15,593. About 6.4% of families and 11.2% of the population were below the poverty line, including 15.9% of those under age 18 and 11.7% of those age 65 or over. *(www.wikipedia.com)*

New Boston Essential Facilities

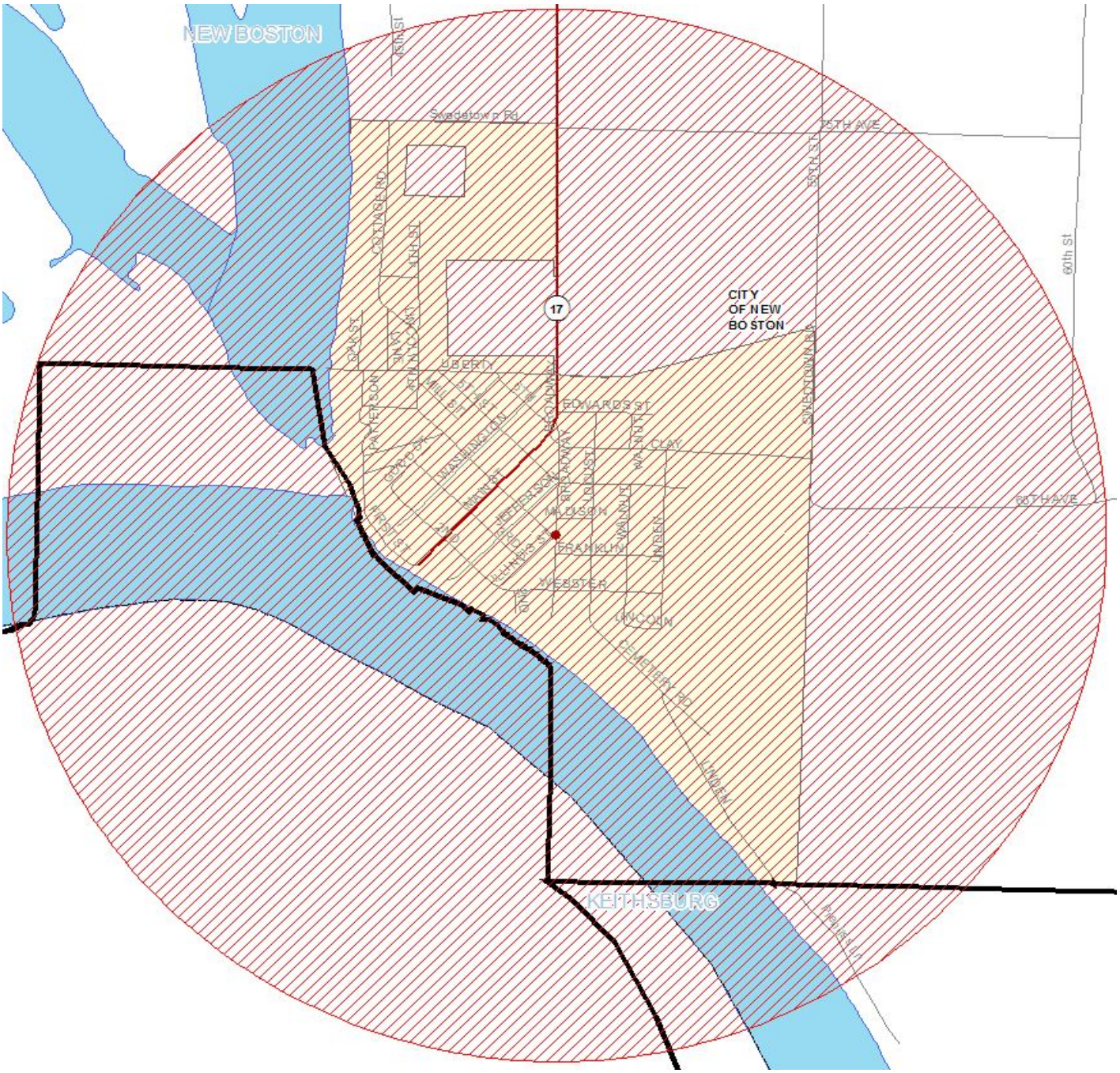
NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	405 Main St, New Boston, IL 309-587-8181	N 41°10'11.27 W 90°59'50.96
Fire Department	Fire Station	602 Broadway St, New Boston, IL 61272 309-587-8500	N 41°10'5.51 W 90°59'43.82
Police Department	Law Enforcement	405 Main St, New Boston, IL 309-587-8292	N 41°10'11.27 W 90°59'50.96
Post Office	Post Office	505 Main St, New Boston, IL 61272 309-587-8411	N 41°10'11.27 W 90°59'50.97
Water Tower	Water Tower	East side of Hwy 17, where Liberty St intersects No Phone	N 41° 10'21.58" W 90° 59"39.57"

New Boston Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
New Boston Elementary	School	301 Jefferson St, New Boston, IL 61272 309-587-8141	N 41°10'2.25 W 90°59'55.22

New Boston Storm Sirens

Location	GPS Coordinates	Effective Range
Fire Station 602 Broadway	N 41°10'5.51 W 90°59'43.82	Effective range at 70dBC: 5600ft




New Boston
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark
Ameren Electric Substation
Water Tower & Treatment
Bay C Store
Fire Station
New Boston Campground (City Owned)
City Hall
Car Wash
Mailboxes
Joy Bank
New Boston Grade School
Frontier
Methodist Church
Community Center
The Barn Hair Salon
Deeters
New Boston Museum
Cargill
Miller Time
New Boston Family Apartments
New Boston Cemetery
Mississippi River
North St
Main St
Liberty St
Roberts Rd
Edwards St
Clay St
Jefferson St
Madison St
Franklin St
Webster St
Lincoln St
Cemetery Rd
Prentiss Ln
Locust St
Broadway St
Walnut St
Linden St
Illinois St
Washington St
Good St
Mill St
Railroad St
Patterson St
Lincoln Ln
Oak St
B St
1st St
2nd St
3rd St
4th St
5th St
6th St

Planning Area - New Windsor

As of the census [5] of 2000, there were 720 people, 307 households, and 217 families residing in the village. The population density was 1,628.5 people per square mile (631.8/km²). There were 335 housing units at an average density of 757.7 per square mile (294.0/km²). The racial makeup of the village was 98.75% White, 0.28% Native American, 0.28% Asian, and 0.69% from two or more races. Hispanic or Latino of any race were 2.50% of the population.

There were 307 households out of which 28.7% had children under the age of 18 living with them, 59.6% were married couples living together, 6.8% had a female householder with no husband present, and 29.3% were non-families. 28.0% of all households were made up of individuals and 18.9% had someone living alone who was 65 years of age or older. The average household size was 2.35 and the average family size was 2.82.

In the village the population was spread out with 22.1% under the age of 18, 8.9% from 18 to 24, 24.4% from 25 to 44, 25.4% from 45 to 64, and 19.2% who were 65 years of age or older. The median age was 41 years. For every 100 females there were 97.3 males. For every 100 females age 18 and over, there were 92.1 males.

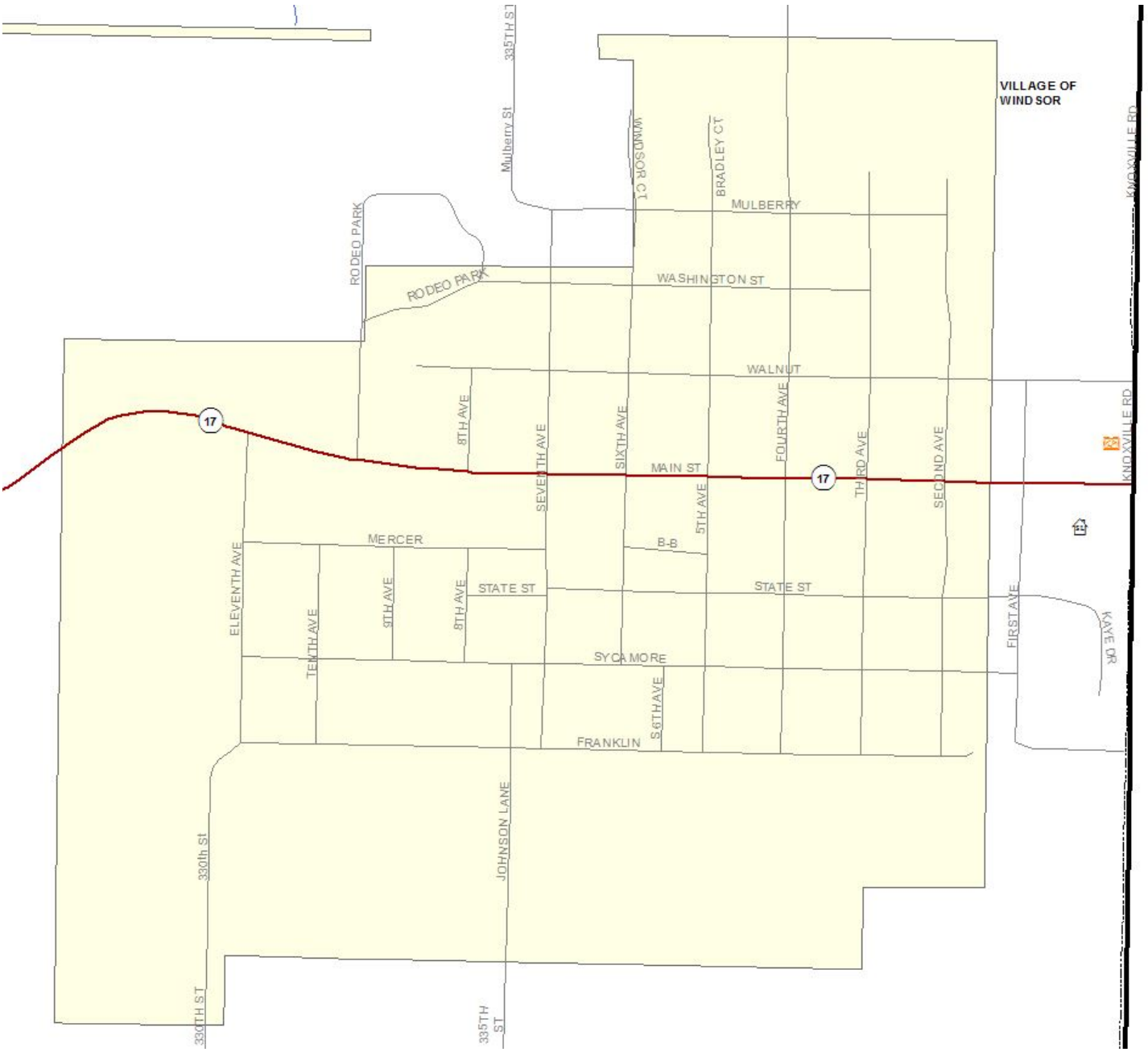
The median income for a household in the village was $37,500, and the median income for a family was $41,094. Males had a median income of $30,556 versus $18,594 for females. The per capita income for the village was $19,811. About 6.1% of families and 7.8% of the population were below the poverty line, including 7.0% of those under age 18 and 10.3% of those age 65 or over.
(www.wikipedia.com)

New Windsor Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	125 N 3rd Ave, New Windsor, IL 61465 309-667-2344	N 41°12'16.51 W 90°26'26.60
Police Department	Law Enforcement	125 N 3rd Ave, New Windsor, IL 61465 309-667-2601	N 41°12'16.51 W 90°26'26.60
Post Office	Post Office	315 Main St, New Windsor, IL 61465 309-667-2219	N 41°12'7.92 W 90°26'25.96
Rivoli Fire Department	Fire Station	414 Main St, New Windsor, IL 61465 309-667-2262	N 41°12'8.64 W 90°26'29.80
Water Tower	Water Tower	N 3rd Avenue, next to City Hall No Phone	N 41° 12'10.92" W 90° 26'27.98"

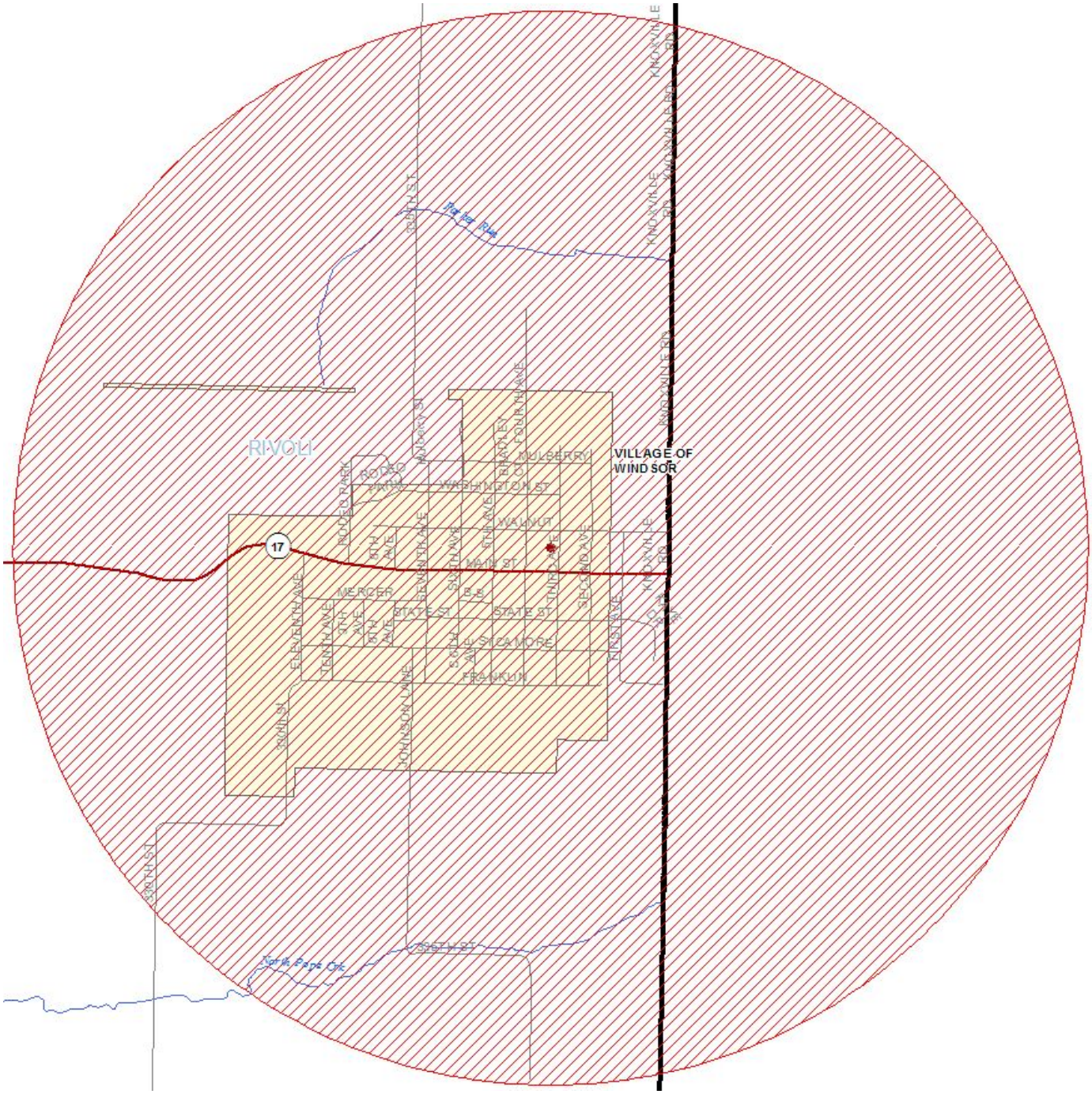
New Windsor Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Cozy Haven Homes	Senior Living	131 Main St, New Windsor, IL 61465 309-667-2557	N 41°12'8.35 W 90°26'12.01
Time For Tots	Daycare	121 Meridian St. New Windsor, IL 61465 309-667-2211 (within the Lutheran Church)	N 41°12'12.67 W 90°26'11.81



New Windsor Storm Sirens

Location	GPS Coordinates	Effective Range
Behind City Hall 125 N 3rd Ave	N 41°20'30.59 W 90°44'10.82	Effective range at 70dBC: 5600ft




New Windsor
Rodeo Grounds
Ball Park
Windsor Real Estate Properties
Presbyterian Church USA
Water Tower
City Hall
Ameren Gas
Car Wash
Farmers State Bank
Time For Tots Preschool
Post Office
Calvary Lutheran Church
New Windsor General Store/Gas
KJ's Cafe
Dan's Pub
Compton Accounting
Beyond the Garden Gate Gifts
Apartments
Aamco
Depot Park
Dick's Small Engine
Tony's Body Shop
Cozy Haven Senior Citizen Community
Township Garage
Township Hall
Windsor Depot
New Windsor Telphone Co
Amer. Legion
Insurance Exchange Agency
Rivoli Fire Department
Library
New Windsor Pizza & Sub
New Windsor Village Market
Adams Hardware
Mulberry St
Washington St
Walnut St
Main St
Mercer St
State St
Sycamore St
Franklin St
Adams St
Knoxville Rd
Rodeo Park Rd
Johnson Ln
330th St
Kaye Dr
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark

Planning Area - North Henderson

As of the census [5] of 2000, there were 187 people, 74 households, and 52 families residing in the village. The population density was 832.3 people per square mile (328.2/km²). There were 77 housing units at an average density of 342.7 per square mile (135.1/km²). The racial makeup of the village was 100.00% White. Hispanic or Latino of any race were 1.07% of the population.

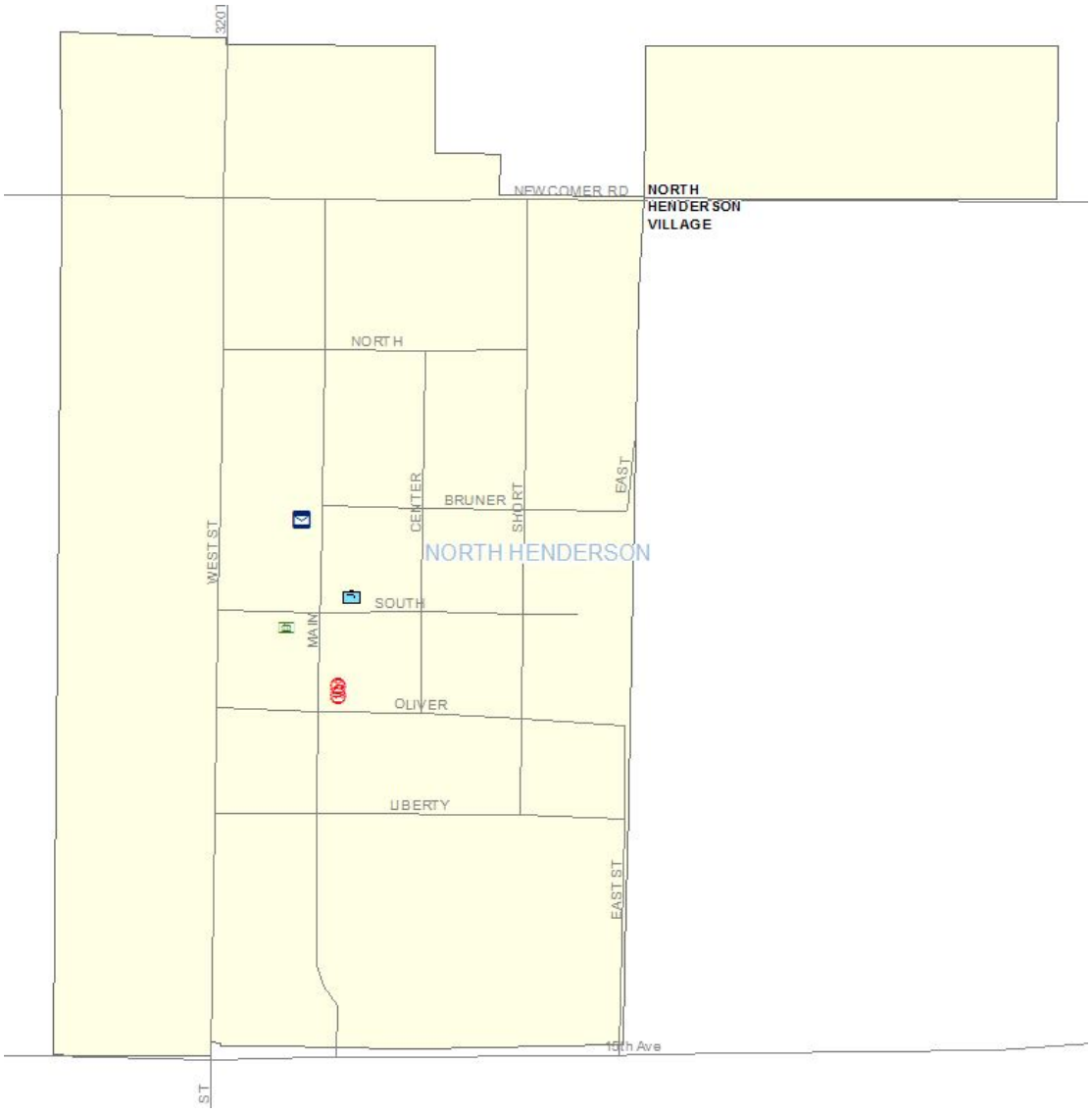
There were 74 households out of which 31.1% had children under the age of 18 living with them, 56.8% were married couples living together, 13.5% had a female householder with no husband present, and 28.4% were non-families. 27.0% of all households were made up of individuals and 10.8% had someone living alone who was 65 years of age or older. The average household size was 2.53 and the average family size was 3.04.

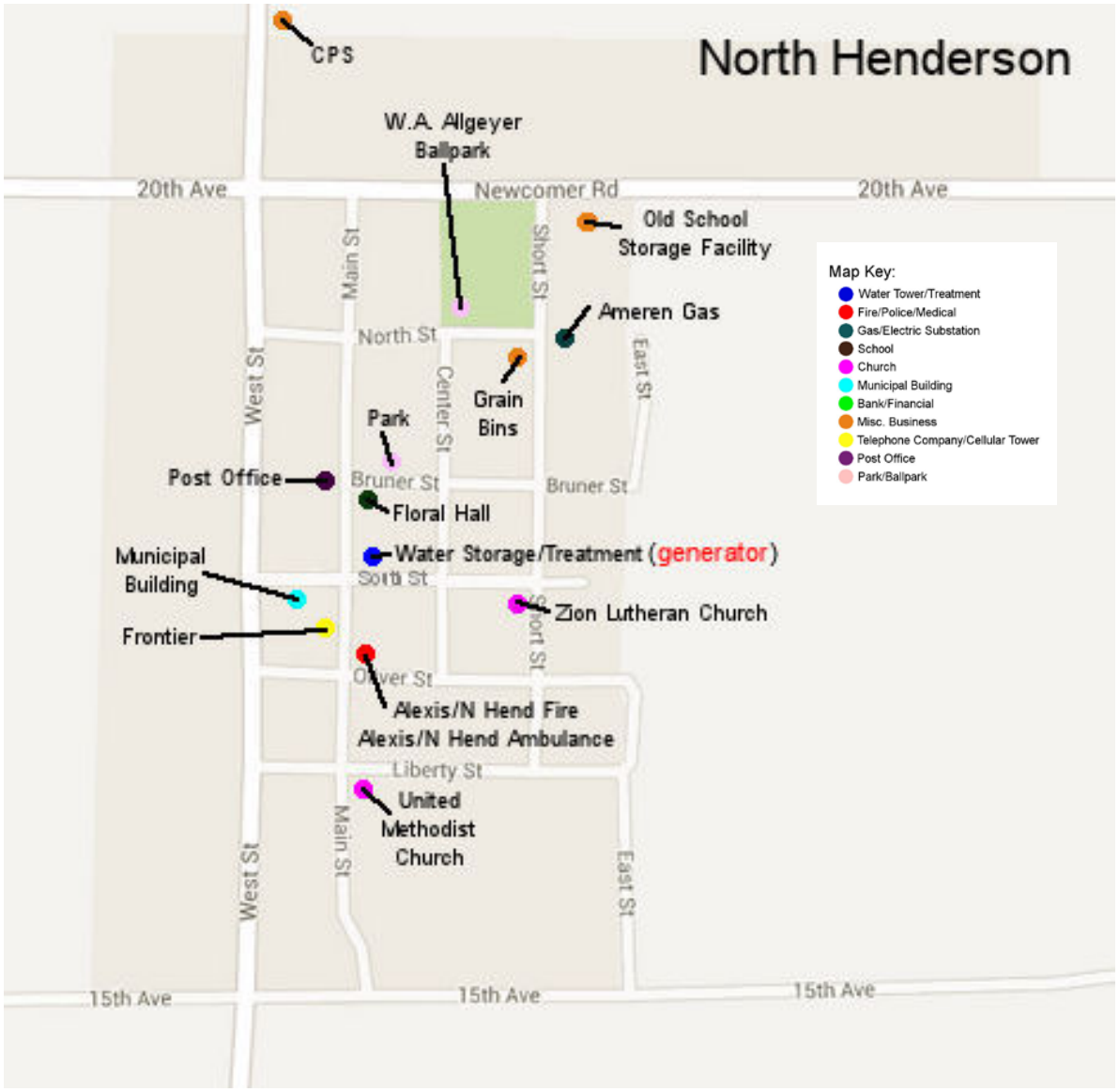
In the village the population was spread out with 24.1% under the age of 18, 6.4% from 18 to 24, 33.2% from 25 to 44, 19.8% from 45 to 64, and 16.6% who were 65 years of age or older. The median age was 36 years. For every 100 females there were 110.1 males. For every 100 females age 18 and over, there were 100.0 males.

The median income for a household in the village was $35,500, and the median income for a family was $42,500. Males had a median income of $28,958 versus $25,625 for females. The per capita income for the village was $16,292. About 5.6% of families and 8.7% of the population were below the poverty line, including 14.9% of those under the age of eighteen and 15.6% of those sixty five or over. *(www.wikipedia.com)*

North Henderson Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Alexis-North Henderson Volunteer Ambulance Service	Ambulance Service	Corner of Main Street & Oliver Street, North Henderson, IL (1 ambulance available at this location)	N 41° 05'19.41" W 90° 28'31.60"
City Hall	City Hall	South St, North Henderson, IL 61466 No phone	N 41°05'21.60" W 90°28'33.72"
Fire Department	Fire Station	Corner of Main Street & Oliver Street, North Henderson, IL	N 41° 05'19.41" W 90° 28'31.60"
Post Office	Post Office	401 Main St, North Henderson, IL 61466 309-464-5130	N 41°1'30.41 W 90°21'18.17
Water Tower/Treatment	Water	332 South St, North Henderson, IL 61466 No phone	N 41° 05'22.41" W 90° 28'31.26"




North Henderson
CPS
W.A. Algeyer Ballpark
20th Ave
Newcomer Rd
20th Ave
Old School Storage Facility
Main St
Short St
Ameren Gas
North St
West St
Center St
East St
Grain Bins
Park
Post Office
Bruner St
Bruner St
Floral Hall
Municipal Building
Water Storage/Treatment (generator)
South St
Zion Lutheran Church
Frontier
Short St
Oliver St
Alexis/N Hend Fire
Alexis/N Hend Ambulance
Liberty St
United Methodist Church
Main St
West St
East St
15th Ave
15th Ave
15th Ave
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark

Planning Area - Seaton

As of the census [5] of 2000, there were 242 people, 88 households, and 69 families residing in the village. The population density was 154.3 people per square mile (59.5/km²). There were 94 housing units at an average density of 59.9 per square mile (23.1/km²). The racial makeup of the village was 97.11% White and 2.89% African American.

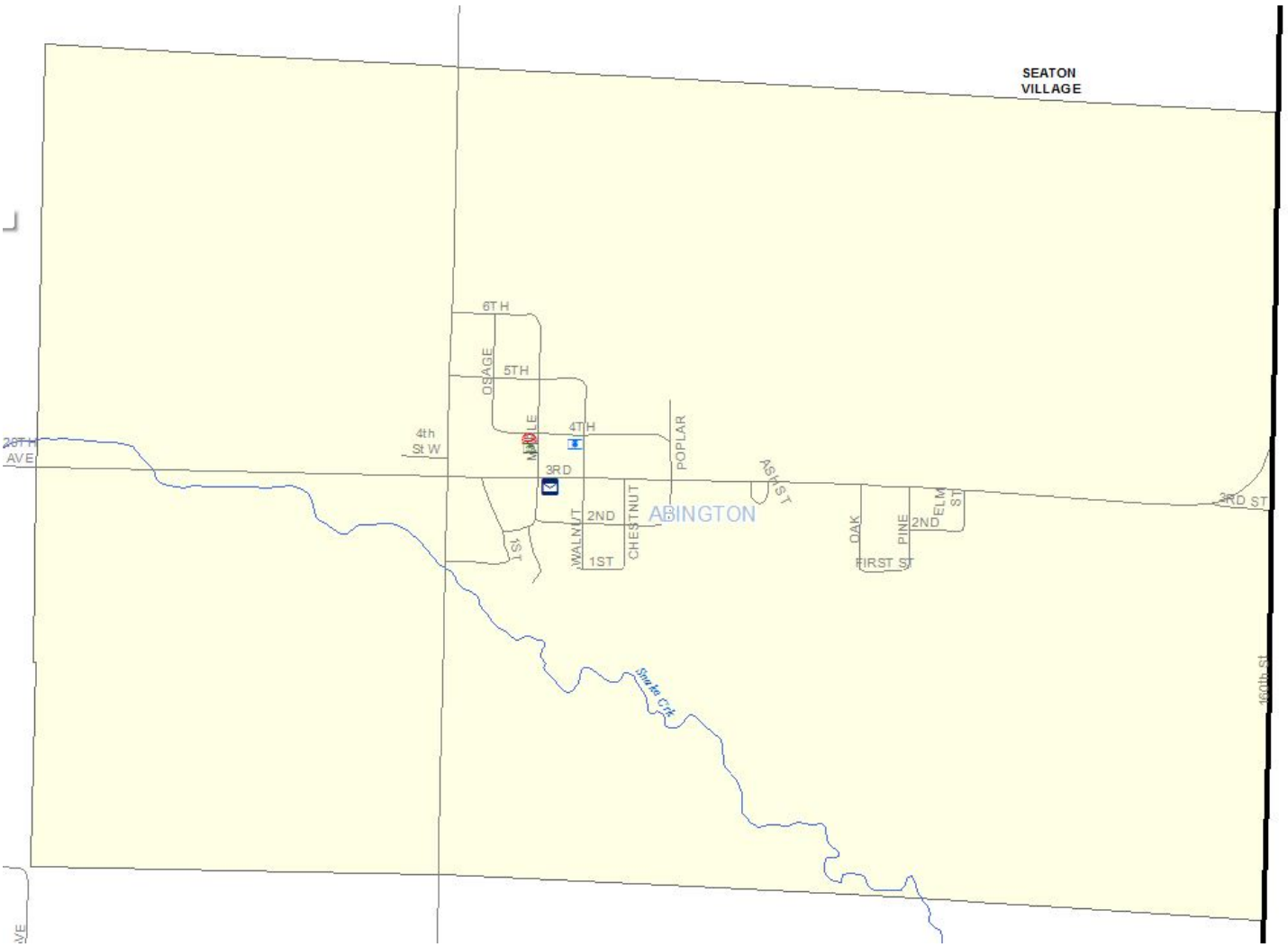
There were 88 households out of which 34.1% had children under the age of 18 living with them, 67.0% were married couples living together, 9.1% had a female householder with no husband present, and 20.5% were non-families. 15.9% of all households were made up of individuals and 6.8% had someone living alone who was 65 years of age or older. The average household size was 2.75 and the average family size was 3.11.

In the village the population was spread out with 28.9% under the age of 18, 4.1% from 18 to 24, 29.3% from 25 to 44, 21.5% from 45 to 64, and 16.1% who were 65 years of age or older. The median age was 36 years. For every 100 females there were 93.6 males. For every 100 females age 18 and over, there were 91.1 males.

The median income for a household in the village was $45,694, and the median income for a family was $46,389. Males had a median income of $38,750 versus $15,417 for females. The per capita income for the village was $35,832. About 4.1% of families and 2.7% of the population were below the poverty line, including none of those under the age of eighteen and 10.7% of those sixty five or over. *(www.wikipedia.com)*

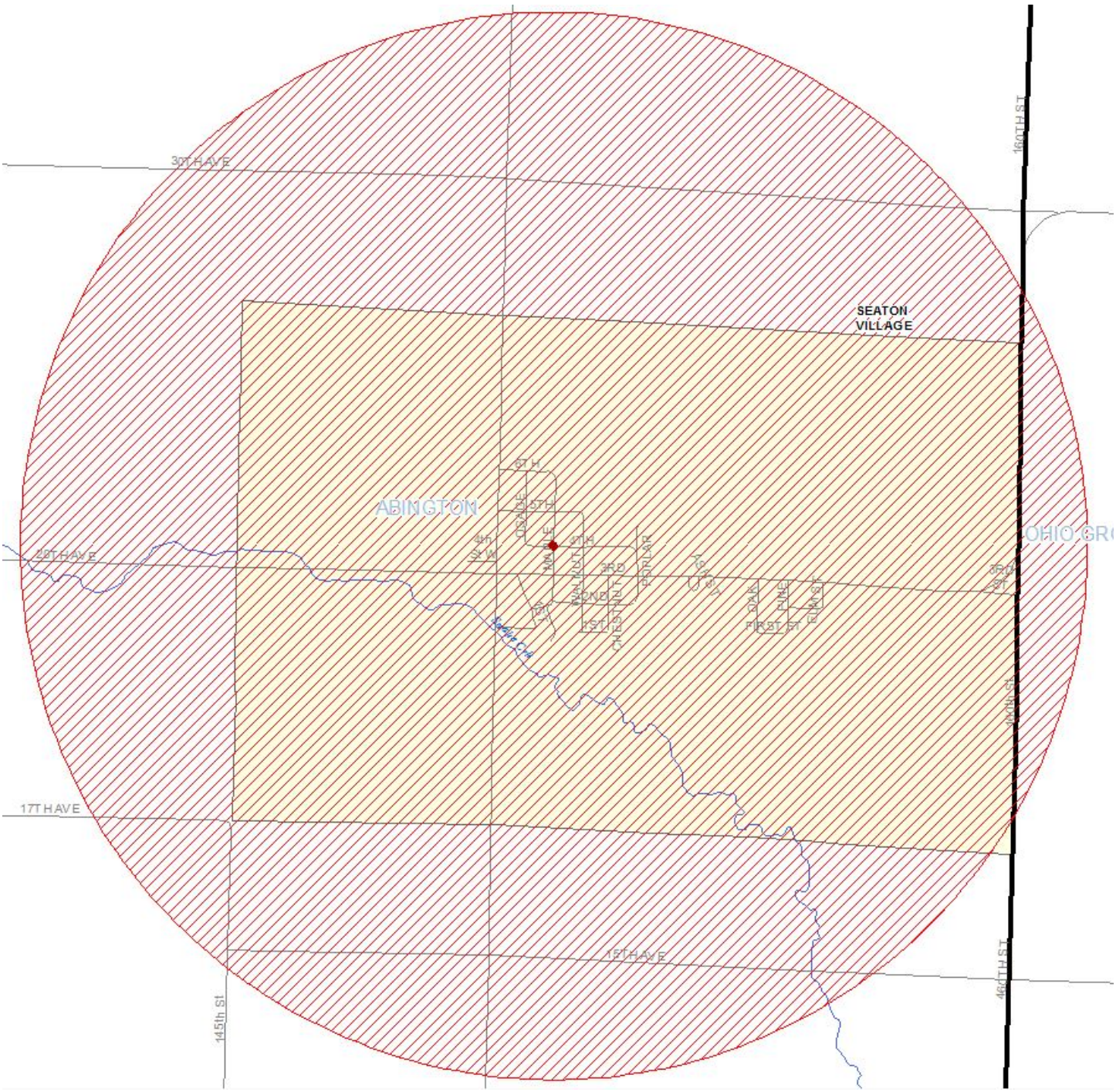
Seaton Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	201 Maple St, Seaton, IL 61476 309-586-5341	N 41°6'6.36 W -90°48'6.971
Fire Department	Fire Station	317 Maple St, Seaton, IL 61476 No phone	N 41°6'11.473 W 90°48'6.927
Post Office	Post Office	304 3 St, Seaton, IL 61476 309-586-4611	N 41°6'8.42 W 90°48'2.86
Water Tower	Water Tower	On Walnut St, between 3rd and 4th St No Phone	N 41° 06'10.61" W 90° 48'03.62"



Seaton Storm Siren

Location	GPS Coordinates	Effective Range
Fire Station 317 Maple Str.	N 41°06'11.47 W 90°48'6.93	Effective range at 70dBC: 5600ft




SEATON
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark
Center Presbyterian Church
Fire Station
Freedom Bank
Water Tower (generator)
Post Office
Seaton Library & Village Hall
Frontier
Wheeler's Cafe
East Pump House
6th St
5th St
4th St
3rd St
2nd St
1st St
20th Ave
4th St W
Hickory St
Seaton Rd
Osage St
Maple St
Walnut St
Poplar St
Chestnut St
Ash St
Oak St
Pine St
Elm St

Planning Area - Sherrard

As of the census [6] of 2000, there were 694 people, 271 households, and 201 families residing in the village. The population density was 1,658.2 people per square mile (638.0/km²). There were 276 housing units at an average density of 659.5 per square mile (253.7/km²). The racial makeup of the village was 98.27% White, 0.14% African American, 0.43% Native American, 0.14% Asian, 0.14% from other races, and 0.86% from two or more races. Hispanic or Latino of any race were 1.59% of the population.

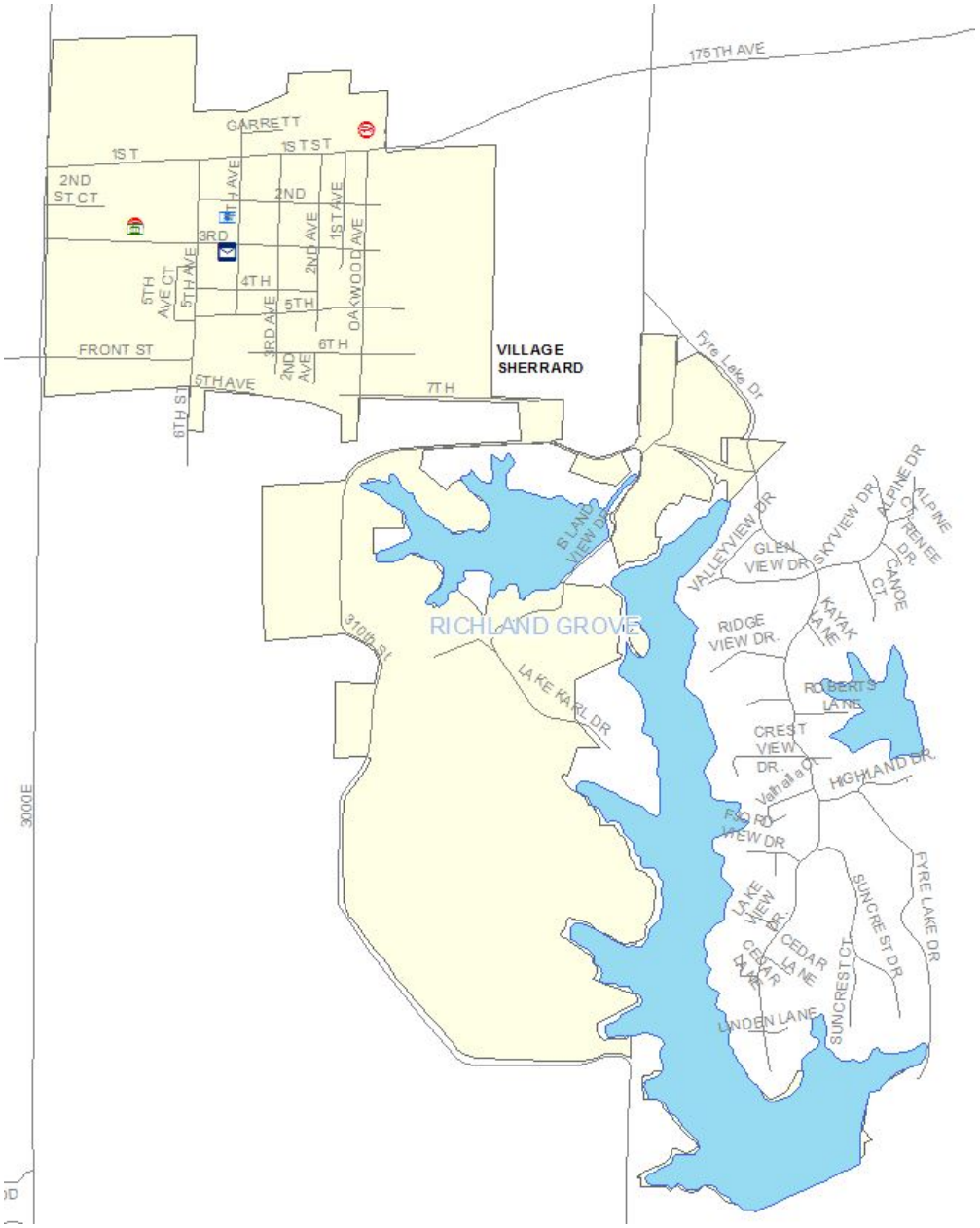
There were 271 households out of which 34.3% had children under the age of 18 living with them, 60.9% were married couples living together, 11.4% had a female householder with no husband present, and 25.5% were non-families. 22.9% of all households were made up of individuals and 11.4% had someone living alone who was 65 years of age or older. The average household size was 2.56 and the average family size was 2.99.

In the village the population was spread out with 26.1% under the age of 18, 9.2% from 18 to 24, 29.5% from 25 to 44, 22.5% from 45 to 64, and 12.7% who were 65 years of age or older. The median age was 37 years. For every 100 females there were 91.7 males. For every 100 females age 18 and over, there were 92.9 males.

The median income for a household in the village was $47,171, and the median income for a family was $52,604. Males had a median income of $35,455 versus $21,304 for females. The per capita income for the village was $18,967. About 4.6% of families and 5.0% of the population were below the poverty line, including 10.6% of those under age 18 and 4.2% of those age 65 or over.
(www.wikipedia.com)

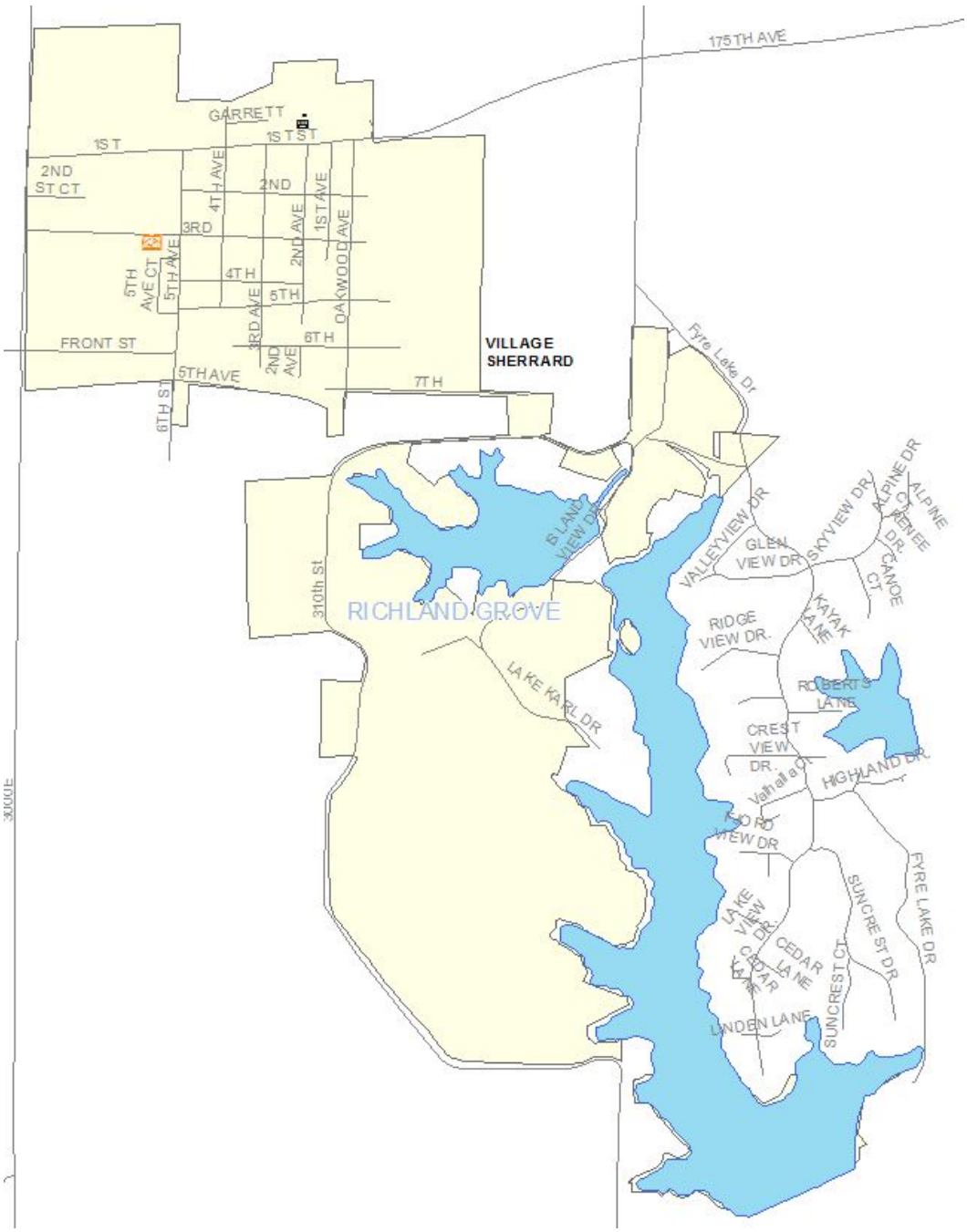
Sherrard Essential Facilities

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	517 3rd St, Sherrard, IL 61281 309-593-2415	N 41°19'8.59 W 90°30'28.64
Fire Department	Fire Station	101 E 1st St, Sherrard, IL 61281 309-593-2412	N 41°19'15.09 W 90°30'43.88
Police Station	Police Station	517 3rd St, Sherrard, IL 61281 309-593-2512	N 41°19'8.59 W 90°30'28.62
Post Office	Post Office	402 3rd Street, Sherrard, IL 61281 309-593-2515	N 41°19'8.29 W 90°30'21.72
Water Tower	Water Tower	4th Ave, Between 2nd and 3rd St No Phone	N 41° 19'10.65" W 90° 30'22.74"



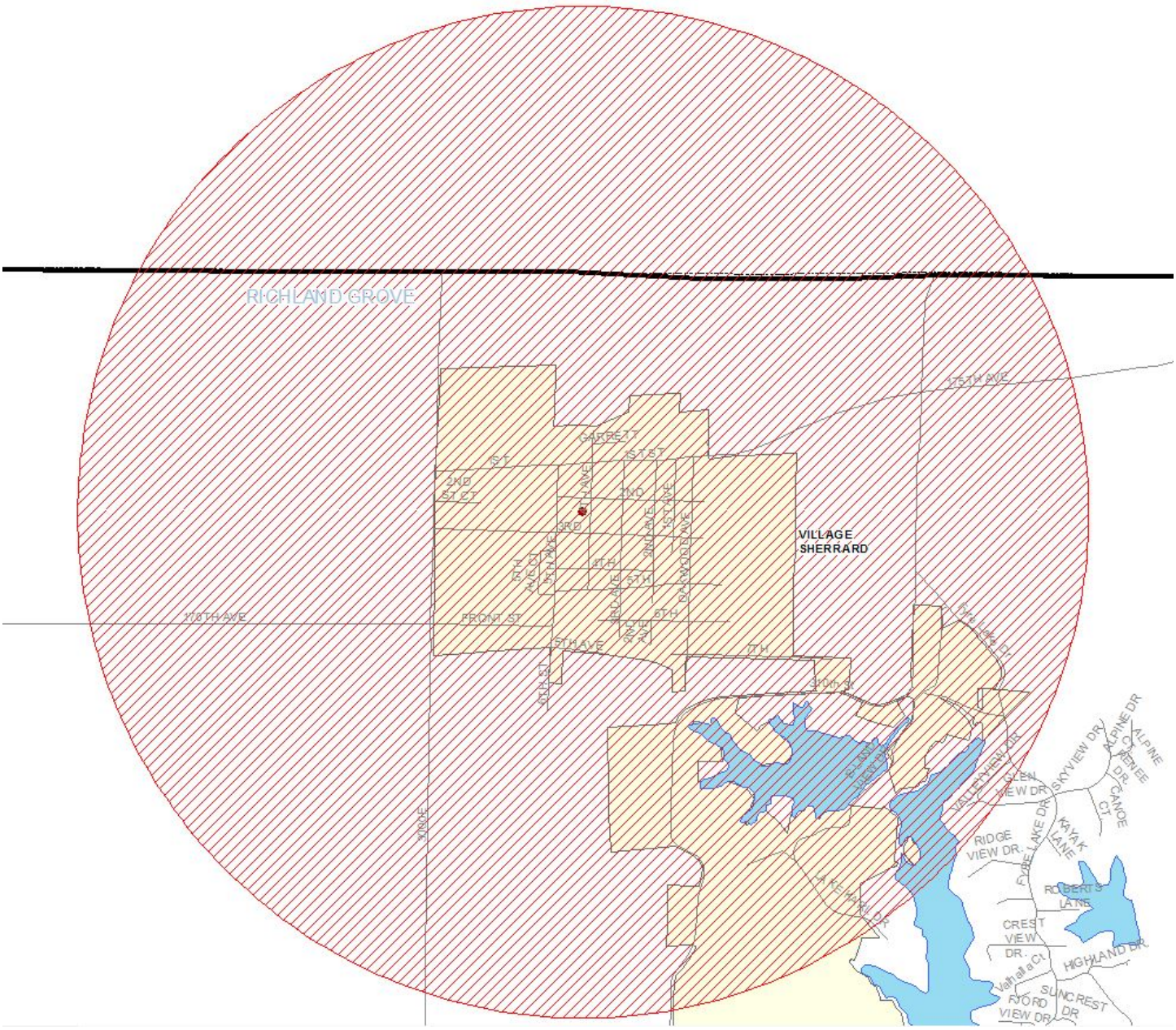
Sherrard Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Sherrard Elementary	School	209 1st St, Sherrard, IL 61281 309-593-2917	N 41°19'15.37 W 90°30'37.69
Sherrard High School	School	4701 176th Ave, Sherrard, IL 61281 309-593-2175	N 41°20'28.30 W 90°31'52.23
Sherrard Junior High School	School	4701 176th Ave, Sherrard, IL 61281 309-593-2135	N 41°20'28.30 W 90°31'52.23
Tiger Tales	Daycare	504 3rd St, Sherrard, IL 61281 309-593-4039	N 41°19'8.45 W 90°30'28.26



Sherrard Storm Siren

Location	GPS Coordinates	Effective Range
Water Tower 203 4th Ave.	N 41°31'96.21 W 90°50'62.55	Effective range at 70dBC: 5600ft




SHERRARD
First Community Bank
Sherrard Elementary School
Fire
7 Eleven
Knoxville Rd
175th Ave
Co Rd 3100 E
Water Tower
Residence Day Care
E 1st St
Library
Police/Water Dept
Car Wash
Oscars
Frontier
Office Bar
Community Presbyterian Church
Sherrard Machine & Magnet
Sherrard Schools Unit Office
City Hall
2nd St Ct
300th St
5th Ave
2nd St
1st Ave
3rd St
Tiger's Den
Tiger Tales
Inspired
Park
Post Office
Sherrard Chiropractic
5th Ave Ct
4th St
Beau Belle
Hair Salon
E 5th St
2nd Ave
Ameren Gas
E 6th St
6th St
Ave
4th Ave
6th St
E 7th St
Village Treatment Plant
310th St
Fyre Lake Dr
Township Rd
Island View Dr
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark

Planning Area - Viola

As of the census [5] of 2000, there were 956 people, 383 households, and 274 families residing in the village. The population density was 1,155.8 people per square mile (444.7/km²). There were 401 housing units at an average density of 484.8 per square mile (186.5/km²). The racial makeup of the village was 98.22% White, 0.84% from other races, and 0.94% from two or more races. Hispanic or Latino of any race were 1.78% of the population.

There were 383 households out of which 32.6% had children under the age of 18 living with them, 60.1% were married couples living together, 8.9% had a female householder with no husband present, and 28.2% were non-families. 26.1% of all households were made up of individuals and 13.1% had someone living alone who was 65 years of age or older. The average household size was 2.50 and the average family size was 3.03.

In the village the population was spread out with 25.5% under the age of 18, 6.7% from 18 to 24, 29.3% from 25 to 44, 23.5% from 45 to 64, and 15.0% who were 65 years of age or older. The median age was 38 years. For every 100 females there were 90.8 males. For every 100 females age 18 and over, there were 87.4 males.

The median income for a household in the village was $41,161, and the median income for a family was $47,159. Males had a median income of $36,458 versus $20,556 for females. The per capita income for the village was $18,127. About 7.4% of families and 8.5% of the population were below the poverty line, including 10.4% of those under age 18 and 10.1% of those age 65 or over.
(www.wikipedia.com)

Viola Essential Facilities

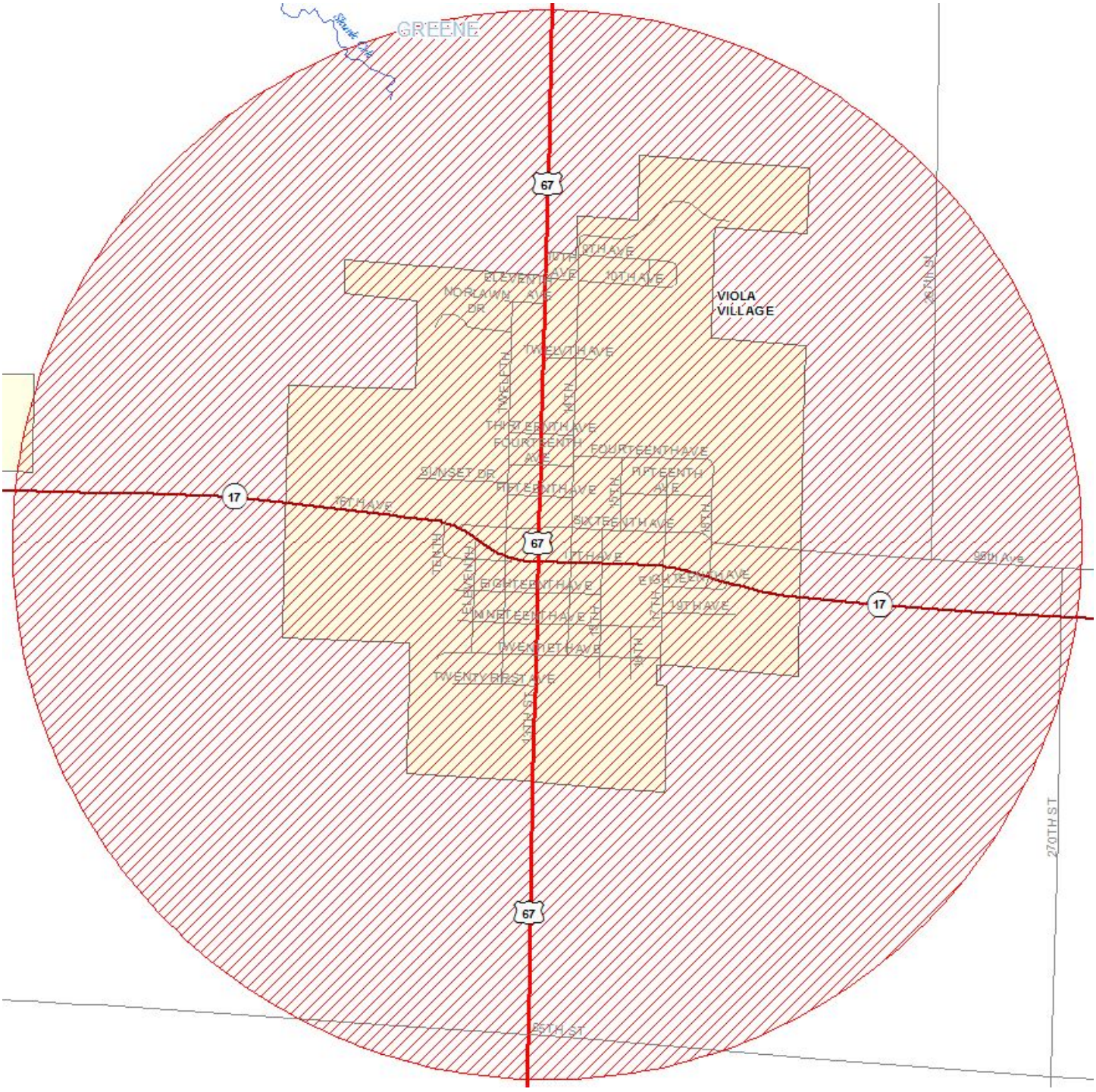
NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
City Hall	City Hall	1305 17th Ave, Viola, IL 61486 309-596-2513	N 41°12'10.93 W 90°35'12.57
Fire Department	Fire Station	1713 13th St, Viola, IL 61486 309-596-2311	N 41°12'4.19 W 90°35'12.99
Police Station	Police Station	1305 17th Ave, Viola, IL 61486 309-596-4111	N 41°12'10.93 W 90°35'12.57
Post Office	Post Office	1508 13 St, Viola, IL 61486 309-596-2707	N 41°12'16.86 W 90°35'12.59
Water Tower	Water Tower	1200 block of 18th Ave No Phone	N 41° 12'08.45" W 90° 35'14.98"

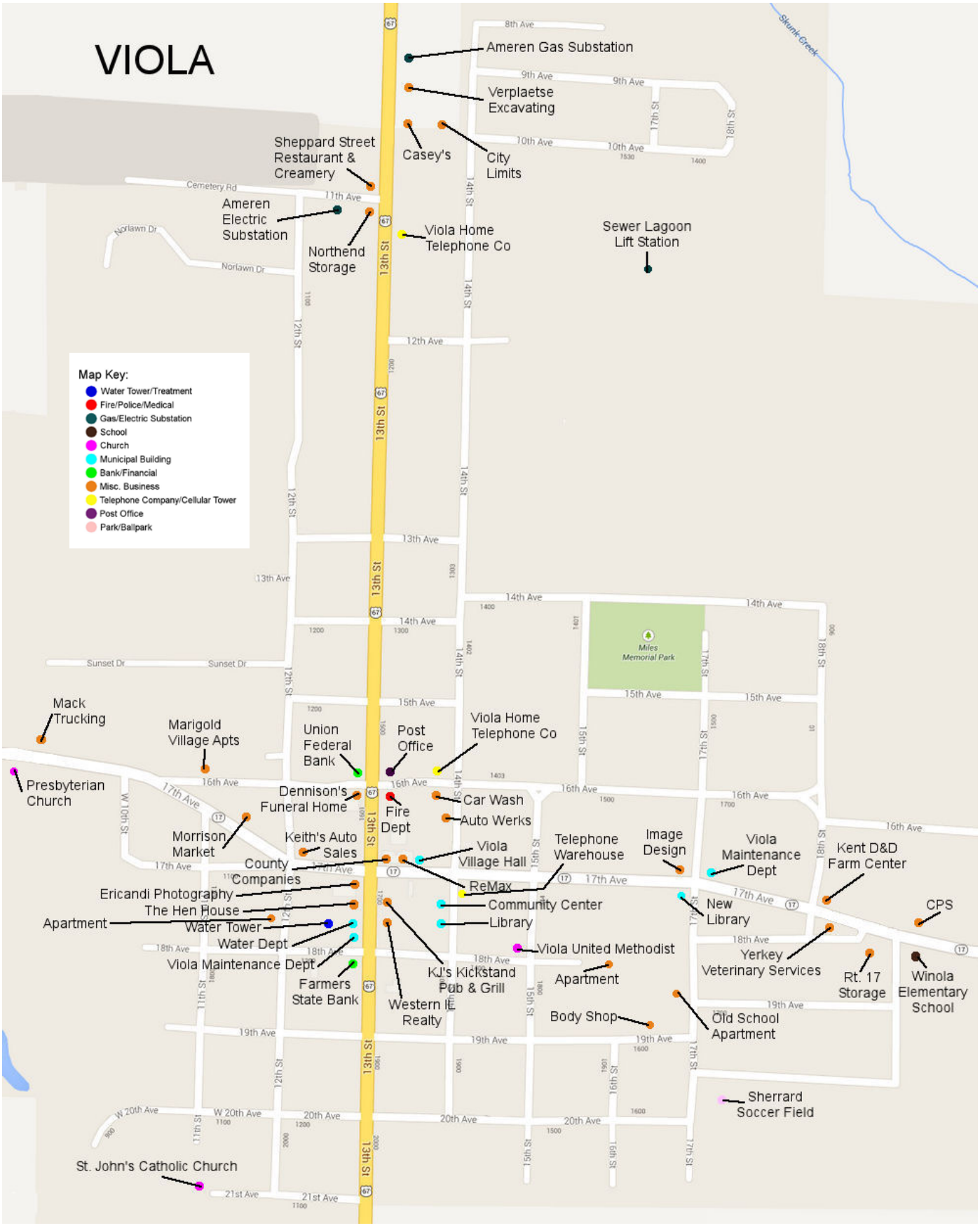
Viola Vulnerable Populations

NAME	FACILITY TYPE	PHYSICAL ADDRESS (Mailing address may differ)	GPS COORDINATES
Marigold Village	Senior Housing	1005 16th Ave, Viola, IL 61486 309-596-2323	N 41°12'14.25 W 90°35'3.28
Winola Elementary	School	1804 17th Ave, Viola, IL 61486 309-596-2114	N 41°12'9.29 W 90°34'49.37

Viola Storm Siren

Location	GPS Coordinates	Effective Range
Fire Station 2004 13th Str.	N 41°20'34.87 W 90°58'65.40	Effective range at 70dBC: 5600ft




VIOLA
Ameren Gas Substation
Verplaetse Excavating
Casey's
City Limits
Sheppard Street Restaurant & Creamery
Ameren Electric Substation
Northend Storage
Viola Home Telephone Co
Sewer Lagoon Lift Station
Skunk Creek
Map Key:
Water Tower/Treatment
Fire/Police/Medical
Gas/Electric Substation
School
Church
Municipal Building
Bank/Financial
Misc. Business
Telephone Company/Cellular Tower
Post Office
Park/Ballpark
Miles Memorial Park
Mack Trucking
Marigold Village Apts
Union Federal Bank
Post Office
Viola Home Telephone Co
Presbyterian Church
Dennison's Funeral Home
Fire Dept
Car Wash
Auto Werks
Morrison Market
Keith's Auto Sales
Viola Village Hall
Telephone Warehouse
Image Design
Viola Maintenance Dept
Kent D&D Farm Center
County Companies
ReMax
Ericandi Photography
The Hen House
Apartment
Water Tower
Community Center
Library
New Library
CPS
Water Dept
Viola Maintenance Dept
Viola United Methodist
Apartment
Yerkey Veterinary Services
Rt. 17 Storage
Winola Elementary School
Farmers State Bank
KJ's Kickstand Pub & Grill
Western IE Realty
Body Shop
Old School Apartment
Sherrard Soccer Field
St. John's Catholic Church

Operations & Resources

When developing a mitigation strategy in a multi-jurisdictional planning area, it is important to distinguish the variation in operations and resources among jurisdictions to ensure mitigation strategy is feasible. In other words, it is important to consider whether or not each community has the expertise or access to the resources for each participating jurisdiction are included.

Types of Operations and Resources

- Officials, commissions, and committees
- Staff and departments
- Services provided by jurisdiction
- Contracted or agreement services
- Policies, programs, and plans
- Financial

Mercer County Operations and Resources

Mercer County has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All county operations and resources were considered throughout the plan development process to ensure the county's final mitigation strategy is feasible. Many officials and staff participated in planning mitigation strategy as well.

Table 5: Mercer County Operations and Resources

*The asterisk indicates officials or staff that participated in the plan development process or policies, programs, and plans that were discussed or reviewed for relevancy in the county's mitigation strategy.

Officials, Commissions, and Committees	• Mercer County Board • Board of Health • Local Emergency Planning Committee • Finance Committee • Transportation Committee • Law Enforcement Committee • Insurance Committee • Negotiations/Personnel/Grievance Committee • Zoning Committee • Property/Purchases/Specs Committee • Assessments Committee • Economic Development Committee • Animal Control Committee • Waste Management Committee • Public Health Committee • Veterans Assistance Committee • Public Building Commission • Legislative Committee • 708 Committee • Township Road Commissioners* • Mercer County Board Chairman • County Clerk • Circuit Clerk • Recorder • Treasurer • Sheriff • State's Attorney • Coroner • Regional Superintendent of Schools • Supervisor of Assessments

Staff and Departments	• Mercer County Health Department* • Mercer County Sheriff's Department* • Mercer County Highway Department* • Assessments • Probation • Animal Control • Board of Review • State's Attorney • Zoning • GIS Mapping • Risk Management
County Services	• Law enforcement and response • Well and septic permits • Development/building permits • Storm water system maintenance and improvements • Road maintenance and improvements and snow removal • Vegetation and tree management in public areas • Maintain outdoor warning siren system and regular tests • Mapping services • Purchasing • Recorder and Treasurer Services • County Website*
Contracted and Agreement Services	• Mercer County Emergency Management Agency* • Police and fire protection mutual aid agreements • Genesis Ambulance Service* • Mercer County 9-1-1 • National Flood Insurance Program • MABAS (Mutual Aid Box Alarm System) • ILEAS (Illinois Law Enforcement Alarm System)
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Mercer County Social and Economic Impact Analysis 2013* • Flood Plain Management • National Incident Management System • Zoning Ordinances • Building Codes • Land Use Plan • Flood Insurance Rate Map • Strategic Plan

Financial and Other Resources	• County Budget • Bonds • Grants • Donations • Department Fees

Record of Review/Incorporation of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have. Included in the table is an explanation of where, if at all, each document was incorporated into Mercer County Natural Hazard Mitigation Plan.

Mercer County Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?	Method of incorporation into hazard mitigation plan
Comprehensive Plan	Yes	Yes	Referenced in plan
Subdivision Ordinance	No		
Zoning Ordinance	Yes	No	
Building Codes	Yes	No	
Land Use Plan	Yes	No	
Existing Land Use Map	Yes	No	
Flood Ordinance	No		
Flood Ins. Rate Map	Yes	No	NFIP Participation reference
Repetitive Flood Loss List	No		
Elevation Certificates for Buildings	No		
Capital Improvement Plan	No		
Historic Preservation Ordinance	No		
Strategic Plan	Yes	Yes	
Storm Water Management Plan	No		
Hazard Mitigation Plan	Yes	Yes	Incorporated historical events and weather data
Emergency Management/Response Plan	Yes	Yes	
Drainage Ordinance	No		
Critical Facilities Map	Yes	Yes	Incorporated into each planning area
Hazard Vulnerability Analysis	Yes	Yes	Incorporated into probability, magnitude and severity information
Infrastructure Map	No		
Topographic Map	No		
Community Website	Yes	Yes	Used to gather information
Storm Siren	N/A		Attachment of all sirens countywide
Weather Radio	Yes	N/A	
Storm Spotters	Yes	N/A	
Local Weather Station	Yes	N/A	
Watershed Repairs	No		
Road Treatment	No		

Aledo Operations and Resources

Aledo has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Aledo Operations and Resources

Officials, Commissions, and Committees	• Mayor • City Council • City Clerk • City Treasurer • Zoning • Zoning Board of Appeals • Historic Preservation Commission • Board of Local Improvements • Plan Commission • Advisory Committees
Staff and Departments	• City Administrator* • Police Department* • Fire Department* • Public Works*
Contracted and Agreement Services	• Genesis Ambulance Service • Public Health Septic Permits • Public Health Restaurant Inspections • Tobacco Enforcement Program • National Flood Insurance Program • 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Business Regulations • Building Regulations • Fire Regulations • Police Regulations • Zoning Regulations • Subdivision Regulations

Financial and Other Resources	• City Budget • Revenue from taxes and utilities • Grants

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Aledo Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	Yes	No
Subdivision Ordinance	Yes	No
Zoning Ordinance	Yes	No
Building Codes	Yes	No
Land Use Plan	Yes	No
Existing Land Use Map	Yes	No
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	Yes	No
Historic Preservation Ordinance	No	
Strategic Plan	Yes	No
Storm Water Management Plan	Yes	No
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	Yes	No
Community Website	Yes	Yes
Storm Siren	Yes	N/A
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Alexis Operations and Resources

Alexis has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Alexis Operations and Resources

Officials, Commissions, and Committees	• Village President • Village Trustee (6 positions)
Staff and Departments	• Village Treasurer • Village Clerk • Water and Sewer Supervisor* • Street and Ally Supervisor • Fire Department • Police Department • Public Works*
Contracted and Agreement Services	• National Flood Insurance Program • 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010*
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Alexis- Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	Yes	No
Building Codes	Yes	No
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	Yes	No
Flood Ins. Rate Map	No	
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	Yes	No
Emergency Management/Response Plan	Yes	No
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	Yes	Yes
Storm Siren	Yes	N/A
Weather Radio	No	
Storm Spotters	Yes	N/A
Local Weather Station	No	
Watershed Repairs	No	
Road Treatment	No	

Joy Operations and Resources

Joy has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Joy Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Village Trustee's (6)
Staff and Departments	• Fire Department • Public Works*
Contracted and Agreement Services	• Genesis Ambulance Service* • Mercer County Sheriff police services • 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Comprehensive Plan • Zoning Ordinances • Land Use Plan • Existing Land Use Plan • Strategic Plan • Drainage Ordinance
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Joy Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	Yes	No
Subdivision Ordinance	No	
Zoning Ordinance	Yes	No
Building Codes	No	
Land Use Plan	Yes	No
Existing Land Use Map	Yes	No
Flood Ordinance	No	
Flood Ins. Rate Map	No	
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	Yes	No
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	In progress	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	Yes	No
Topographic Map	No	
Community Website	No	
Storm Siren	Yes	N/A
Weather Radio	No	
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Keithsburg Operations and Resources

Keithsburg has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Keithsburg Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Fire District Committee • Treasurer • City Clerk •
Staff and Departments	• Fire Department • Police Department • Treasurer • City Clerk • Public Works
Contracted and Agreement Services	• National Flood Insurance Program • 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Building Codes • Hazard Mitigation Plan • Emergency Management/Response Plan • Animal Ordinances • Nuisance Ordinance • Zoning Ordinance
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Keithsburg Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	Yes	No
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	Yes	No
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	Yes	No
Emergency Management/Response Plan	Yes	No
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	Yes	No
Topographic Map	No	
Community Website	Yes	Yes
Storm Siren	Yes	N/A
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Matherville Operations and Resources

Matherville has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Matherville Operations and Resources

Officials, Commissions, and Committees	• Mayor/Village President* • Village Clerk • Treasurer • Trustee (5 positions)
Staff and Departments	• Maintenance Supervisor • Fire Department • Public Works • Streets and Alleys • Water and Sewer • Parks and Recreation
Contracted and Agreement Services	• Mercer County Sheriff police services • 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • ATV/UTV Ordinance • Golf Cart Ordinance • Building Codes
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Matherville Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	Yes	No
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	No	
Storm Siren	Yes	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

New Boston Operations and Resources

New Boston has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: New Boston Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Treasurer
Staff and Departments	• Fire and Ambulance Department • Police Department • Police Chief • Maintenance • City Clerk • Deputy City Clerk • Public Works • Public Relations
Contracted and Agreement Services	• 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010*
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

New Boston Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	No	
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	Yes	No
Topographic Map	No	
Community Website	No	
Storm Siren	Yes	N/A
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

New Windsor Operations and Resources

New Windsor has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: New Windsor Operations and Resources

Officials, Commissions, and Committees	• Mayor*
Staff and Departments	• Police Department • Rivoli Fire Department • Public Works
Contracted and Agreement Services	• 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010*
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

New Windsor Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	No	
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	Yes	No
Drainage Ordinance	No	
Critical Facilities Map	In Progress	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	Yes	
Topographic Map	No	
Community Website	No	
Storm Siren	Yes	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

North Henderson Operations and Resources

Aledo has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: North Henderson Operations and Resources

Officials, Commissions, and Committees	• Village President* • Village Trustee's (6)
Staff and Departments	• Fire Department • Ambulance Service • Public Works*
Contracted and Agreement Services	• 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010*
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

North Henderson Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	No	
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	No	
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	No	
Storm Siren	No	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Seaton Operations and Resources

Seaton has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Seaton Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Village Trustee's
Staff and Departments	• Fire Department* • Public Works
Contracted and Agreement Services	• Genesis Ambulance Service* • National Flood Insurance Program • 911 • Contracts Aledo Water Department
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010*
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Seaton Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	No	
Building Codes	No	
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	No	
Storm Siren	Yes	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Sherrard Operations and Resources

Sherrard has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Sherrard Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Mayor Pro Tem* • Trustee (5 positions) • Planning and Zoning Commission • Streets/Alleys & Buildings Committee • Water/Sewer & Public Utilities and Water Board • Finance/Audit & Ordinances Committee • Public Health and Safety Committee • Community Development & Assistance Committee • Personnel Committee
Staff and Departments	• Billing Clerk • Village Clerk • Treasurer • Public Works
Contracted and Agreement Services	• 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Zoning Ordinance • Flood Insurance Rate Map • Follow IBC Building Codes • Storm Water Management Plan
Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Sherrard Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	No	
Zoning Ordinance	Yes	No
Building Codes	No	
Land Use Plan	In Progress	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	Yes	Yes
Storm Siren	Yes	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Viola Operations and Resources

Viola has a wide range of operations and resources to implement a well-rounded hazard mitigation strategy. All city operations and resources were considered throughout the plan development process to ensure the city's final mitigation strategy is feasible.

Table 6: Viola Operations and Resources

Officials, Commissions, and Committees	• Mayor* • Village Board • Finance Committee • Streets/Alleys Committee • Public Grounds/Buildings Committee • General Claims Committee • Cemetery Committee • Cemetery Records Committee • Water/Sewer Committee • Local Improvements Committee • Fire/Health Committee • Purchasing Committee • Dogs/Cats Committee • TIF Committee • Zoning Board • Village Zoning Planning Committee
Staff and Departments	• Village Clerk • Village Treasurer • Head of Village Maintenance • Sexton for the Cemetery • Police Chief • Water and Maintenance Department • Fire Department* • Police Department • Public Works
Contracted and Agreement Services	• 911
Policies, Programs, and Plans	• Mercer County Emergency Operations Plan 2015* • Mercer County Comprehensive Disaster Recovery Plan 2015* • Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010* • Subdivision Ordinance

Financial and Other Resources	

Record of Review of Existing Documents

Each municipality completed and returned a chart of existing documents. Below is a table of ordinances and documents that each municipality either has or does not have.

Viola Existing Community Documents as of 2010

Existing Document/Policy/Program/Action	Does jurisdiction have this document?	Was the document Reviewed?
Comprehensive Plan	No	
Subdivision Ordinance	Yes	No
Zoning Ordinance	No	
Building Codes	No	
Land Use Plan	No	
Existing Land Use Map	No	
Flood Ordinance	No	
Flood Ins. Rate Map	Yes	No
Repetitive Flood Loss List	No	
Elevation Certificates for Buildings	No	
Capital Improvement Plan	No	
Historic Preservation Ordinance	No	
Strategic Plan	No	
Storm Water Management Plan	No	
Hazard Mitigation Plan	No	
Emergency Management/Response Plan	No	
Drainage Ordinance	No	
Critical Facilities Map	Yes	Yes
Hazard Vulnerability Analysis	No	
Infrastructure Map	No	
Topographic Map	No	
Community Website	Yes	Yes
Storm Siren	Yes	
Weather Radio	Yes	N/A
Storm Spotters	Yes	N/A
Local Weather Station	Yes	N/A
Watershed Repairs	No	
Road Treatment	No	

Plan Goals

Purpose of Hazard Mitigation Planning Goals

Goals broadly define the desired outcomes of a plan. For all types of planning, goals are needed to guide the plan development process. In hazard mitigation planning, goals provide a basis for discussion and evaluation to ensure hazard mitigation strategies accurately reflect the planning area's priorities.

Mercer County Multi-Jurisdiction Natural Hazard Mitigation Plan from 2010 was reviewed for plan goals. The planning committee chose to keep the majority of the goals the same. The only change to the goals was number one. It was edited slightly to show that animals and people are not of the same importance.

Hazard Mitigation Planning Goals

1. **Life, Health, and Safety:** Design and implement mitigation projects that will protect the lives, health and safety of people of Mercer County from dangers or natural hazards
2. **Protect Private Property:** Implement procedures and actions that will protect private property, including domestic animals and livestock, from natural hazards; including removal and/or relocation of areas that have been repeatedly damaged in natural hazards
3. **Prevent Damage to Infrastructure:** Develop plan to both protect existing infrastructure and design new infrastructure to be resilient to the effects of natural hazards
4. **Improve Communication:** Develop methods and procedures to maintain and improve communication between Mercer County residents, government, and private entities both before and during a disaster.
5. **Emergency Response Minimization:** Develop projects and systems that minimize the need and expenditures for rescue and relief efforts associated with all natural hazards.
6. **Reduce the Effects of Natural Hazards:** Create projects that will reduce the impact of natural hazards on all communities and rural areas of Mercer County, including those from tornados, flooding, and winter storms

Risk Assessment

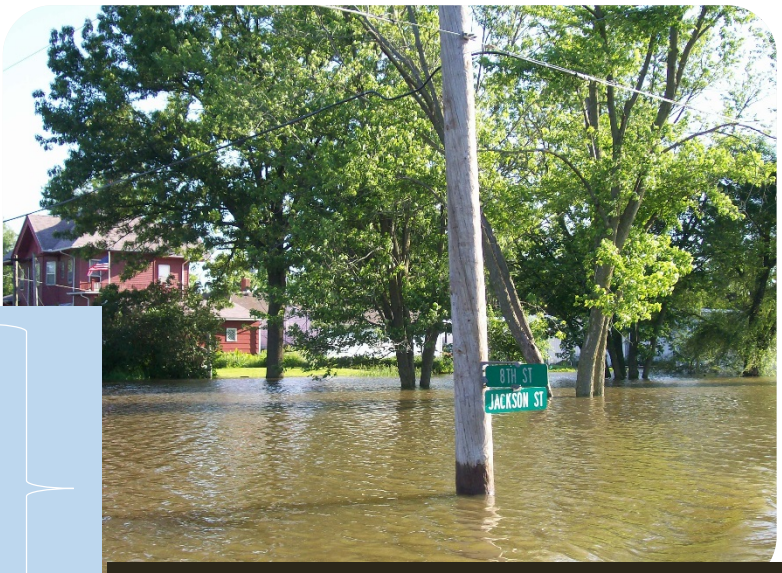
Purpose of Hazard Risk Assessment

In hazard mitigation planning, a risk assessment identifies what hazards can occur in a planning area, how hazards can impact a planning area, and level of priority hazards are given in a mitigation strategy. Overall, a risk assessment provides the necessary foundation for determining effective programs and projects to reduce the potential impacts of hazards.

Mercer County Illinois has the potential to be affected by several natural hazards including drought, earthquake, extreme heat, flash flood, flood, severe thunderstorm, tornado, and winter storm. It is important to identify the risk that Mercer County and its jurisdictions are under. For this reason Mercer County Emergency Management Director completed THIRA tool in November of 2015. In addition to THIRA, Mercer County Multi-Jurisdictional Natural Hazard Mitigation Planning Committee completed HVA on August 26, 2015.

Risk Assessment Process

1. **Identify Hazard**
2. **HVA and THIRA**
3. **Hazard Prioritization**



Intersection in Keithsburg during 2008 flood

Hazard Identification

In 2013, State of Illinois completed a FEMA approved Statewide Threat Hazard Identification Risk Assessment (THIRA) that was consistent with the CPG-201 and expanded on nationally accepted emergency management standards, which have long required using risk assessments, such as HIRAs, as the basis for planning across the mission areas. IEMA and the Illinois Terrorism Task Force Strategic Planning Cell combined to review the risk of hazards within the State of Illinois. During the THIRA process, numerous plans and studies were reviewed to ensure consistency and accuracy of the information provided in the document. Some of the plans reviewed included the State Natural Hazard Mitigation Plan, State Natural Hazard Risk Assessment, State Technological Hazards Mitigation Plan, State Human Caused Hazards Mitigation Plan, State Emergency Operation Plan, State Recovery Plan, State Mass Fatalities Plan, National Climate Data Center documents, past incident response situation reports and public assistance documents. The continuous cycle of assessing the State's capabilities, plans, and programs while incorporating these results into future THIRAs will allow the State to mitigate the impact to potential identified risks, while provided the means to educate and update individuals, families, businesses, organizations, community leaders, and senior officials on the risks facing a community in an effort to provide an avenue for building required capabilities and creating a secure and resilient community. (*2013 Illinois Hazard Mitigation Plan)*

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan will focus on the below natural hazards.

Natural Hazards

- Drought
- Earthquake
- Extreme Heat
- Flash Flood
- Flood
- Severe Thunderstorm
- Tornado
- Winter Storm

Natural Hazard

Natural hazards are natural events that threaten lives, property, and other assets. Often, natural hazards can be predicted. They tend to occur repeatedly in the same geographical locations because they are related to weather patterns or physical characteristics of an area. *(www.fema.gov)*

Illinois Hazard Rating By County Based on Criteria and Methodology Established by the Illinois Natural Hazard Mitigation Planning Committee

Ratings Updated 7/1/2013
(*) Indicated Rating has been adjusted utilizing LHMP

Key	Low=0-12
Guarded=13-24	Elevated=25-36
High=37-48	Severe=49-60

County Name	Population	Severe Storms	Floods	Severe Winter Storms	Drought	Extreme Heat	Earthquake	Tornado
Mercer	16,434	Severe	High*	High	Elevated*	Elevated	Guarded	Elevated

(2013 Illinois Hazard Mitigation Plan)

Mercer County Hazard and Vulnerability Assessment Tool (HVA) assessed the risk for the following threats:

- Tornado
- Severe Thunderstorm
- Snow Fall
- Blizzard
- Ice Storm
- Temperature Extremes
- Drought
- Flood

Mercer County Threat and Hazard Identification and Risk Assessment (THIRA) assessed the risk for the following threats:

- Flood
- Severe Storm
- Winter Storm
- Tornado

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan will include the following natural hazards:

- Drought
- Earthquake
- Extreme Heat
- Flash Flood
- Flood
- Severe Thunderstorm
- Tornado
- Winter Storm

Hazard Identification by Jurisdiction

Chart illustrates which hazards each jurisdiction can be affected by

	Drought	Earthquake	Extreme Heat	Flash Flood	Flood	Severe Thunderstorm	Tornado	Winter Storm
Mercer County	✓	✓	✓	✓	✓	✓	✓	✓
Aledo	✓	✓	✓	✓	**N/A**	✓	✓	✓
Alexis	✓	✓	✓	✓	**N/A**	✓	✓	✓
Bay Island	✓	✓	✓	✓	✓	✓	✓	✓
Joy	✓	✓	✓	✓	**N/A**	✓	✓	✓
Keithsburg	✓	✓	✓	✓	✓	✓	✓	✓
Matherville	✓	✓	✓	✓	**N/A**	✓	✓	✓
New Boston	✓	✓	✓	✓	✓	✓	✓	✓
New Windsor	✓	✓	✓	✓	**N/A**	✓	✓	✓
North Henderson	✓	✓	✓	✓	**N/A**	✓	✓	✓
Seaton	✓	✓	✓	✓	**N/A**	✓	✓	✓
Sherrard	✓	✓	✓	✓	**N/A**	✓	✓	✓
Viola	✓	✓	✓	✓	**N/A**	✓	✓	✓

✓ = jurisdiction can be affected by specific hazard
N/A = Not a hazard to the jurisdiction

HAZARD AND VULNERABILITY ASSESSMENT TOOL
NATURALLY OCCURRING EVENTS

KAISER PERMANENTE

EVENT	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)						RISK
		HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPARED-NESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	
	Likelihood this will occur	*Possibility of death or injury*	*Physical losses and damages*	*Interruption of services*	*Preplanning*	*Time, effectiveness, resources*	*Community/ Mutual Aid staff and supplies*	*Relative threat**
SCORE	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 = N/A 1 = High 2 = Moderate 3 = Low or none*	*0 - 100%*
Tornado	1	3	3	3	1	2	2	**26%**
Severe Thunderstorm	3	1	3	3	1	1	2	**61%**
Snow Fall	2	1	1	2	1	1	1	**26%**
Blizzard	1	2	1	3	1	2	1	**19%**
Ice Storm	2	3	3	3	1	2	2	**52%**
Temperature Extremes	2	1	1	2	1	1	2	**30%**
Drought	1	1	2	1	2	2	2	**19%**
Flood, External	3	2	3	3	1	2	3	**78%**
AVERAGE SCORE	**0.94**	**0.88**	**1.06**	**1.25**	**0.56**	**0.81**	**0.94**	**10%**

**Threat increases with percentage.*

RISK = PROBABILITY * SEVERITY		
0.10	**0.31**	**0.31**

Summary of HVA

The Hazard Vulnerability Assessment tool calculates the percentage of the overall relative threat of a particular natural hazard. HVA allowed for a round table discussion with mock scenarios to better identify our overall mitigation strategies for each of the eight natural hazards we are vulnerable to in Mercer County. It was then determined that there are areas for improvement on mitigation.

Flood: Mock Scenario – "After several days of heavy rainfall the Mississippi River over ran its banks causing heavy flooding in Keithsburg, IL. Water is reaching into residential areas and the downtown areas." The response is to identify vulnerable infrastructure during this event. Identify areas that would need the most immediate response. Identify ways that we could be prepared before this event occurred. The group identified: ADM, lift station, levee, Casey's, campground, power station and roadways. Immediate response would be needed on the current levee project and roadway. A continuous monitoring of the water level is the best way to mitigate this natural hazard. The overall percentage of relative threat to Mercer County is 78%.

Severe Thunderstorm: Mock Scenario – "Aledo, IL was struck by a severe thunderstorm with lightening, heavy rainfall and high winds. This storm caused damage to many properties, trees and power lines." The response is to identify three vulnerable populations in this community. The group identified: nursing home/hospital, senior population and schools/daycare. Using HVA calculation of where the community lies for being prepared put this particular natural hazard at a 61% relative threat.

Ice Storm: Mock Scenario – "Mercer County has received multiple inches of snow in a short time period causing roads to be impassable and visibility to be limited. The snow is accompanied by high winds and bitter cold temperatures. Prior to the snow there was freezing rain. The freezing rain caused roadways, power lines and properties to have significant ice buildup on them." The response is to identify other emergency response agencies that should be contacted to respond to this event. Identify three vulnerable populations that would be effected during this weather event. Lastly, identify essential facilities during this event. The group identified: IEMA, EMS, hospital, fire departments, shelters, and law enforcement. The vulnerable populations would include; commuters, elderly and disabled. The most significant facility would be any and all warming centers and shelters. The overall relative threat of this hazardous event to occur according to our HVA calculations is 52%.

Extreme Temperatures: Mock Scenario – "Mercer County has been experiencing extreme cold and hot temperatures impacting the elderly." The response is to identify vulnerable populations during this event. Also, identify potential response resources during this event. The group identified: all younger and older populations to be the most vulnerable. The best potential resources at our disposal are churches, project now and any other designated shelter. The HVA determined that Mercer County's overall relative threat of extreme temperatures is at 30%.

Snowfall: Mock Scenario – "Mercer County has received multiple inches of snow in a short time period causing roads to be impassable and visibility to be limited. The snow is accompanied by high winds and bitter cold temperatures. Prior to the snow there was freezing rain causing the roadways, power lines and properties to have significant ice buildup." The response is to identify other emergency response agencies we should contact to respond to this event. Identify three vulnerable populations during this event. Lastly, identify essential facilities during this event. The group responded with IEMA, EMS, hospital, fire departments, all shelters and law enforcement. The most

vulnerable populations are commuters, elderly and disabled. Warming centers and shelters are significant facilities. HVA put snowfall at a 26% overall relative threat to Mercer County.

Tornado: Mock Scenario – "A F3 tornado touches down in Matherville, IL damaging several blocks in the village. Several trees and power lines have been knocked down blocking roads and homes. There is significant debris blown throughout the village." The response is to identify three vulnerable structures in this community. The group determined that there are four essential structures to consider in this scenario; schools, city hall, fire station, and the water tower. The HVA concluded that the relative threat of a tornado within Mercer County is at 26%

Drought: Mock Scenario – "Seaton, IL has not had any significant precipitation in several weeks. In addition they have to dig a new well for their municipality because the current well is unusable." The response is to identify what other resource agencies should be contacted for assistance in this event. The group identified WIRC, USDA, DNR, EPA, Illinois Rural Water, Blackhawk State Bank, Rural Development, SBA, and Illinois DCEO. HVA determined that there is only a 19% relative threat to Mercer County for a drought to occur within a given year.

Blizzard: Mock Scenario – "Mercer County has received multiples inches of snow in a short time period causing roads to be impassable and visibility to be limited. The snow is accompanied by high winds and bitter cold temperatures. Prior to the snow there was freezing rain causing roadways, power lines and properties to have significant buildup." The response is to identify other emergency response agencies that should be contacted to respond to this event. Also, identify three vulnerable populations. Lastly, identify essential facilities during this event. The group responded with IEMA, EMS, hospitals, fire departments, all shelters and law enforcement. The most vulnerable populations are commuters, elderly and disabled. Warming centers and shelters are significant facilities. HVA determined that Mercer County is at a relatively low threat of 19% for a blizzard to occur on any given year.

Using Hazard Vulnerability Analysis during the HMGP meeting with a round table discussion of mock scenarios and responses in those emergency situations allowed for the group to better identify areas of weakness and strength. In addition, a useful tool of historical data provided by James Zahara, Chief Meteorologist with WQAD News Channel 8, to determine the likelihood of each natural hazard to occur in Mercer County was utilized. Using this historical data provided the group with even more statistical proof of our greatest threat.

Mercer County Emergency Management Agency Director completed THIRA in November of 2015.

Illinois Emergency Management Agency
Threat and Hazard Identification and Risk Assessment
(THIRA)

Revision: 11.4.15

Jurisdiction	Mercer County	**Organization**	Emergency Management Agency
Region	2	**Date**	November 9, 2015

Risk Assessment Ranking for Jurisdiction

Key for Risk Assessment Ranking Table: (The hazard and risk percentage boxes are auto-calculated.)
The Hazard selected will be highlighted by the amount of Risk from the Threat/Hazard Risk Assessment:
Green = Low, Blue = Guarded, Yellow = Elevated, Orange = High, Red = Severe

HAZARD	**Flood**	**RISK PERCENTAGE**	**44%**
HAZARD	**Severe Storm**	**RISK PERCENTAGE**	**78%**
HAZARD	**Winter Storm**	**RISK PERCENTAGE**	**56%**
HAZARD	**Tornado**	**RISK PERCENTAGE**	**48%**
HAZARD	**Hazardous Materials Release**	**RISK PERCENTAGE**	**17%**
HAZARD	**Power Failure**	**RISK PERCENTAGE**	**56%**
HAZARD	**Pandemic**	**RISK PERCENTAGE**	**41%**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Natural**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Flood**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

At 5:00 pm on a Sunday in June, a 100 year flood event has occurred with the Mississippi River cresting and overtopping the Pope Creek levee in Keithsburg. Additionally, a week of heavy rains has caused flash flooding county wide. Damages include residential and business flooding in Keithsburg displacing 150 residents, closed roadways and bridges, and damage to storm water drains, tubes, culverts, and roads county-wide.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**Moderate**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**Moderate**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**High**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**Moderate**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**High**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**44%**

Save Form | **Add Assessment Form** | **Remove Assessment Form**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Natural**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	Severe Storm

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

A severe thunderstorm at 7:00 pm in the evening in May has hit Mercer County affecting the majority of the City of Aledo. High winds up to 85 miles an hour, golf ball sized hail, and rapid rainfall have caused widespread damages and power outages. Residents report downed trees and power lines especially in the south west and northwest portions of the city, power outages affecting 3000 people, damage to roofs, homes, and cars, and broken windows from hail damage.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**High**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**High**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**Moderate**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**High**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**Moderate**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**78%**

Save Form | **Add Assessment Form** | **Remove Assessment Form**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Natural**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Winter Storm**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

A severe winter storm including freezing rain and snow has occurred in late January across multiple counties from Rock Island to McDonough, directly affecting Mercer. Ice accumulations of ¾ to 1 inch has caused damage to trees, and placed excessive weight on power lines causing widespread power outages and affecting 15,000 residents in Mercer County alone. With temperatures not expected to be above 20 degree for the next 4 days, ice is expected to remain on ground, trees, cars, and surfaces causing extreme safety risk for residents and drivers.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**High**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**Moderate**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**Low**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**Moderate**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**High**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**56%**

Save Form | **Add Assessment Form** | **Remove Assessment Form**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Natural**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Tornado**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

An F-3 tornado with speeds up to 200 mph has occurred in a path in Mercer County affecting Joy, Aledo, and Viola and causing severe damage to roofs, walls of houses, garages, barns, and businesses; downed trees and power lines causing widespread power outage; and throwing cars around parking lots. This event occurred on a Saturday in June causing storm sirens to be activated and evacuation of 4000 attendees of the Rhubarb Festival to attempt mass exit of the festival on foot to local fire station, Wal-Mart, vehicles, and hospital in attempt to seek shelter. Traffic jams and minor injuries reported from evacuation prior to tornado hitting Aledo. Major injuries still being investigated but 2 fatalities are recorded.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**Moderate**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**Moderate**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**High**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**High**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**High**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**48%**

Save Form	Add Assessment Form	Remove Assessment Form

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Technological**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Hazardous Materials Release**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

With heavy movement of anhydrous tanks in November, a traffic accident with anhydrous spill has occurred on US Highway 67 involving an eight car pile-up due to overturned truck and tank. Mass casualties are reported due to multiple vehicle accident resulting in minor and major injuries, and due to one responder being overcome with anhydrous fumes and resulting in a fatality.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**Low**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**Moderate**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**Low**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**Low**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**High**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**17%**

Save Form | **Add Assessment Form** | **Remove Assessment Form**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Technological**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Power Failure**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

A severe winter storm including freezing rain and snow has occurred in late January across multiple counties from Rock Island to McDonough, directly affecting Mercer. Ice accumulations of ¾ to 1 inch has caused damage to trees, and placed excessive weight on power lines causing widespread power outages and affecting 15,000 residents in Mercer County alone. With temperatures not expected to be above 20 degree for the next 4 days, ice is expected to remain on ground, trees, cars, and surfaces causing extreme safety risk for residents and drivers.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**High**

Directions for Human Impact:
Select the vulnerability of the population living in or near the hazard area.
Low = Less than 10% of the total population of the jurisdiction.
Moderate = 10% to 25% of the total population of the jurisdiction.
High = More than 25% of the total population of the jurisdiction.

Human Impact: Possibility of death or injury	**Low**

Directions for Property Impact:
Select the vulnerability of the losses and damages to personal and government property.
Low = Less than 10% of the community and government affected.
Moderate = 10% to 25% of the community and government affected.
High = More than 25% of the community and government affected.

Property Impact: Physical losses and damages	**Low**

Directions for Business Impact:
Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard.
Low = Less than 10% of business affected.
Moderate = 10% to 25% of business affected.
High = More than 25% of business affected.

Business Impact: Interruption of Services	**Moderate**

Directions for Preparedness:
Select the level of planning and training that has occurred to respond to the Threat/Hazard.
Low = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard.
Moderate = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard.
High = Plans are completed, tested, and ready to respond to Threat/Hazard.

Preparedness: Pre-planning	**Moderate**

Directions for Internal Response:
Select the level of Local Response Capabilities to responding to the Threat/Hazard.
Low = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard.
Moderate = Have the capabilities to respond with additional aid to the Threat/Hazard.
High = Fully meet the capabilities to respond to the Threat/Hazard.

Internal Response: Time, effectiveness, resources	**Moderate**

Directions for External Response:
Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry..
Low = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry.
Moderate = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
High = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.

External Response: Community, Mutual Aid Staff, Supplies	**Moderate**

Directions for Risk:
The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.

Risk: Relative Threat (0-100%,Threat increases with percentage)	**56%**

Save Form | **Add Assessment Form** | **Remove Assessment Form**

Threat and Hazard Assessment

Directions Threat/ Hazard Group:
Select the Threat/Hazard Group (Natural, Technological/ or Human-Caused) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Group	**Natural**

Directions Threat/ Hazard Type:
Select the Threat/Hazard Type (Tornado, Civil Disorder, etc.) in the box below. *(Completes the Step 1 of CPG 201 THIRA Process.)*

Threat/Hazard Type	**Pandemic**

Threat and Hazard Context Description

Directions for Threat and Hazard Context Description:
Describe the threats and hazards of concern, showing how they may affect the community; including historical and factual evidence. Context descriptions outline the conditions, including time and location, under which a threat or hazard might occur. *(This completes the Step 2 of the CPG 201 THIRA Process. Reference CPG 201 and the Core Capabilities)*

An outbreak of flu like symptoms has been flooding the emergency room in Aledo, Illinois on a Wednesday evening in December. Although seasonal flu is common, a recent identification of a mutated pandemic flu being referred to as H5N27 is also under surveillance. This virus is spreading through the midwest and is believed to have advanced to human to human transmission. Common symptoms are noted amongst those presenting to the ER and local hospital capability is quickly becoming overwhelmed. Personal Protective Equipment supplies are running low. 40% of hospital staff are either ill or not reporting to work due to sick family members. Hospital supplies and equipment are being requested through the Genesis Medical Center system but are slow to arrive due to the regional nature of this epidemic, and ultimately the international emergency and pandemic. Community panic is also a large concern.

Threat/Hazard Risk Assessment

Directions for Probability:
Select the likelihood that this Threat/Hazard will occur in your jurisdiction.
Low = Less than 1% probability of occurrence in the next 100 years.
Moderate = Between 1-10% probability of occurrence in the next year, or at least one chance of occurrence in next 100 years.
High = Between 10-100% probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years.

Probability: Likelihood this will occur.	**Moderate**

Directions for Human Impact: Select the vulnerability of the population living in or near the hazard area. **Low** = Less than 10% of the total population of the jurisdiction. **Moderate** = 10% to 25% of the total population of the jurisdiction. **High** = More than 25% of the total population of the jurisdiction.
Human Impact: Possibility of death or injury — **High**
Directions for Property Impact: Select the vulnerability of the losses and damages to personal and government property. **Low** = Less than 10% of the community and government affected. **Moderate** = 10% to 25% of the community and government affected. **High** = More than 25% of the community and government affected.
Property Impact: Physical losses and damages — **Low**
Directions for Business Impact: Select the vulnerability of the losses and damages to businesses and stoppage of business due to the Threat/ Hazard. **Low** = Less than 10% of business affected. **Moderate** = 10% to 25% of business affected. **High** = More than 25% of business affected.
Business Impact: Interruption of Services — **Moderate**
Directions for Preparedness: Select the level of planning and training that has occurred to respond to the Threat/Hazard. **Low** = Minimal or Outdated (*more than 4 years old*) plans for dealing with the Threat/Hazard. **Moderate** = Plans are completed, but are being revised and not tested to deal with the Threat/Hazard. **High** = Plans are completed, tested, and ready to respond to Threat/Hazard.
Preparedness: Pre-planning — **High**
Directions for Internal Response: Select the level of Local Response Capabilities to responding to the Threat/Hazard. **Low** = Minimal capabilities to respond without substantial mutual aid to the Threat/Hazard. **Moderate** = Have the capabilities to respond with additional aid to the Threat/Hazard. **High** = Fully meet the capabilities to respond to the Threat/Hazard.
Internal Response: Time, effectiveness, resources — **Moderate**
Directions for External Response: Select what level of Mutual Aid Agreements your jurisdiction maintains, coordination with volunteer organizations, and agreements with private industry.. **Low** = Minimal level of mutual aid with other jurisdictions, no coordination with volunteer organizations, or private industry. **Moderate** = Some mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry. **High** = Substantial level of mutual aid agreements with other jurisdictions, or coordination with volunteer groups and private industry.
External Response: Community, Mutual Aid Staff, Supplies — **Moderate**
Directions for Risk: The Risk for the Threat/ Hazard is automatically calculated from the choices made in the questions above, using a weighted calculation.
Risk: Relative Threat (0-100%,Threat increases with percentage) — **41%**
Save Form | **Add Assessment Form** | **Remove Assessment Form**

Notice concerning historical data for the following natural hazards:

- According to NOAA, the climatic data center database contains data from January 1950 to present
- The amount of data has changed over time so the amount and types of data varies for each year
- An overview of the types of data collected during each period is below
    - From 1950 through 1954, only tornado events were recorded
    - From 1955 through 1992, only tornado, thunderstorm, wind and hail events were keyed from the paper publications into digital data. From 1993 to 1995, only tornado, thunderstorm, wind and hail events have been extracted from the unformatted text fill
    - From 1996 to present, 48 types are recorded as defined in NWS Directive 10-1605

(National Climatic Data Center)

Definition of Drought

Drought is a deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area. NOAA together with its partners provides short- and long-term Drought Assessments. *(National Weather Service)*

Drought is a normal and a recurrent feature of climate, however, it is only a temporary feature of climate. Drought characteristics vary from one region to another, but drought occurs almost everywhere. All societies are vulnerable to this natural hazard and it can affect vast territorial regions and large population numbers. A drought may not have a distinct start and its termination may be difficult to recognize. Weather conditions, soil moisture, runoff, water table conditions, water quality and stream flow are all natural factors that are important in determining drought. High temperature, high wind and low relative humidity can significantly aggravate its severity.

This hazard is difficult to define and yet it has scores of definitions. It originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group or environmental sector. Operational definitions help people identify the beginning, end and degree of severity of a drought. There are four commonly used operational definitions:

Meteorological Drought: A period of well-below-average precipitation that spans from a few months to a few years.

Agricultural Drought: A period when soil moisture is inadequate to meet the demands for crops to initiate and sustain plant growth.

Hydrological Drought: A period of below-average stream flow and/or depleted reservoir storage (i.e., stream flow, reservoir and lake levels, ground water).

Economic Drought: This definition deals with the supply and demand of water. Some years there is an ample supply of water and in other years there is not enough to meet human and environmental needs.

Generally drought is associated with a sustained period (which differs for each drought impact) of significant below average water or moisture supply. The degree of precipitation deficiency, the duration and the size of the affected area determines the severity of the drought. A drought can ruin agricultural land tourism- based local economies and increase the risk of fire, flash flood and possible landslides/debris flow.

Drought Impacts:

- Damaged/diminished crop harvests
- Loss of Electricity generation
- Poor surface water quality
- Scarce drinking water supplies/rationing
- Recreation opportunities lost

- Transportation problems

Historical Data

Droughts are differentiated on the basis of use and need for water into three categories:

1. Meteorological = precipitation shortfall
2. Agricultural = soil moisture deficit
3. Hydrological = surface and groundwater deficit

(2013 Illinois Hazard Mitigation Plan)

Potential Hazard Area

The potential hazard area for a drought in Mercer County is county wide.

Historical Occurrences

According to the National Drought Mitigation Center there have been 184 report impacts of drought in Mercer County since 2006. These impacts include 123 in agriculture, 34 in business and industry, 1 in energy, 4 in fire, 22 in plant and wildlife, 52 in relief, response and restrictions, 51 in society and public health, 3 in tourism and recreation and 24 in water supply and quality.
(National Drought Mitigation Center)

According to the National Drought Mitigation Center there have been 82 reported impacts from droughts affecting Mercer County from 1970 to the present. These impacts fall into several categories. There were 37 agricultural impacts, 14 water/energy impacts, 5 environmental impacts, 4 social impacts, 1 fire impact and 20 other impacts. It should be noted that a single drought event can have multiple impacts which fall into different impact categories. Mercer County was affected in many including crop damage, drinking water issues, and barge traffic congestion.

Mercer County was one of several counties affected by the drought of 2005-06. This drought started in June of 2005 and continued through March of 2006. The drought affected Bureau, Carroll, Hancock, Henderson, Henry, Jo Daviess, McDonough, Mercer, Putnam, Rock Island, Stephenson, Warren, and Whiteside counties. In total the drought did $228.5 million in crop damage. The NCDC provides descriptions of this drought:

“The drought that began back in June 2005 continued through December 2005 and into January 2006. Since the growing season was now over, the main impacts on the drought were hydrologic. A report on the hydrologic conditions is supplied by the service hydrologist. Stream flows began the month with most locations reporting near normal (25th to 74th percentile) conditions. A few locations reported above normal (76th to 90th percentile) conditions and a few locations reported below normal (10th to 24th percentile) conditions. From the 2nd through the 6th most locations reported below normal conditions, with a few locations reporting much below normal (less than 10th percentile) conditions and a few locations reporting near normal conditions. After the 6th most locations returned to the same conditions they experienced when the month began. Aside from some minor day to day fluctuations, these conditions persisted through the end of the month. December's precipitation was below normal. Total precipitation for the month was 1.26 inches, or 0.61 inches below normal and 67% of normal. The six-month precipitation total was 11.71 inches, or 7.05 inches below normal and 62% of normal. December was the eleventh consecutive month with below normal precipitation. During this eleven-month period total precipitation has been 21.85 inches, or 13.08 inches below normal and 63% of normal. According to the U.S. Drought Monitor maps (http://drought.unl.edu/dm/), the drought conditions for the HSA did not change much during the

month. By the end of the month, the eastern two-thirds of the HSA were in the Extreme Drought (D3) category. The western one-third of the HAS was in the Severe Drought (D2) or Moderate Drought (D1) category. According to the NOAA/NWS Climate Prediction Center, parts of the HSA have been extremely dry over the past year. In the northwest Illinois climate division the yearly precipitation total for 2005 was in the lowest 1% of all annual precipitation totals for 1895 through 2005. In the east central Iowa climate division the total for 2005 was in the lowest 4% of all annual precipitation totals for the same time period. Conditions have also been dry, albeit not as severe, over the past three years. In the northwest Illinois climate division the three-year precipitation total for 2003 through 2005 was in the lowest 4% of all three-year precipitation totals for 1897 through 2005. In the east central Iowa climate division the total for 2003 through 2005 was in the lowest 10% of all three year precipitation totals for the same time period. "The drought that began back in June 2005 continued through March 2006 but shrunk considerably in size and scope by the start of April 2006. This shrinkage was due to a persistent wet pattern that had set up during March 2006 and continued into April 2006. Since the growing season had yet to begin, the drought was essentially hydrologic in nature. A report of the hydrologic conditions is supplied by the service hydrologist. River Conditions Monthly stream flows for March averaged near normal (25th to 75th percentile) to below normal (10th to 24th percentile). All basins averaged below normal except for the lower Cedar-Iowa River basins and the entire Rock River basin, which averaged near normal. Stream flows began the month with most locations reporting stream flows that were below normal (10th to 24th percentile) or much below normal (less than 10th percentile). A few locations reported near normal (25th to 75th percentile) conditions and one location reported a record low flow for the day. Stream flows gradually decreased until moderate rainfall fell on the 5th. On the 6th, stream flows began increasing in response to this rainfall. Stream flows then remained nearly steady or increased slightly through the 13th when most locations reported near normal conditions. Some locations reported below normal (10th to 24th percentile) flows while other locations reported above normal (76th to 90th percentile) flows. Stream flows then gradually decreased into the late parts of the month but then rose on the last day of the month. On the 30th most locations reported below normal conditions while some locations reported near or much below normal flows. Moderate rainfall on the 30th resulted in flow increases on the 31st. On that day, half of the locations reported below or much below normal flows and half of the locations reported near or above below normal flows.
Source: U.S. Geological Survey, WaterWatch Web site (http://water.usgs.gov/waterwatch/). Drought According to the U.S. Drought Monitor maps, minimal changes in the drought situation occurred during the month. Severe drought conditions (D2) continued to cover much of the HSA with moderate drought conditions (D1) across northwestern portions of the HSA."
(2010 Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan)

County	Number of Droughts 1960-2012(NCDC)	Total Recorded Loss (NCDC)	Average $ in crop damage per event (NCDC)	Annual Probability of Event	Estimated Annual Loss
Mercer	13	$17,584,615	$1,352,662.72	59.1%	$799,300.70

The following chart of historical drought events in Mercer County lists events from June 2005 through October of 2013. These events are the only events listed on National Oceanic and Atmospheric Administration (NOAA) storm events database.

Location	Date	Hazard	Deaths	Injuries	Property Damage	Crop Damage
Mercer County	6-15-2005	Drought	0	0	0	14.860M
Mercer County	7-1-2005	Drought	0	0	0	0
Mercer County	8-1-2005	Drought	0	0	0	12.240M
Mercer County	9-1-2005	Drought	0	0	0	2.620M
Mercer County	10-1-2005	Drought	0	0	0	0
Mercer County	11-1-2005	Drought	0	0	0	0
Mercer County	12-1-2005	Drought	0	0	0	0
Mercer County	1-1-2006	Drought	0	0	0	0
Mercer County	2-1-2006	Drought	0	0	0	0
Mercer County	3-1-2006	Drought	0	0	0	0
Mercer County	7-17-2012	Drought	0	0	0	0
Mercer County	8-7-2012	Drought	0	0	0	0
Mercer County	11-1-2012	Drought	0	0	0	0
Mercer County	9-3-2013	Drought	0	0	0	0
Mercer County	10-1-2013	Drought	0	0	0	14.860M

Probability

Mercer County HVA states there is a low probability that a drought will occur with an overall risk of 19%. Mercer County THIRA did not list drought as a hazard.

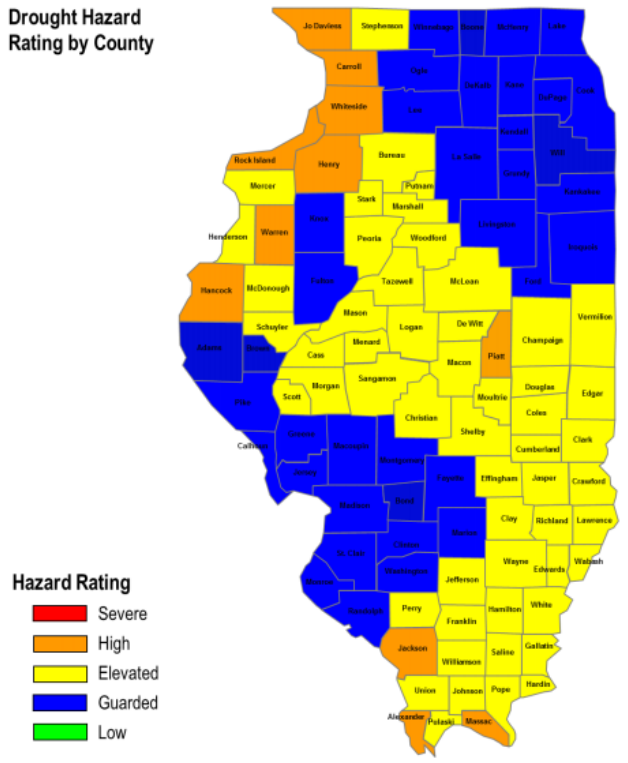
Magnitude and Severity

If a drought were to occur in Mercer County, according to Mercer County HVA, the human impact and business impact are low risk with property impact being a moderate risk. Mercer County is moderately prepared and also holds a moderate rating for both internal and external response.

The Illinois State Climatologist Office uses the following data chart to determine the intensity of a drought:

Drought Duration	Moderate Drought	Severe Drought
3 months	45 to 60%	Less than 45%
6 months	56 to 70%	Less than 56%
12 months	70 to 80%	Less than 70%
24 months	78 to 90%	Less than 78%

(Illinois State Climatologists Office)



III-120

Warning Time

Scientists don't know how to predict drought a month or more in advance for most locations. Predicting drought depends on the ability to forecast two fundamental meteorological surface parameters, precipitation and temperature. From the historical record we know that climate is inherently variable. We also know that anomalies of precipitation and temperature may last from several months to several decades. How long they last depends on air–sea interactions, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of dynamically unstable synoptic weather systems at the global scale. The potential for improved drought predictions in the near future differs by region, season, and climatic regime.
(The National Drought Mitigation Center)

Duration

The beginning of a drought is difficult to determine. Several weeks, months, or even years may pass before people know that a drought is occurring. The end of a drought can occur as gradually as it began. Dry periods can last for 10 years or more.
(U.S. Geological Survey)

Definition of Earthquake

An earthquake is sudden shaking or vibration of the earth that may impose a direct threat to life and property. The shaking or vibration is caused by the breaking and shifting of rock beneath the earth's surface. The three general classes of earthquakes are tectonic, volcanic, and artificially produced. *(Linn County Multi-Jurisdictional Hazard Mitigation Plan) --------search other definitions*

Several earthquake swarms have been recorded in Illinois. The most notable was a series of over 140 small earthquakes centered near Olmsted in Pulaski County during the winter of 1983-1984.

Regional earthquakes

During the winter of 1811-1812 a series of 4 very large (magnitude greater than 7.0) occurred along the 3 separate faults in the New Madrid seismic zone. Within the 3 months of these large main shock earthquakes, over 1,900 aftershocks were recorded with five estimated at magnitude 6.7, ten similar in magnitude to the Charleston, Missouri 1895 magnitude 6.3 event, and 65 similar to the Mt. Carmel 5.4 magnitude event. These earthquakes were centered in the New Madrid area of Missouri, south and southwest of Illinois, where they caused severe damage. In 1811-1812, frightened settlers living along the Ohio, Wabash and Mississippi Rivers reported various types of liquefaction, such as sand blows, fissures, bank collapse, in the bottom lands of these river valleys. Evidence of liquefaction from several pre-historic earthquakes from New Madrid have shown that 1811-1812 sequence of earthquake events occurred about 1450 A.D, 900 A.D. and 300 A.D. The shortest interval between these events is about 350 years and the longest about 600 years (Tuttle & Schweig 1995 and Tuttle 2001) with magnitudes from 7 to 7.6. Liquefaction features along the Wabash Valley Fault Zone demonstrates that large earthquakes have occurred from about 2,000 to 12,000 years ago (Obermeier et al., 1992 and Munson and Munson, 1996). Some of these recent investigations, estimated several of the earthquake magnitudes to be 6.2 to 7.3 based on aerial extent of liquefaction features of similar age (Olson et al. 2005).

Other moderately large earthquakes have occurred in surrounding states. The most notable was one that struck in Missouri, just west of Cairo, Illinois on Halloween morning October 31 1895. This earthquake, with an estimated magnitude 6.2, broke hundreds of chimneys and plate glass windows in Cairo. This is the same event that caused many central Illinois residents to check for burglars in their basements. The Intensity in the Chicago area varied from IV to V. No severe damage was reported and many people did not feel the earthquake. The area damaged by this earthquake is shown in figure 11. As expected, this area tends to follow the major river valleys that are filled with thick, loose, sediments. From Bakun et al., 2002.

Magnitude 6.8 anywhere - Intensity VIII - IX

A recent study of earthquakes around the world within stable interior parts of continents show that earthquakes with magnitudes up to 6.8 can occur anywhere in these settings. A magnitude 6.8 event would produce intensities of VIII to IX.

(2013 Illinois Hazard Mitigation Plan)

Potential Hazard Area

The potential hazard area for an earthquake in Mercer County is county wide.

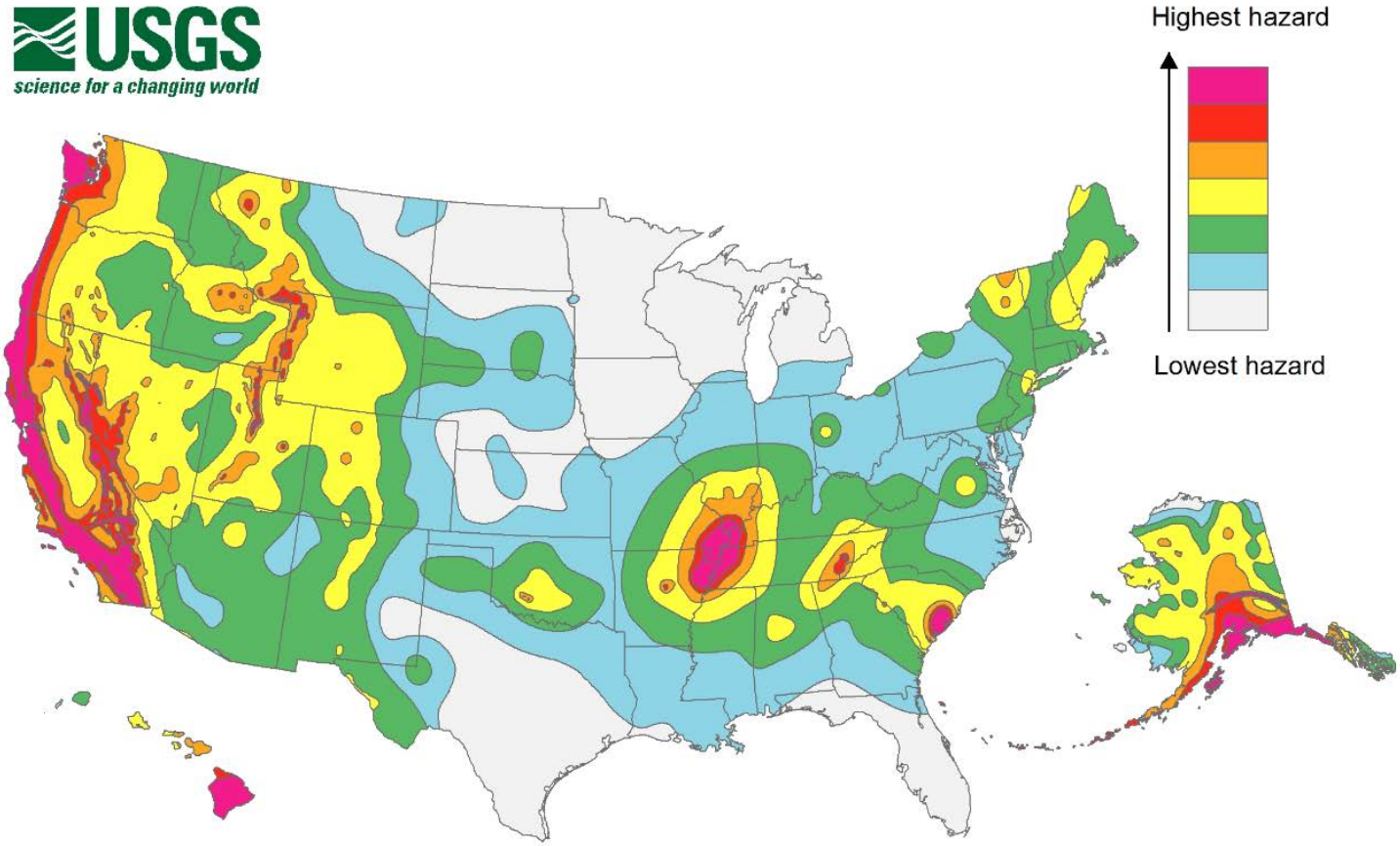
Historical Occurrences

Earthquakes are relatively common in Southern Illinois close to the New Madrid Fault Zone. As you travel north in Illinois the frequency of earthquakes drop significantly. There has never been an earthquake epicenter in Mercer County. However, earthquakes that occur in other places have been felt in Mercer County but no damage has ever been reported.
(Illinois State Geological Survey)

Probability

The probability of an earthquake happening in Mercer County is so minimal that the risk was not assessed in either the Mercer County HVA or Mercer County THIRA. It is possible that Mercer County could experience a minor earthquake but it is not probable that it would cause loss of life or much damage.

The diagram below shows the hazard level for earthquakes across the United States. Northern Illinois is in the second lowest hazard level. This indicates that there is potential for earthquakes in Mercer County but the likelihood is very low.



Magnitude and Severity

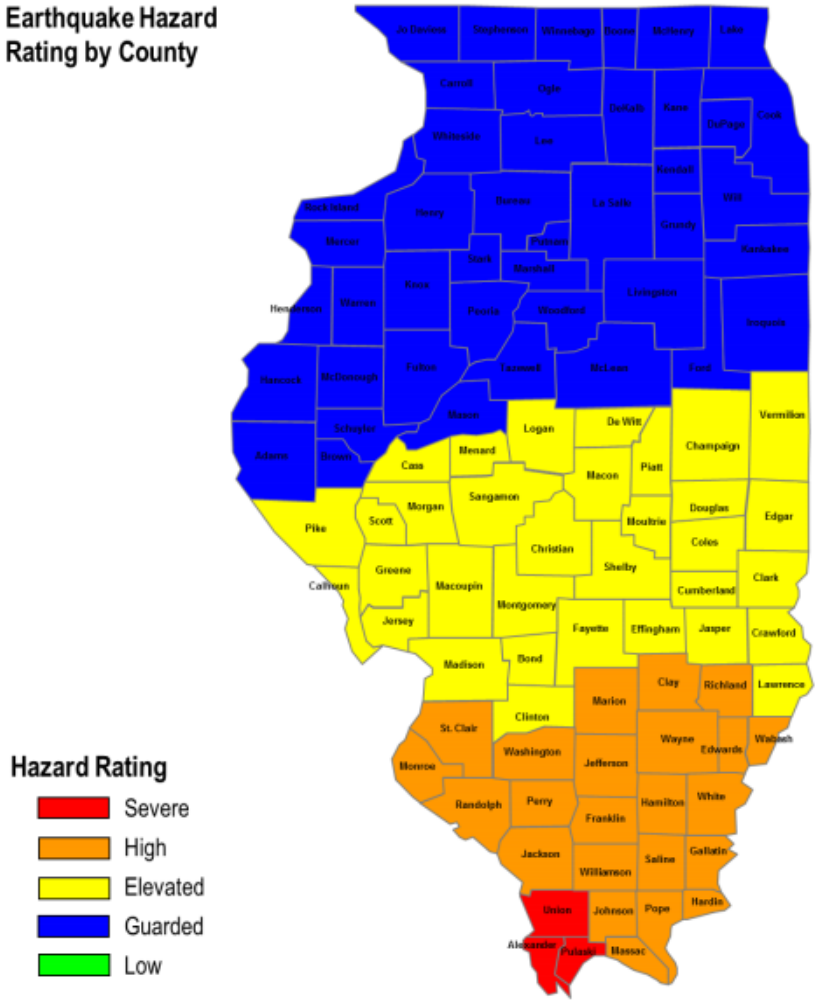
Earthquake magnitude is measured using the Richter scale. It ranks earthquakes on a scale of 1 to 10. Each number represents an earthquake that is 10 times stronger than the number before it. The diagram below shows the effect of each magnitude. *(United States Geological Survey)*

Magnitude	Description	Mercalli intensity	Average earthquake effects	Average frequency of occurrence (estimated)
Less than 2.0	Micro	I	Microearthquakes, not felt, or felt rarely. Recorded by seismographs.[16]	Continual/several million per year
2.0–2.9	Minor	I to II	Felt slightly by some people. No damage to buildings.	Over one million per year
3.0–3.9		II to IV	Often felt by people, but very rarely causes damage. Shaking of indoor objects can be noticeable.	Over 100,000 per year
4.0–4.9	Light	IV to VI	Noticeable shaking of indoor objects and rattling noises. Felt by most people in the affected area. Slightly felt outside. Generally causes none to minimal damage. Moderate to significant damage very unlikely. Some objects may fall off shelves or be knocked over.	10,000 to 15,000 per year
5.0–5.9	Moderate	VI to VIII	Can cause damage of varying severity to poorly constructed buildings. At most, none to slight damage to all other buildings. Felt by everyone.	1,000 to 1,500 per year
6.0–6.9	Strong	VII to X	Damage to a moderate number of well-built structures in populated areas. Earthquake-resistant structures survive with slight to moderate damage. Poorly designed structures receive moderate to severe damage. Felt in wider areas; up to hundreds of miles/kilometers from the epicenter. Strong to violent shaking in epicentral area.	100 to 150 per year
7.0–7.9	Major	VIII or greater[17]	Causes damage to most buildings, some to partially or completely collapse or receive severe damage. Well-designed structures are likely to receive damage. Felt across great distances with major damage mostly limited to 250 km from epicenter.	10 to 20 per year
8.0–8.9	Great		Major damage to buildings, structures likely to be destroyed. Will cause moderate to heavy damage to sturdy or earthquake-resistant buildings. Damaging in large areas. Felt in extremely large regions.	One per year
9.0 and greater			At or near total destruction – severe damage or collapse to all buildings. Heavy damage and shaking extends to distant locations. Permanent changes in ground topography.	One per 10 to 50 years

(Based on U.S. Geological Survey documents.)[18]

(https://en.wikipedia.org/wiki/Richter_magnitude_scale)

IEMA Illinois Natural Hazard Mitigation Plan



III-141

Warning Time

There is no warning time for an earthquake as they cannot be predicted at this point. Earthquakes can be especially dangerous due to the surprise aspect of the earthquake.

Duration

According to the University of Utah seismograph website earthquakes only last a few seconds. You can expect a moderate earthquake to shake the ground for 10 to 30 seconds as the seismic waves pass through the area. After the initial earthquake the ground may continue to make small movements and adjustments and cause aftershocks for up to several months. *(http://quake.utah.edu/regional-info/earthquake-faq#B)*

Definition of Excessive Heat

Excessive heat occurs from a combination of high temperatures (significantly above normal) and high humidity. At certain levels, the human body cannot maintain proper internal temperatures and may experience heat stroke. The "Heat Index" is a measure of the effect of the combined elements on the body. *(National Weather Service)*

Description Extreme heat for a region is temperatures that hover 10 degrees or more above the average high temperature for several days to several weeks. The definitions do vary by region; however, a heat wave is usually defined as a period of at least three consecutive days above 90 degrees. Heat kills by pushing the human body beyond its limits. Normally the body's internal thermostat produces perspiration that evaporates to cool and regulate the body's temperature to 98.6 degrees. Sweating does nothing to cool the body unless the water is removed by evaporation. High humidity retards this process. Because the body has been robbed of its ability to cool itself, the body must work much harder to maintain a normal temperature in extreme heat and high humidity. A sunburn will slow the skin's ability to release excess heat. Young children, the elderly, those who are sick, overweight or have alcohol problems and men in general, (because they sweat more and become more quickly dehydrated) are more susceptible to extreme heat. The chronically ill and elderly are often taking prescription medications (e.g., diuretics, anticholinergic, antipsychotics and antihypertensive) that interfere with the body's ability to dissipate heat. Usually the victims have been overexposed to heat or have over-exercised for their age and physical condition. Stagnant atmospheric (humid and muggy) conditions and poor air quality can induce heat-related illnesses. In addition to air quality, concrete and asphalt store heat longer and gradually release the heat at night which produces higher nighttime temperatures. Therefore, people living in urban areas may be at a greater risk than people in rural regions. On the next page is a heat index chart that allows you to identify the apparent temperature. Find where the temperature across the top of the chart and the relative humidity down the left side of the chart intersect for the apparent temperature.
(2013 Illinois Natural Hazard Mitigation Plan)

EXTREME HEAT TERMS

Heat Wave	Prolonged period of excessive heat often combined with excessive humidity.
Heat Index	A number in degrees Fahrenheit (F) that tells how hot it feels when relative humidity is added to the air temperature. The Heat Index assumes an average-sized adult, with clothing, in the shade, with a 5-mph wind. Exposure to full sunshine can increase the heat index by 15 degrees.
Heat Cramps	Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe of heat related medical problems, they are often the first signal that the body is having trouble with the heat.
Heat Exhaustion	Typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.
Heat Stroke	Heat stroke is life-threatening. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.
Sun Stroke	Another term for heat stroke.

Source: Are You Ready?, FEMA, H-34/September, 2002

(2013 Illinois Natural Hazard Mitigation Plan)

The NWS offices with responsibility for counties in the State of Illinois will initiate alert procedures to warn people of the impending danger due to excessive heat. When the heat index is forecast to exceed 105 - 110 degrees for at least two consecutive days, NWS procedures are:

I. Heat Index values will be included in all NWS forecasts.

II. “Hazardous Weather Outlook” products will highlight any threat of excessive heat for the following 1 to 7 day period.

III. “Excessive Heat Warning” products will present a detail discussion of:

A. The extent and expected duration of the hazard, including forecast temperatures and heat index values.

B. Who is most at risk

C. Safety rules for reducing the risk

IV. Assist state and local health officials to prepare emergency messages prior to and during excessive heat events. Meteorological information from “Excessive Heat Warnings” will be included, as well as more detailed medical information, advice, and names and telephone numbers of health officials.

V. Forecasts, outlooks and warnings will be released by the NWS to the media, over NOAA's All Hazards Weather Alert Radio system, and via NEWS web sites.

Each National Weather Service Forecast Office issues the following heat related products as conditions warrant.

- Excessive Heat Outlooks – Issued when the potential exists for an excessive heat event in the next 3-7 days.

- Excessive Heat Watches – Issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours.

- Excessive Heat Warnings/Advisories – Issued when an excessive heat event is expected in the next 36 hours.

This warning action by NWS coupled along with the action now being taken by some of the larger cities initiating a system to contact and check on the elderly, will not prevent a heat wave but will significantly reduce the number of fatalities resulting from a heat wave.
(2013 Illinois Natural Hazard Mitigation Plan)

Potential Hazard Area

The potential hazard area for extreme heat in Mercer County is county wide.

Historical Occurrences

Below is a chart showing events of extreme heat in Mercer County as listed on the National Climatic Data Center website. These events all covered a large area that included Mercer County.

Location	Event	Start Date	Start Time	End Date	End Time
Mercer County	Excessive Heat	7-25-1997	4:00am	7-27-1997	8:00pm
Mercer County	Excessive Heat	7-19-1999	4:00am	7-31-1999	8:00pm
Mercer County	Excessive Heat	8-31-2000	4:21am	8-31-2000	11:00pm
Mercer County	Excessive Heat	7-4-2012	12:00pm	7-7-2012	7:00pm
Mercer County	Excessive Heat	8-26-2013	11:00am	8-30-2013	6:00pm

(National Climatic Data Center)

Probability

According to Mercer County HVA there is a moderate rating that extreme temperatures will occur. HVA analyzed the risk for extreme temperatures and this could be for heat or cold. The overall risk of extreme temperatures in Mercer County was rated at 30%.

Magnitude and Severity

Mercer County HVA rated human and property impact low with business impact being moderate for extreme temperatures. In regards to preparedness, response time, effectiveness and resources Mercer County rated high on the HVA. External response, as far as, community mutual aid staff and supplies was scored a 2 for moderate.

The heat index scale is used to measure extreme heat. The heat index is an apparent temperature that takes into account how hot it feels when accounting for temperature and humidity. It considers the conditions the body would feel as an average sized clothed adult in a shaded location.

Heat Index Chart (Temperature & Relative Humidity)

RH (%)	Temperature (° F)															
	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
90	119	123	128	132	137	141	146	152	157	163	168	174	180	186	193	199
85	115	119	123	127	132	136	141	145	150	155	161	166	172	178	184	190
80	112	115	119	123	127	131	135	140	144	149	154	159	164	169	175	180
75	109	112	115	119	122	126	130	134	138	143	147	152	156	161	166	171
70	106	109	112	115	118	122	125	129	133	137	141	145	149	154	158	163
65	103	106	108	111	114	117	121	124	127	131	135	139	143	147	151	155
60	100	103	105	108	111	114	116	120	123	126	129	133	136	140	144	148
55	98	100	103	105	107	110	113	115	118	121	124	127	131	134	137	141
50	96	98	100	102	104	107	109	112	114	117	119	122	125	128	131	135
45	94	96	98	100	102	104	106	108	110	113	115	118	120	123	126	129
40	92	94	96	97	99	101	103	105	107	109	111	113	116	118	121	123
35	91	92	94	95	97	98	100	102	104	106	107	109	112	114	116	118
30	89	90	92	93	95	96	98	99	101	102	104	106	108	110	112	114

***Note:** Exposure to full sunshine can increase HI values by up to 15° F*

Source: *Meteorology for Scientists and Engineers, 2nd edition* by Roland B. Stull
HI = Heat Index *T* = Temperature (° F) *RH* = Relative Humidity (%)
Below are terms to become familiar with:

(2013 Illinois Natural Hazard Mitigation Plan)

The Illinois State Climatologist Office put out a list of temperature levels and the heat illnesses that can be associated with them. The higher the temperature the more severe the health consequence.

- Values of 80 to 90: fatigue possible with prolonged exposure and/or physical activity
- Values of 90 to 105: sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity.
- Values of 105 to 130: sunstroke, heat cramps, and heat exhaustion likely and heatstroke possible with prolonged exposure and/or physical activity.
- Values of 130 or higher: heatstroke/sunstroke highly likely with continued exposure. *(Illinois State Climatologists Office)*

Warning Time

According to the National Weather Service, there are various levels to its heat related watches and warnings. These warnings and watches are based on time, temperature and local conditions for each heat event.

- Excessive Heat Outlook – These are early warnings issued when the potential for an excessive heat event has the potential of occurring within the next 3-7 days
- Heat Advisory – These are issued with 12 hours of dangerous heat conditions. The criteria for heat advisory is when the maximum heat index will be over 100 for at least 2 days and the nighttime air temperature does not drop below 75.
- Excessive Heat Warning – These are issued with 12 hours of dangerous heat conditions. The criteria for heat advisory is when the maximum heat index will be over 105 for at least 2 days and the nighttime air temperature does not drop below 75.
  (National Weather Service)

Duration

Duration of extreme heat can vary. See excessive heat outlook, heat advisory, and excessive heat warning explanations above. This should be used as an example of possible duration. However, duration can last much longer as the above explains the minimum.

Definition of Flash Flood

A rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within six hours of the causative event (e.g., intense rainfall, dam failure, ice jam). However, the actual time threshold may vary in different parts of the country. Ongoing flooding can intensify to flash flooding in cases where intense rainfall results in a rapid surge of rising flood waters. *(National Weather Service)*

Potential Hazard Area

The potential hazard area for extreme heat in Mercer County is county wide.

Historical Occurrences

Location	Date	Time	Hazard	Mag.	Deaths	Injuries	Property Damage	Crop Damage
Countywide	2-20-1997	1600	Flash Flood		0	0	0	0
Countywide	10-17-1998	1548	Flash Flood		0	0	0	0
Keithsburg	5-31-2000	0330	Flash Flood		0	0	0	0
Countywide	4-30-2003	2000	Flash Flood	7	0	0	10.000M	0
Eliza	5-30-2004	0500	Flash Flood		0	0	3.00K	0
Swedona	5-30-2004	0830	Flash Flood		0	0	5.00K	0
Keithsburg	6-14-2008	0743	Flash Flood		0	0	250.00K	0
Eliza	5-13-2010	0300	Flash Flood		0	0	5.000M	0
Aledo	6-18-2010	1949	Flash Flood		0	0	50.00K	0
Preemption	5-26-2013	2015	Flash Flood		0	0	0	0
Aledo -airport	7-6-2015	1810	Flash Flood		0	0	0	0

Probability

Most flash flooding is the result of a slow moving thunderstorm and can happen anywhere. Due to this factor, all municipalities should prepare for and expect flash flooding at some point. Mercer County HVA and THIRA included flash flooding in the larger flooding category so there are no detailed scores or percentages for flash flooding.

Magnitude and Severity

Mercer County HVA and THIRA did not conduct a risk analysis on flash flooding, but rather left all flooding in one category. This makes the risk difficult to assess completely.

Warning Time

Flash Flood Warning: Take Action! A Flash Flood Warning is issued when a flash flood is imminent or occurring. If you are in a flood prone area move immediately to high ground. A flash flood is a sudden violent flood that can take from minutes to hours to develop. It is even possible to experience a flash flood in areas not immediately receiving rain. *(www.floodsafety.noaa.gov)*

Most flash floods occur when there is a heavy amount of precipitation falling in an area and that water is then channeled through streams or narrow gullies. Flash floods may take minutes or hours to develop. It is possible to experience a flash flood without witnessing any rain. In this case, there would be heavy rain in areas upstream of the warned location. *(Wikipedia)*

Duration

The duration of a flash flood is dependent on the event causing the flash flooding.

Definition of Flood

Any high flow, overflow, or inundation by water which causes or threatens damage. *(National Weather Service)*

Except for fire, the most common hazard in the United States is flooding with thousands occurring each year. Flooding occurs along the coast, rivers, lakes, small streams, gullies, creeks, and in typically dry streambeds. Sheet flow can occur when the land is saturated or impervious. Ponding can occur in low lying ground. Street flooding and basement flooding are often associated with overwhelmed storm water systems. The standard definition of a flood is "A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land". A simpler definition is too much water in the wrong place. Since water circulates from clouds to the soil to streams to rivers to the oceans and returns to the clouds, a scientific definition of a flood is an imbalance in the "hydrological system" with more water flowing through the system than the system can draw off.

Floods are not all alike:

Riverine Floods: Develop slowly, sometimes over a period of days or weeks.

Flash Floods: Develop quickly, sometimes in just a few minutes. Usually flash floods are the result of intense storms dropping large amounts of rain within a brief period.

Overland Floods: Occurs outside a defined river or stream (e.g. sheet flow or ponding in a low lying area)

Aquifer Flood: Water is expelled from a subterranean geologic formation to the surface causing flooding in the immediate area.

Subterranean Flood: Water floods into tunnels that are normally dry.

Snow melt filling rivers too quickly, heavy rainfall associated with slow-moving, low-pressure or frontal storm systems or storm surge create excess water. This water accumulates and overflows onto adjacent lands not normally covered by water. These floods can occur any time of the year, any time of the day or night and in any part of the country. Flooding can be local, impacting a neighborhood or community, or very large, affecting entire river basins and multiple states. The severity of floods is determined by the amount of rainfall or other water source, duration, topography, ground cover, frozen soil, wet or saturated soil that can't hold any more water, full reservoirs, high river or stream levels, ice covered rivers or urbanization (lots of buildings, parking lots and roads). The majority of scientists believe that global warming causes extremes in weather that have increased flooding. Human activity influences the frequency and severity of floods.

An aquifer is a subterranean geologic formation composed of permeable layers of rock or sand that hold or transmit groundwater. Aquifer flooding is most often found in areas that have what is termed an "Unconfined Aquifer" underneath them. An unconfined aquifer is an aquifer that is close to the ground surface, with continuous layers of materials of high intrinsic permeability extending from the land surface to the base of the aquifer. Water is fed into the aquifer through a process called "Recharge". Recharge takes place when water seeps downward through the soil layer called the

unsaturated zone into the aquifer. Recharge can also occur through lateral ground water flow, or upward seepage from underlying strata. The water in the aquifer is always under pressure. This is normally not a problem, as the amount of water expelled from the aquifer by natural methods is equal to the amount entering the aquifer. If for any reason the amount of water entering the aquifer is greater than the amount expelled (for example seepage into the aquifer from unusually heavy rain causes the amount of water in the aquifer to rise dramatically faster than the water can be naturally expelled) the water in the aquifer, which is already under increased pressure, is placed under even greater pressure until the 2013 Illinois Hazard Mitigation Plan III-43 pressure is greater than the rock and sand of the aquifer can withstand and the water breaks out of the aquifer and rises to the surface where it causes surface flooding in the immediate area. An important thing to remember about aquifer flooding is that the area affected by the flooding may not have any history of flooding and may not even be located near any significant body of water. The only way to be certain that a locality is not susceptible to aquifer flooding is to undertake a systematic geologic study of the area. In Illinois, Mason County has a history of aquifer flooding. The aquifer was mapped by the State Water Survey using HMGP funds following floods in 1994.

Subterranean flooding occurs mainly in urban centers that are adjacent to significant bodies of water (i.e. rivers, lakes, and streams) or in urban centers situated in areas with high water tables. Subterranean flooding occurs when a normally dry tunnel running underneath an urban center such as a train tunnel, is breached. Some examples of a subterranean breach would be malicious action, internal tunnel damage as a result of train derailment, external tunnel damage as a result of sinking vessels, dredging or dropped objects, water main malfunction or structural failure of the tunnel itself. Once the tunnel is breached water from nearby bodies of water flows into the void. The weight of the water flooding the tunnel can cause extreme pressure on the foundations of nearby buildings, placing those buildings in danger of structural collapse, thus endangering lives and property.

Basement flooding causes significant damage in some urban areas, most commonly in older communities. The damage is exacerbated where there are combined storm water and sanitary sewers. When the capacity of storm sewers and waterways is exceed water backs up into streets, yards and basements. *(2013 Illinois Natural Hazard Mitigation Plan)*

Potential Hazard Area

Potential hazard area for flooding in Mercer County is in Keithsburg, New Boston, and Bay Island area.

Historical Occurrences

Flood - Federal Disaster Declaration History Since 1981 of flood events that affected Mercer County

FEMA DR #871 - Mercer County was one of thirty Illinois counties that were a part of this 1990 declaration. Heavy rain in May and June caused widespread flooding across the state.

FEMA DR #997 – This 1993 known as the Great Flood of 1993 prompted a disaster declaration encompassing thirty-nine Illinois counties.

FEMA DR #1368 – In April of 2001 heavy flooding devastated ten Illinois counties. In May a federal disaster was declared for the ten counties affected, including Mercer County. In all over $1.2 million in federal and state disaster assistance was extended to residents of the ten counties. Disaster housing grants accounted for $506,000 while the Small Business Administration (SBA) made $711,000 in low-interest in disaster loans. 6 families in Mercer County were approved for disaster housing grants which totaled $869.

FEMA DR#1771 - The flooding of June 2008 caused massive damage across the state. In total eighteen Illinois counties, including Henderson, were part of this disaster declaration. Individual assistance extended in this disaster is in excess of $15 million. Mercer County had 122 approved assistance applications totaling just over $480,000.
(Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010)

The table below is all of the recorded Mercer County flood events that were listed on NOAA storm events database and National Climatic Data Center.

Location	Date	Time	Hazard	Deaths	Injuries	Property Damage	Crop Damage
Mercer	4-8-1997	0600	Flood	0	0	0	0
Countywide	7-21-1998	2257	Flood	0	0	0	0
Mercer	6-2-2000	0830	Flood	0	0	0	0
Countywide	2-24-2001	0900	Flood	0	0	0	0
Mercer	4-15-2001	0500	Flood	0	0	0	0
Mercer	5-1-2001	0100	Flood	0	0	0	0
Keithsburg	5-17-2001	0700	Flood	0	0	0	0
New Boston	5-17-2001	0700	Flood	0	0	0	0
Aledo	5-12-2002	0500	Flood	0	0	0	0
Mercer	5-20-2003	0103	Flood	0	0	1.000M	0
Mercer	5-25-2004	1422	Flood	0	0	0	0
Mercer	6-1-2004	0000	Flood	0	0	0	0
New Boston	4-1-2008	0000	Flood	0	0	0	0
New Boston	5-1-2008	0000	Flood	0	0	0	0
New Boston	5-1-2008	0000	Flood	0	0	0	0
Eliza	6-1-2008	0000	Flood	0	0	0	0
Eliza	7-25-2010	2130	Flood	0	0	125.00K	0
New Boston	10-2-2010	2006	Flood	0	0	0	0
Keithsburg	10-3-2010	0745	Flood	0	0	0	0
Eliza	4-18-2011	0100	Flood	0	0	250.00K	0
Eliza	4-19-2013	0200	Flood	0	0	0	0
New Boston	6-2-2013	1200	Flood	0	0	0	0
New Boston	6-27-2013	2300	Flood	0	0	0	0
Eliza	6-26-2014	2300	Flood	0	0	0	0

(NOAA Storm Events Database, National Climatic Data Center)

Federally Declared Flood Disasters by County (January, 1981 – May, 2013)

County:	# of Declared Floods	County:	# of Declared Floods	County:	# of Declared Floods
Calhoun	12	Bureau	5	Williamson	3
Adams	11	Carroll	5	Henry	3
Cook	11	Crawford	5	Kendall	3
Greene	11	DuPage	5	Knox	3
Cass	10	Henderson	5	Livingston	3
Monroe	10	Tazewell	5	McHenry	3
Pike	10	Mercer	5	Putnam	3
Schuyler	10	Kane	5	Shelby	3
Alexander	9	Lake	5	Warren	3
Jersey	9	Lawrence	5	Champaign	2
Hancock	9	Franklin	5	Coles	2
Randolph	8	Hamilton	4	DeWitt	2
St. Clair	8	Jasper	4	Edgar	2
Scott	8	Menard	4	Edwards	2
Mason	8	Saline	4	Effingham	2
Brown	8	Sangamon	4	Ford	2
Jackson	7	Stephenson	4	Jefferson	2
Madison	7	Wabash	4	Macon	2
Pulaski	7	White	4	Montgomery	2
Fulton	7	Clark	4	Piatt	2
Douglas	6	DeKalb	4	Washington	2
LaSalle	6	Marshall	4	Wayne	2
Rock Island	6	McDonough	4	Bond	1
Whiteside	6	Ogle	4	Boone	1
Will	6	Peoria	4	Christian	1
Winnebago	6	Cumberland	3	Clay	1
Woodford	6	Hardin	3	Clinton	1
Union	6	Iroquois	3	Fayette	1
Grundy	6	Macoupin	3	Johnson	1
Gallatin	5	Marion	3	Lee	1
Jo Daviess	5	Moultrie	3	Logan	1
Massac	5	Perry	3	Stark	1
Morgan	5	Richland	3	Kankakee	0
Pope	5	Vermillion	3	McLean	0

Probability

Mercer County borders the Mississippi River and is crossed by several large creeks including Pope Creek and Edwards River. These bodies of flowing water make the county susceptible to flooding.

HVA results show that the probability of a flood occurring in Mercer County is high with the overall risk being 78%.

Mercer County THIRA scored flood risk at a moderate likelihood of occurring and the overall risk being 44%.

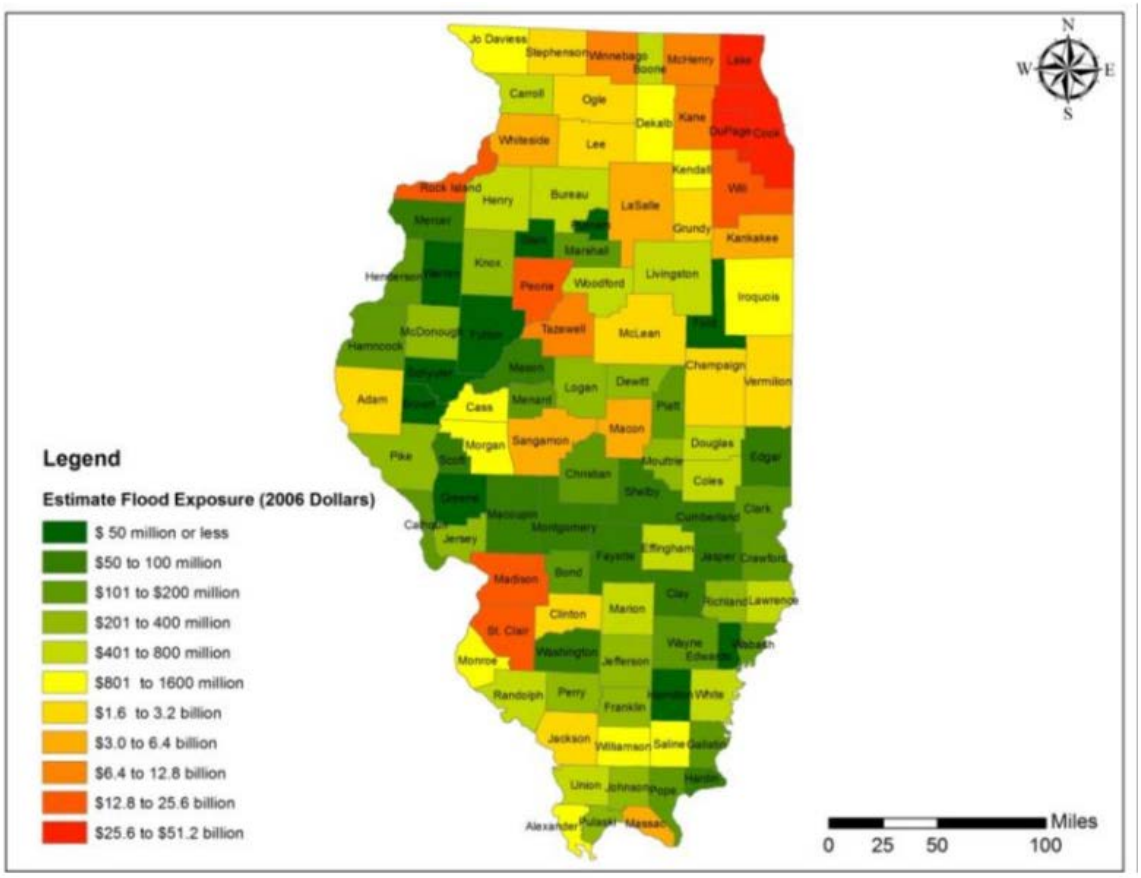


Figure 3 - Estimated flood exposure on 100-year floodplains aggregated by County

Magnitude and Severity

Mercer County HVA shows that human impact of a flood in Mercer County would be moderate while property and business impact would be high. Mercer County is highly prepared for a flood. Internal response to flooding is moderate, but external response needs some improvement as that category scored low.

Mercer County THIRA shows that human impact would be moderate as 10% to 25% of the community and government would be affected. Property impact would be high and business impact rated at moderate. Matching Mercer County HVA, Mercer County THIRA also states that Mercer County is highly prepared for a flood. Both internal and external response during a flood scored moderate.

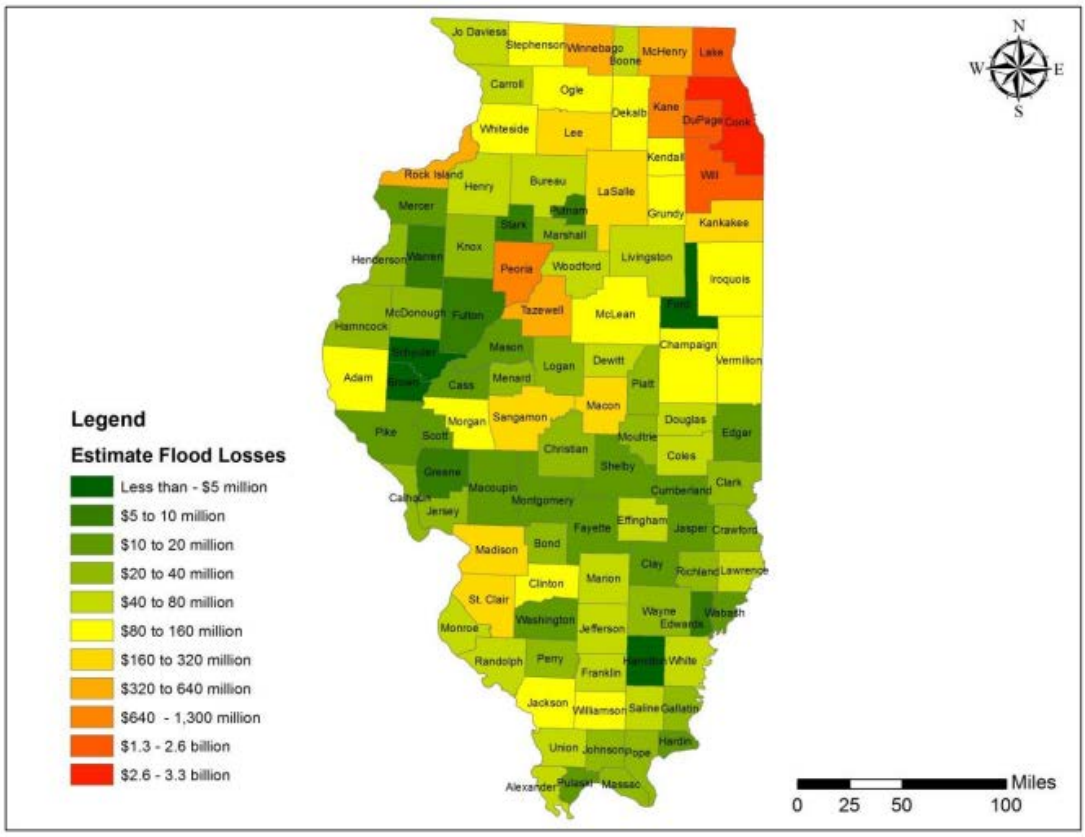


Figure 6- Estimated flood loss on the 100-year floodplain by county.

Warning Time

While it is hard to pin point how long of a warning can be given for flooding the National Weather Service does put out flood advisory, flood watch, and/or flood warning prior to a flood occurring.

- Flood Warning: Take Action! A Flood Warning is issued when flooding is imminent or occurring.
- Flood Watch: Br Prepared: A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is possible.

- Flood Advisory: Be Aware: A Flood Advisory is issued when flooding is not expected to be bad enough to issue a warning. However, it may cause significant inconvenience, and if caution is not exercised, it could lead to situations that may threaten life and/or property. *(www.floodsafety.noaa.gov)*

Duration

Duration of a flood is also hard to give an exact number as flooding has many factors to consider and can be weather dependent.

Definition of Severe Thunderstorm

A thunderstorm that produces a tornado, winds of at least 58 mph (50knots), and/or hail at least 1" in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph (35 knots) and/or hail of at least 1" is defined as approaching severe. *(National Weather Service)*

A Thunderstorm by itself is simply a rainstorm that also produces lightening. They form as a result of convection in the atmosphere transporting moisture up through the atmosphere where it condenses. Thunderstorms are very common. In order for a thunderstorm to become a severe thunderstorm it must meet one of the two requirements:

- It must have hail of at least one inch in diameter
- It must produce winds of at least 58 mph

There are several threats associated with severe weather. They include, lightening, wind, hail, flash floods and tornados. Lightening and flash floods can be associated with any thunderstorm. High winds, hail and tornados are associated with severe thunderstorms.
(National Severe Storm laboratory)

In Illinois thunderstorms occur when there is a collision of moist, warm air moving north from the Gulf of Mexico with colder fronts moving east from the Rocky Mountains resulting in cold air overriding a layer of warm air causing the warm air to rise rapidly. Thunderstorms may occur singly, in clusters, or in lines. In the course of a few hours, it is possible for several thunderstorms to affect one location or a single thunderstorm to affect one location for an extended time. Thunderstorms typically are 15 miles in diameter and produce heavy rain anywhere from 30 minutes to an hour. Of the estimated 100,000 thunderstorms each year approximately 10 percent are classified severe. Severe storms either produce hail at least one inch in diameter, have winds of 58 miles per hour or higher, or produce a tornado. In Illinois, severe thunderstorms frequently occur in the late afternoon or evening. Thunderstorms can bring heavy rain, strong winds, hail, lightning and tornadoes. Thunderstorms can cause several types of damaging wind. The public is not as familiar with the extent of damage that may accompany a downburst or straight line winds as they are with tornadoes.

A downward rush of cool descending air from a thunderstorm is a downburst. The air rushing to the ground may look like a cloud or shaft of heavy rain. Once the air strikes the ground at a high speed, the air usually spreads out in all directions. The wind may be 100-150 miles per hour which is as strong as an EF1 or EF2 tornado and exceeds the lower limit of a hurricane. Downburst winds will damage roofs, overturn or push mobile homes off foundations, push autos off the road and may destroy attached garages. A linear group of thunderstorms, typically ahead of a cold front, can produce what is known as “straight-line” winds. High wind from straight-line gusts can reach speeds of 40 to 50 mph up to 110 mph. The width of the damage path can be several miles up to tens of miles. The damage path length can extend from tens of miles to hundreds of miles. Thunderstorm downbursts and straight-line winds are the leading cause of wind related damage.

According to the National Weather Service; some weather patterns can produce what is called a derecho. A derecho is a fast moving windstorm that is made up of thunderstorms that repeatedly develop along the leading edge. These lines or storms can move very quickly and produce widespread straight-line winds over long periods of time. Derechos can move anywhere from 35-70 mph and last 8 hours or more. Most derechos that produce severe weather move at speeds greater than 50 mph. Warm season events probably move a little slower than cold season events (www.nssl.noaa.gov).

Lightning occurs during all thunderstorms and is an electrical discharge that results from the buildup of positive and negative charges. Lightning appears as a "bolt" when the buildup becomes strong with the flash of light occurring between the clouds and the ground. In a split second the bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit. Thunder is the rapid heating and cooling of air near the lightning.

In addition to lightning, a thunderstorm can also produce hail which can be very destructive to plants/crops, animals and property causing over a billion dollars in damage each year nationally. Hail can be as small as a pea and as large as a softball. Most hail has a diameter smaller than a dime; however, there are records of hailstones weighing more than a pound.

These balls of ice are a large frozen raindrop. Super cooled water droplets hit ice crystals and freeze instantly. The hailstones grow as more and more droplets hit these ice balls and freeze as they fall through the clouds. As the hailstones reach the bottom of the clouds the wind updrafts may send the hail back up into the cloud to repeat the process and continue to grow. When the weight of the hailstones becomes too heavy to be supported by the updrafts, they fall out of the clouds. The very largest recorded hailstone in Illinois was over 5.6 inches in diameter and weighed 26 ounces, however, usually large hail is less than two inches in diameter and as stated above most is smaller than a dime. Most thunderstorms have hail, but not all thunderstorms produce hail at the ground. Temperatures at the upper levels of a thunderstorm are well below freezing, allowing for the development of hail, but sometimes it melts before reaching the surface of the earth. (www.nssl.noaa.gov)

(2013 Illinois Hazard Mitigation Plan)

Potential Hazard Area

The potential hazard area for a severe thunderstorm in Mercer County is county wide.

Historical Occurrences

2013 Illinois Hazard Mitigation Plan										
County		Number of Severe Storms 1950-2012 (NCDC)		Total Recorded Loss (NCDC)		Average $ in property damage per event (NCDC)		Annual Probability of Event		Estimated Annual Loss
Mercer		166		$135,553,600		$81,648.19		267.7%		$218,606.45

Historical occurrences of severe thunderstorms can be found by searching for wind damaging events. The National Climatic Data Center keeps track of damaging wind events associated with thunderstorms. Thunderstorm Wind events found on National Climatic Data Center site from 1957 to 2014 are below.

Location	Date	Time	Event Type	Wind speed (KTS)	Deaths	Injuries	Property Damage	Crop Damage
Mercer County	6-5-1957	2000	Wind	0	0	0	0	0
Mercer County	5-14-1961	1320	Wind	0	0	0	0	0
Mercer County	6-7-1961	1430	Wind	55kts	0	0	0	0
Mercer County	4-24-1965	0200	Wind	0	0	0	0	0
Mercer County	4-24-1965	0230	Wind	0	0	0	0	0
Mercer County	5-4-1965	1603	Wind	53kts	0	0	0	0
Mercer County	5-15-1965	1915	Wind	0	0	0	0	0
Mercer County	4-30-1973	1745	Wind	0	0	0	0	0
Mercer County	6-20-1974	1730	Wind	0	0	0	0	0
Mercer County	5-20-1975	1720	Wind	0	0	0	0	0
Mercer County	5-20-1975	1736	Wind	52kts	0	0	0	0
Mercer County	7-23-1975	1525	Wind	0	0	0	0	0
Mercer County	7-23-1975	1555	Wind	0	0	0	0	0
Mercer County	6-17-1978	1936	Wind	52kts	0	0	0	0
Mercer County	7-30-1979	0531	Wind	53kts	0	0	0	0
Mercer County	7-5-1980	0200	Wind	0	0	0	0	0
Mercer County	8-4-1980	1740	Wind	50kts	0	0	0	0
Mercer County	12-27-1982	2100	Wind	0	0	0	0	0
Mercer County	4-29-1984	1915	Wind	0	0	0	0	0
Mercer County	5-6-1986	1633	Wind	60kts	0	0	0	0

Location	Date	Time	Event Type	Wind speed (KTS)	Deaths	Injuries	Property Damage	Crop Damage
Mercer County	8-21-1987	0330	Wind	0	0	0	0	0
Mercer County	5-8-1988	1430	Wind	0	0	0	0	0
Mercer County	8-18-1988	1500	Wind	0	0	0	0	0
Mercer County	5-24-1989	0500	Wind	71kts	0	0	0	0
Mercer County	6-27-1990	1856	Wind	52kts	0	0	0	0
Mercer County	10-17-1990	1600	Wind	0	0	0	0	0
Mercer County	6-21-1991	2000	Wind	50kts	0	0	0	0
Mercer County	11-29-1991	2250	Wind	0	0	0	0	0
Mercer County	11-29-1991	2319	Wind	0	0	3	0	0
Mercer County	7-2-1992	1150	Wind	0	0	0	0	0
Aledo	8-15-1993	0330	Wind	0	0	0	0	0
Preemption	4-9-1995	0007	Wind	0	0	0	0	0
Sterling	8-9-1995	1710	Wind	0	0	0	5.00K	0
Rock Island	8-9-1995	1744	Wind	0	0	0	0	0
Rock Island	8-9-1995	1800	Wind	0	0	0	0	0
Kewanee	8-9-1995	1815	Wind	0	0	0	2.00K	0
Joy	4-5-1997	1435	Wind	52kts	0	0	0	0
North Henderson	4-5-1997	1450	Wind	52kts	0	0	0	0
Aledo	4-5-1997	1455	Wind	50kts	0	0	0	0
New Windsor	4-5-1997	1455	Wind	50kts	0	0	0	0
Keithsburg	6-21-1997	0425	Wind	60kts	0	0	15.00K	0
Aledo	6-21-1997	0430	Wind	60kts	0	0	0	0
Viola	6-21-1997	0435	Wind	60kts	0	0	0	0
Viola	7-19-1997	1445	Wind	60kts	0	0	0	0
Viola	7-19-1997	1445	Wind	60kts	0	0	0	0
Aledo	7-19-1997	1457	Wind	60kts	0	0	0	0
Viola	7-19-1997	1500	Wind	70kts	0	0	0	0
Gilchrist	7-19-1997	1500	Wind	60kts	0	0	0	0
Matherville	7-19-1997	1505	Wind	60kts	0	0	0	5.00K
Countywide	7-19-1997	1530	Wind	60kts	0	0	0	0
Aledo	3-27-1998	1849	Wind	55kts	0	0	0	0
Preemption	3-27-1998	1910	Wind	0	0	0	3.00K	0
Countywide	6-29-1998	1422	Wind	56kts	0	0	0	0

Location	Date	Time	Event Type	Wind speed (KTS)	Deaths	Injuries	Property Damage	Crop Damage
Joy	6-4-1999	1340	Wind	52kts	0	0	0	0
Aledo	6-6-1999	1515	Wind	55kts	0	0	0	0
Viola	7-27-1999	2330	Wind		0	0	0.50K	0
Aledo	6-13-2000	1520	Wind		0	0	1.00K	0
Preemption	10-3-2000	2045	Wind	52	0	0	0	0
Viola	5-10-2001	2140	Wind	52	0	0	0	0
Seaton	6-14-2001	1650	Wind	52	0	0	0	0
Countywide	6-14-2001	1655	Wind	61	0	0	0	0
Seaton	6-14-2001	1705	Wind	61	0	0	0	0
Seaton	8-2-2001	1510	Wind	52	0	0	0	0
Aledo	3-9-2002	300	Wind	70	0	0	0	0
Hamlet	3-9-2002	300	Wind	61	0	0	0	0
Norwood	3-9-2002	315	Wind	52	0	0	0	0
Aledo	6-10-2002	1500	Wind	57	0	0	0	0
Sherrard	6-10-2002	1540	Wind	52	0	0	0	0
Countywide	12-18-2002	1200	Wind	70	0	0	0	0
Countywide	7-20-2003	2334	Wind	70	0	0	10.000M	3.000M
New Windsor	5-20-2004	1944	Wind	61	0	0	5.00K	10.00K
Countywide	6-8-2005	1153	Wind	57	0	0	10.00K	20.00K
Aledo	3-12-2006	1918	Wind	52	0	0	5.00K	0
Matherville	3-12-2006	1925	Wind	52	0	0	5.00K	0
Matherville	3-12-2006	2218	Wind	52	0	0	6.00K	0
North Henderson	3-12-2006	2220	Wind	52	0	0	6.00K	0
Countywide	4-13-2006	2050	Wind	70	0	0	100.00K	0
Joy	4-13-2006	2050	Wind	78	0	0	250.00K	0
Millersburg	4-13-2006	2051	Wind	65	0	0	50.00K	0
Aledo	4-13-2006	2059	Wind	57	0	0	10.00K	0
Matherville	4-13-2006	2103	Wind	61	0	0	35.00K	0
Aledo	3-31-2007	1630	Wind	52	0	0	0	0
North Henderson	6-1-2007	1240	Wind	56	0	0	0	0
Griffin	7-21-2008	510	Wind	61	0	0	25.00K	0
Sherrard	7-21-2008	513	Wind	61	0	0	0	0
Sherrard	7-21-2008	513	Wind	61	0	0	0	0
Sherrard	7-29-2008	1655	Wind	52	0	0	0	0
Hamlet	6-27-2009	1648	Wind	52	0	0	0	0
Sherrard	6-27-2009	1707	Wind	52	0	0	25.00K	0
New Windsor	6-29-2012	2005	Wind	61	0	0	.10K	0
New Windsor	5-19-2013	1745	Wind	52	0	0	0	0
Sunbeam	5-30-2013	1545	Wind	61	0	0	0	0

Location	Date	Time	Event Type	Wind speed (KTS)	Deaths	Injuries	Property Damage	Crop Damage
Griffin	6-1-2014	1845	Wind	52	0	0	0	0
Matherville	7-12-2014	2032	Wind	61	0	0	0	0

(NOAA Storm Events Database, National Climatic Data Center)

Hail is also a reported risk associated with severe thunderstorms in Illinois. Hail can cause major damage to property and crops. It forms when strong updrafts in thunderstorms push water droplets upwards. These droplets then freeze to form hail. As they are freezing, the droplets can collide with others and grow larger in diameter. When they become too large for the updraft to support they fall from the storm as hail. *(Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan 2010)*

Location	Date	Time	Event Type	Mag.	Deaths	Injuries	Property Damage	Crop Damage
Mercer Cty	9-27-1959	1915	Hail	2.5 in.	0	0	0	0
Mercer Cty	8-3-1965	2100	Hail	1.75 in.	0	0	0	0
Mercer Cty	7-29-1967	1545	Hail	1.00 in.	0	0	0	0
Mercer Cty	8-24-1971	1700	Hail	1.75 in.	0	0	0	0
Mercer Cty	5-1-1973	1503	Hail	1.50 in.	0	0	0	0
Mercer Cty	6-14-1974	1515	Hail	2.50 in.	0	0	0	0
Mercer Cty	6-14-1974	1540	Hail	2.00 in.	0	0	0	0
Mercer Cty	6-13-1975	1844	Hail	1.75 in.	0	0	0	0
Mercer Cty	6-13-1975	1852	Hail	1.00 in.	0	0	0	0
Mercer Cty	7-23-1975	1525	Hail	0.75 in.	0	0	0	0
Mercer Cty	9-7-1977	1510	Hail	1.00 in.	0	0	0	0
Mercer Cty	5-29-1980	1205	Hail	1.00 in.	0	0	0	0
Mercer Cty	4-13-1981	1430	Hail	0.75 in.	0	0	0	0
Mercer Cty	4-13-1981	1712	Hail	0.75 in.	0	0	0	0
Mercer Cty	4-13-1981	1813	Hail	1.75 in.	0	0	0	0
Mercer Cty	4-13-1981	1835	Hail	1.75 in.	0	0	0	0
Mercer Cty	5-18-1982	1545	Hail	1.00 in.	0	0	0	0
Mercer Cty	5-18-1982	1600	Hail	1.00 in.	0	0	0	0
Mercer Cty	8-21-1987	0130	Hail	1.75 in.	0	0	0	0
Mercer Cty	10-23-1991	1610	Hail	1.25 in.	0	0	0	0
North Henderson	4-9-1995	2315	Hail	0.75 in.	0	0	0	0
Mount Carroll	8-9-1995	1650	Hail	0.80 in.	0	0	0	0
Galva	8-9-1995	1835	Hail	0.75 in.	0	0	0	0
Viola	8-9-1995	1920	Hail	0.75 in.	0	0	0	0
Alexis	5-9-1996	2008	Hail	1.75 in.	0	0	0	0
Viola	6-6-1999	1504	Hail	0.75 in.	0	0	0	0
Sherrard	6-13-2000	1535	Hail	0.75 in.	0	0	0	0
Viola	5-10-2001	2129	Hail	0.75 in.	0	0	0	0
Viola	5-10-2001	2140	Hail	1.00 in.	0	0	0	0
Matherville	6-12-2002	1855	Hail	2.00 in.	0	0	0	0

Location	Date	Time	Event Type	Mag.	Deaths	Injuries	Property Damage	Crop Damage
North Henderson	6-12-2002	1935	Hail	1.75	0	0	0	0
Aledo	6-12-2002	2006	Hail	1.00	0	0	0	0
New Boston	4-30-2003	1712	Hail	0.75	0	0	0	0
New Boston	4-30-2003	1725	Hail	1.25	0	0	150.00K	0
Joy	4-30-2003	1730	Hail	1.75	0	0	350.00K	0
New Boston	4-30-2003	1801	Hail	1.75	0	0	500.00K	0
New Boston	4-30-2003	1812	Hail	1.75	0	0	500.00K	0
New Windsor	4-30-2003	1818	Hail	1.75	0	0	50.00K	0
Matherville	4-30-2003	1825	Hail	0.75	0	0	0	0
New Windsor	4-30-2003	1904	Hail	1.75	0	0	500.00K	0
Matherville	4-30-2003	1945	Hail	1.75	0	0	500.00K	0
New Windsor	4-30-2003	2055	Hail	0.75	0	0	0	0
Sherrard	5-14-2003	1405	Hail	1.00	0	0	100.00K	0
New Boston	8-1-2003	1338	Hail	1.25	0	0	3.00K	15.00K
Sherrard	8-1-2003	1435	Hail	1.75	0	0	100.00K	20.00K
Viola	5-2-2004	0800	Hail	0.75	0	0	0	0
New Windsor	5-20-2004	1944	Hail	0.75	0	0	0	5.00K
New Windsor	5-20-2004	1945	Hail	0.75	0	0	0	5.00K
Keithsburg	4-20-2005	1756	Hail	1.00	0	0	2.00K	0
Keithsburg	4-20-2005	1801	Hail	1.00	0	0	5.00K	0
Joy	3-12-2006	1900	Hail	1.00	0	0	0	0
Mannon	3-12-2006	1900	Hail	1.00	0	0	5.00K	0
Sherrard	3-12-2006	2117	Hail	1.00	0	0	5.00K	0
Aledo	4-13-2006	2055	Hail	1.25	0	0	20.00K	0
Viola	4-13-2006	2055	Hail	1.00	0	0	5.00K	0
New Windsor	4-13-2006	2108	Hail	1.00	0	0	5.00K	0
North Henderson	4-13-2006	2109	Hail	0.88	0	0	0	0
North Henderson	4-13-2006	2120	Hail	0.75	0	0	0	0
Seaton	4-18-2006	2158	Hail	0.75	0	0	0	0
New Boston	6-21-2007	0910	Hail	0.88	0	0	0	0
North Henderson	5-13-2008	1530	Hail	0.75	0	0	0	0
Old Gilchrist	5-30-2008	0715	Hail	0.75	0	0	0	0
New Boston	6-12-2008	1840	Hail	0.88	0	0	0	0
Aledo	6-14-2008	1745	Hail	0.88	0	0	0	0
Griffin	7-21-2008	0510	Hail	0.88	0	0	0	0
New Boston	4-4-2010	1715	Hail	0.88	0	0	0	0
Marston	5-2-2012	0401	Hail	1.00	0	0	0	0
New Boston	4-17-2013	1150	Hail	0.75	0	0	0	0
Joy	7-22-2013	2049	Hail	0.75	0	0	0	0
New Boston	4-2-2014	2355	Hail	1.75	0	0	0	0

L1.50ocation	Date	Time	Event Type	Mag.	Deaths	Injuries	Property Damage	Crop Damage
Marston	4-3-2014	0015	Hail	1.75	0	0	0	0
Gingle Corners	4-3-2014	0030	Hail	1.50	0	0	0	0
Preemption	4-3-2014	0041	Hail	1.00	0	0	0	0
Griffin	5-11-2014	1430	Hail	1.00	0	0	0	0
Keithsburg	4-8-2015	0057	Hail	0.75	0	0	0	0

(NOAA Storm Event Center, National Climatic Data Center)

Probability

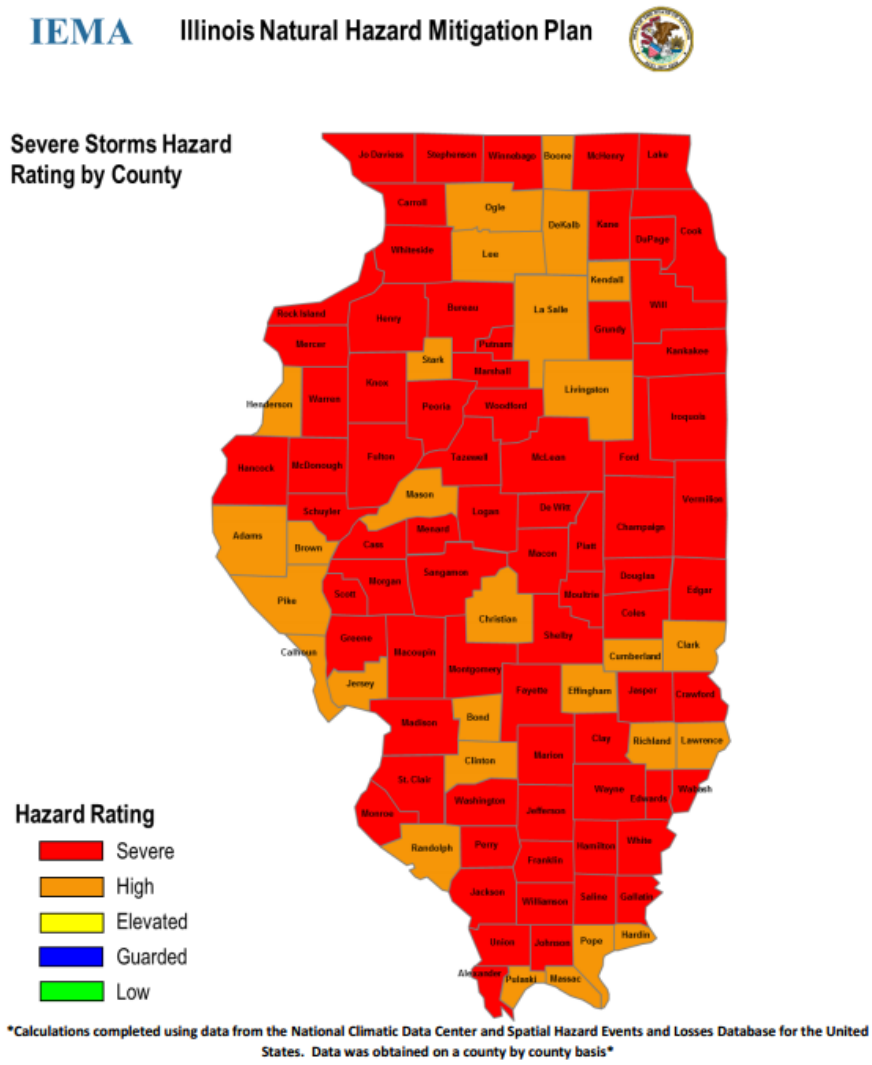
Mercer County HVA concluded that the probability of a severe thunderstorm occurring in Mercer County is high. The overall risk percentage was 61%.

Mercer County THIRA has also shown that the probability of a severe thunderstorm occurring in Mercer County is high. The overall risk percentage calculated in the THIRA was 78%.

Magnitude and Severity

Mercer County HVA shows that the human impact from a severe thunderstorm is low. Property impact and business impact which could entail physical loss and property damage and/or interruption of services has a high impact. Mercer County preparedness and internal response such as time, effectiveness, and resources rated high. External response including community/mutual aid staff and supplies rated moderate.

Mercer County THIRA shows that the human impact would be high due to the fact that more than 25% of the total population would be affected. Property impact is moderate being that only 10-25% of the populations' property could be affected. The business impact of a severe thunderstorm was high. This is because more than 25% of businesses could be affected due to a severe thunderstorm. Mercer County is moderately prepared for a severe thunderstorm. Both internal and external response rated a moderate score as well.



Warning Time

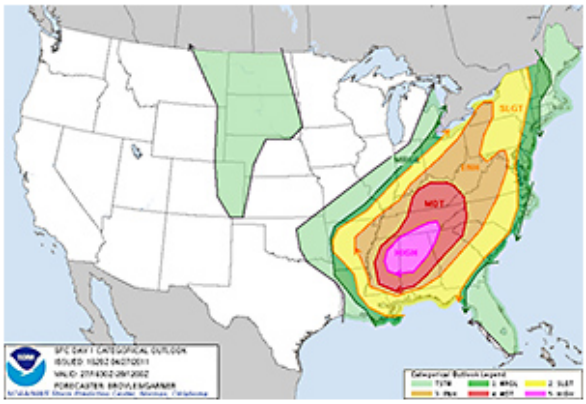
Severe weather rarely happens without any warning. While we will never be able to pinpoint when and where severe weather will develop, we can identify broader areas with the potential for the development of severe weather. It is your responsibility to check the weather forecast, which may be often several times daily, to see if you are, or will be, under a risk of severe weather.

(National Oceanic and Atmospheric Administration, NOAA)

Convective Outlooks

Convective Outlooks consist of a narrative and a graphic depicting severe thunderstorm threats across the continental United States. The outlook narratives are written in technical language, intended for sophisticated weather users, and provide the meteorological reasoning for the risk areas.

This product also provides explicit information regarding the timing, the greatest severe weather threat and the expected severity of the event. The graphics that accompany the narratives provide vital information to help plan your day.



A sample Day 1 convective outlook.

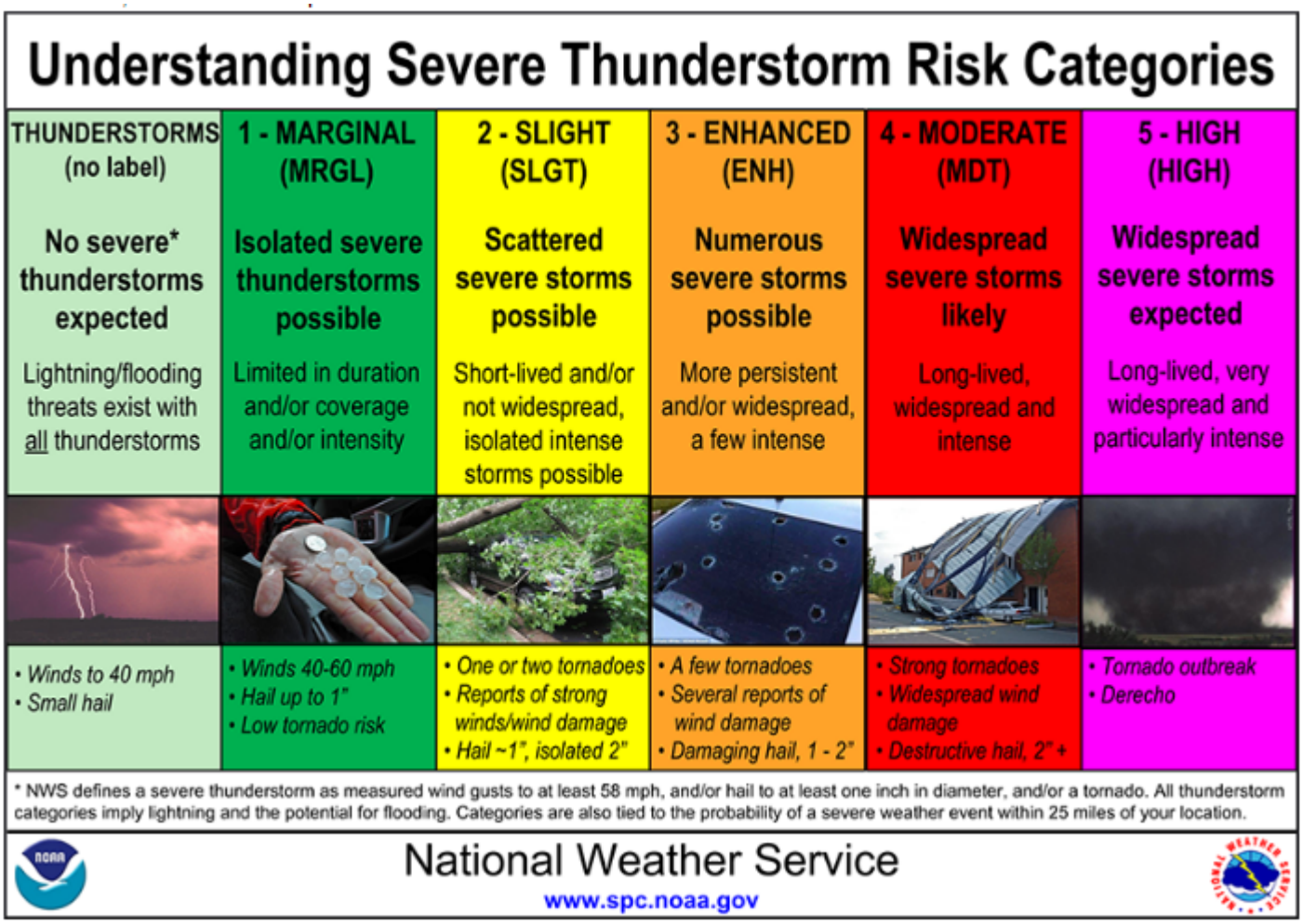
The convective outlook graphics display up to six different color categories to reflect the six the likelihood of occurrences and/or increased severity of a severe weather event(s). The four convective outlooks issued (Day 1, Day 2, Day 3 and Days 4-8) are...

Day 1	This is the risk of severe weather **today through early tomorrow morning**. Day 1 forecasts are issued five times daily; 06z (around midnight), 13z (around sunrise), 1630z (mid-morning), 20z (mid-afternoon), and 01z (early evening). This is the forecast you will see on SPC's frontpage. (What is Z-time?)
Day 2	Day 2 continues from the ending of Day 1 (tomorrow morning) for the **next 24 hours**. These are issued twice daily; 07z (around midnight) and 1730z (around noon).
Day 3	This is the forecast for the **subsequent 24 hours**. Day 3 forecasts are issued daily by 0830z on standard time and 0730z on daylight time (after midnight).
Days 4-8	A severe weather area depicted in the **days four through eight** period. It is issued at 10z daily (early morning) and indicates a 15% or 30% or higher probability for severe thunderstorms (e.g. a 15% or 30% chance that a severe thunderstorm will occur within 25 miles of any point).

(www.srh.noaa.gov)

Duration

Duration is also forecast dependent. Below is a chart that can help decipher magnitude and severity as well as duration.



Definition of Tornado

A violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground. It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena. *(National Weather Service)*

Tornadoes are nature's most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Occasionally, tornadoes develop so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado. *(www.ready.gov)*

- They may strike quickly, with little or no warning.
- They may appear nearly transparent until dust and debris are picked up or a cloud forms in the funnel.
- The average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction.
- The average forward speed of a tornado is 30 mph, but may vary from stationary to 70 mph.
- Tornadoes are most likely to occur between 3pm and 9pm, but can occur at any time. *(www.ready.gov)*

Potential Hazard Area

The potential hazard area for a tornado in Mercer County is county wide.

Historical Occurrences

TORNADO RANK BY COUNTY
Normalized by Tornadoes per 100 square miles
Between 1950 and 2012

				59/581 x 100 = 10.15
RANK	**COUNTY**	**Tornadoes per 100 sq. miles**	**Total Tornadoes**	**County Area (sq. mi)**
29	Mercer	4.8128	27	561

2013 Illinois Hazard Mitigation Plan										
County		Number of Tornadoes 1951-2012 (NCDC)		Total Recorded Loss (NCDC)		Average $ in property damage per event (NCDC)		Annual Probability of Event		Estimated Annual Loss
Mercer		34		$5,240,000		$154,117.65		54.8%		$84,516.13

The National Climatic Data Center has kept a record of tornadoes since 1950. The chart below shows tornadoes that have occurred in Mercer County since 1950.

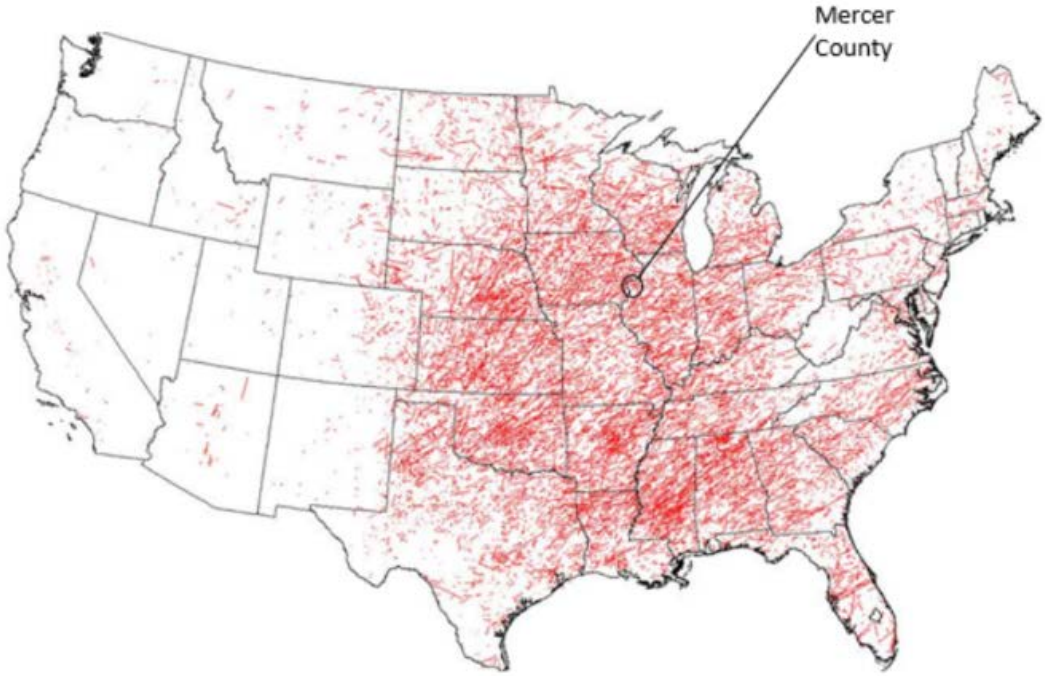
*Note that Enhanced Fujita Scale became operational February 1, 2007.

Location	Date	Time	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Mercer County	7-17-1952	1700	F1	0	0	2.5K	0
Mercer County	4-23-1965	2345	F1	0	1	250K	0
Mercer County	4-23-1965	2350	F1	0	0	25K	0
Mercer County	6-3-1972	1440	F0	0	0	0	0
Mercer County	4-21-1973	1743	F2	0	0	2.5M	0
Mercer County	4-13-1974	1900	F2	0	0	25K	0
Mercer County	4-13-1974	1904	F2	0	1	2.5K	0
Mercer County	6-14-1974	1508	F3	0	1	0	0
Mercer County	8-15-1978	1900	F3	0	0	250K	0
Mercer County	7-30-1987	1700	F1	0	0	25K	0
Alexis	5-9-1996	1941	F0	0	0	0	0
Viola	4-15-1998	1600	F0	0	0	0	0
Seaton	6-18-1998	1610	F2	0	0	110K	0
New Boston	6-29-1998	1440	F1	0	0	5K	0
Seaton	6-6-1999	1500	F0	0	0	0	0
Aledo	4-30-2003	1742	F1	0	0	500K	0
Aledo	4-30-2003	1757	F0	0	0	50K	0
Viola	4-30-2003	1808	F1	0	0	500K	0
Viola	4-30-2003	1811	F0	0	0	250K	0
Viola	4-30-2003	1812	F1	0	0	300K	0
New Boston	5-10-2003	1930	F0	0	0	100K	0
Millersburg	5-10-2003	1945	F0	0	0	100K	0
Aledo	5-10-2003	1955	F0	0	0	50K	0
Eliza	4-13-2006	2033	F1	0	0	15K	0
Mannon	4-13-2006	2057	F1	0	0	50K	0
Matherville	4-13-2006	2107	F2	0	0	30K	0
North Henderson	4-13-2006	2112	F1	0	0	100K	0
Aledo	7-12-2014	2020	EF0	0	0	0	0
Old Gilchrist	7-12-2014	2030	EF1	0	0	0	10K
Griffin	7-12-2014	2046	EF1	0	0	0	0
Mannon	5-24-2015	1750	EF2	0	0	30K	0
Gingle Corners	6-11-2015	1625	EF1	0	0	0	10K
Marston	12-23-2015	1633	EF0	0	0	0	0

Probability

Mercer County HVA shows a low probability of a tornado occurring and an overall risk rate of 26%. Mercer County THIRA concludes that there is between a 1-10% probability of occurrence in the next year, or at least one chance of occurrence in the next 100 years which is a moderate rating with an overall risk percentage of 48%.

Below is a map showing all tornado tracks for the United States from 19050-present. Mercer County is very much near the center of concentration of these tornado tracks.



Tracks of U.S. Tornadoes 1950-Present (Source: The Weather Channel)

Magnitude and Severity

According to Mercer County HVA human, property, and business impact of a tornado occurring in Mercer County would be a high impact as there would be a high possibility of death or injury, physical loss and damage as well as interruption in business services. Mercer County preparedness rated high at a 1 while both internal and external response were a 2 which is moderate.

Mercer County THIRA states that the human impact is moderate and that 10%-25% of the total population of the jurisdiction would be impacted. Property and business impact would be high as more than 25% of the community, government, and businesses would be affected as a result of a tornado. Although the impact is high so is Mercer County preparedness. Internal and external response scored moderate.

The EF Scale was revised from the original Fujita Scale to reflect better examinations of tornado damage surveys so as to align wind speeds more closely with associated storm damage. The new scale has to do with how most structures are designed.

The National Weather Services advised that it is important to note that the EF scale still is a set of wind estimates (not measurements) based on damage. Its uses three-second gusts estimated at the point of damage based on a judgment of 8 levels of damage to the 28 indicators listed below. These estimates vary with height and exposure. Important: The 3 second gust is not the same wind as in standard surface observations. Standard measurements are taken by weather stations in open exposures, using a directly measured, "one minute mile" speed.
http://www.srh.noaa.gov/oun/?n=efscale

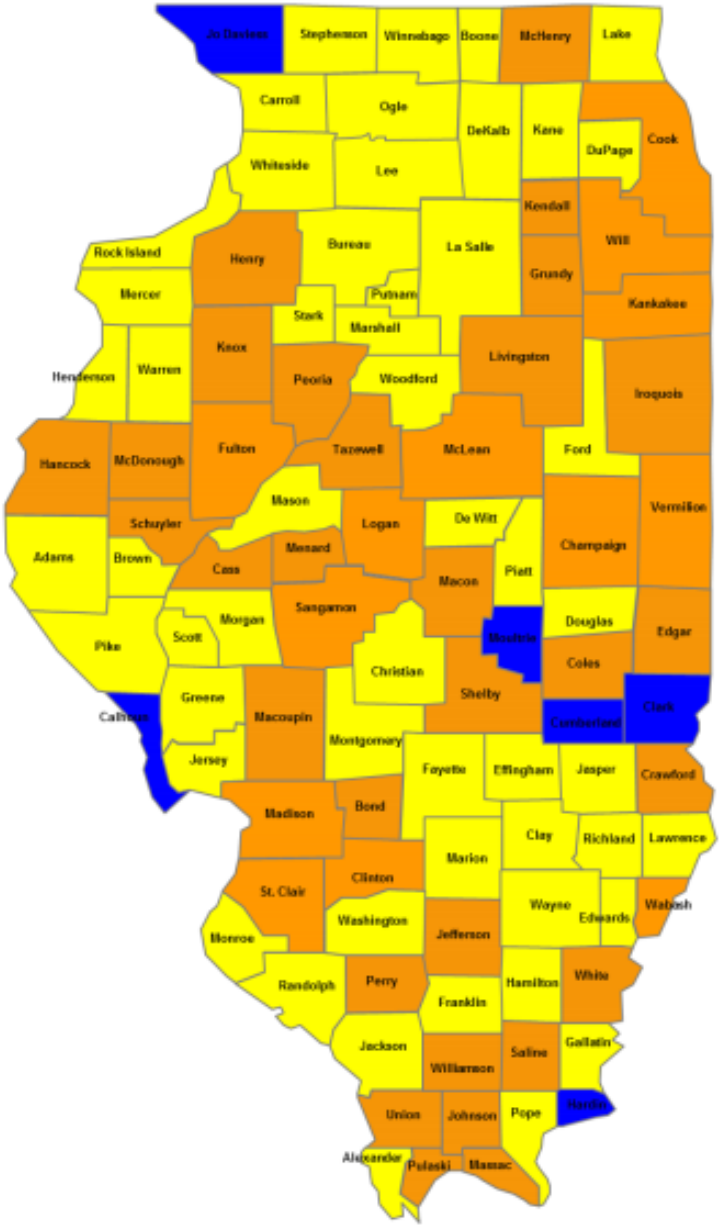
EF-Scale:	Old F-Scale:	Typical Damage:
EF-0 (65-85 mph)	F0 (65-73 mph)	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF-1 (86-110 mph)	F1 (73-112 mph)	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF-2(111-135 mph)	F2 (113-157 mph)	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF-3 (136-165 mph)	F3 (158-206 mph)	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF-4 (166-200 mph)	F4 (207-260 mph)	Devastating damage. Whole frame houses Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF-5 (>200 mph)	F5 (261-318 mph)	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur.
EF No rating	F6-F12 (319 mph to speed of sound)	Inconceivable damage. Should a tornado with the maximum wind speed in excess of EF-5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc.will create serious secondary damage on structures.

The highest F-Scale rating ever occurring in Illinois is F3

(Weather Underground – www.wunderground.com)

IEMA **Illinois Natural Hazard Mitigation Plan**

Tornado Hazard Rating by County



Hazard Rating

- Severe
- High
- Elevated
- Guarded
- Low

Calculations completed using data from the National Climatic Data Center and Spatial Hazard Events and Losses Database for the United States. Data was obtained on a county by county basis

Warning Time

Warning time for a tornado is event specific. Pay attention to your local weather forecast and have a NOAA weather radio in close proximity.

Below are the weather warnings to help you stay safe as defined by National Weather Service.

- **Tornado Watch: Be Prepared!** Tornadoes are possible in and near the watch area. Review and discuss your emergency plans and check supplies and your safe room. Be ready to act quickly if a warning is issued or you suspect a tornado is approaching. Acting early helps to save lives! Watches are issued by the Storm Prediction Center for counties where tornadoes may occur. The watch area is typically large, covering numerous counties or even states.
  (National Weather Service)

- **Tornado Warning: Take Action!** A tornado has been sighted or indicated by weather radar. There is imminent danger to life and property. Move to an interior room on the lowest floor of a sturdy building. Avoid windows. If in a mobile home, a vehicle, or outdoors, move to the closest substantial shelter and protect yourself from flying debris. Warnings are issued by you local forecast office. Warnings typically encompass a much smaller area (around the size of a city or small county) that may be impacted by a tornado identified by a forecaster on radar or by a trained spotter/law enforcement who is watching the storm.
  (National Weather Service)

Can tornadoes be predicted?

Yes, but only to a limited extent. Although the process by which tornadoes form is not completely understood, scientific research has revealed that tornadoes usually form under certain types of atmospheric conditions. When forecasters see those conditions, they can predict that tornadoes are likely to occur. However, it is not yet possible to predict in advance exactly when and where they will develop, how strong they will be, or precisely what path they will follow. Once a tornado is formed and has been detected, warnings can be issued based on the path of the storm producing the tornado, but even these cannot be perfectly precise about who will or will not be struck.
(The National Severe Storms Laboratory)

Duration

Detailed statistics about the time a tornado is on the ground are not available. This time can range from an instant to several hours. The average is about five minutes.
(The National Severe Storms Laboratory)

Definition of Winter Storm

A low pressure system that produces a combination of winter weather (snow, freezing rain, sleet, etc.) that present a hazard *(National Weather Service)*

Severe Winter Storms

When you hear the term "severe winter storm warning" freezing temperatures, heavy snowfall or freezing rain comes to mind. There are three categories of winter storms:

Blizzard: This is the most dangerous of all winter storms. A blizzard is defined as falling or blowing snow with winds of at least 35 miles per hour, reducing visibility to less than one-quarter mile.

Heavy Snow Storm: Will produce six inches or more of snow in 12 hours or less, or eight inches or more of snow in 24 hours in all of northern and central Illinois. In southern Illinois, generally south of Interstate 64 where heavy snow is less common, a heavy snow storm is defined as amounts of four inches or more of snow in 12 hours or less, or six inches of snow in 24 hours. .

Ice Storm: Occurs when moisture falls and freezes immediately upon impact, and accumulating to a thickness of one-quarter inch or more, causing damage to trees and power lines, usually resulting in widespread and extended power outages.
(2013 Illinois Natural Hazard Mitigation Plan)

Why can winter storms be so dangerous?

- Most deaths from winter storms are not directly related to the storm itself
- People die in traffic accidents on icy roads
- People die from heart attacks while shoveling snow
- People die from hypothermia from prolonged exposure to cold

(National Severe Storms Laboratory)

Potential Hazard Area

The potential hazard area for a severe winter storm in Mercer County is county wide.

Everyone is potentially at risk during winter storms. The actual threat to you depends on your specific situation. Recent observations show that:

- Of injuries related to ice and snow:
  - About 70% occur in automobiles
  - About 25% are people caught out in the storm
  - Majority are males over 40 years old

- Of injuries related to exposure to cold:
  - 50% are people over 60 years old
  - Over 75% are males
  - About 20% occur in the home

(National Severe Storms Laboratory)

Historical Occurrences

2013 Illinois Hazard Mitigation Plan

County	Number of Severe Winter Storms 1960-2012 (NCDC)	Total Recorded Loss (NCDC)	Average $ in property damage per event (NCDC)	Annual Probability of Event	Estimated Annual Loss
Mercer	37	$4,047,611	$109,394.90	71.2%	$77,838.68

Due to the variety of different types of winter storms and HVA being separated multiple event types were researched for historical data.

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	12-21-2008	0900	Blizzard	0	0	0	0
Mercer	2-1-2011	1030	Blizzard	0	0	0	0
Mercer	12-20-2012	1200	Blizzard	0	0	0	0

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	12-16-2000	1400	Extreme Cold/Wind Chill	0	0	0	0
Mercer	12-21-2000	0400	Extreme Cold/Wind Chill	0	0	0	0
Mercer	12-23-2000	2200	Extreme Cold/Wind Chill	0	0	0	0

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	2-2-2007	0400	Extreme Cold/Wind Chill	0	0	0	0
Mercer	1-14-2009	2100	Extreme Cold/Wind Chill	0	0	0	0
Mercer	1-5-2014	1200	Extreme Cold/Wind Chill	0	0	0	0

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	12-15-2000	1300	Ice Storm	0	0	0	0
Mercer	1-28-2001	1000	Ice Storm	0	0	0	0
Mercer	1-5-2005	0600	Ice Storm	0	0	10.00K	0
Mercer	2-24-2007	0900	Ice Storm	1	0	965.00K	0
Mercer	12-1-2007	0830	Ice Storm	0	0	0	0
Mercer	12-10-2007	2330	Ice Storm	0	0	0	0
Mercer	12-18-2008	1900	Ice Storm	0	0	0	0
Mercer	1-20-2010	0700	Ice Storm	0	0	0	0

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	1-18-1996	0430	Winter Storm	0	0	0	0
Mercer	1-26-1996	0400	Winter Storm	0	0	0	0
Mercer	11-14-1996	0600	Winter Storm	0	0	0	0
Mercer	12-27-1996	1800	Winter Storm	0	0	0	0
Mercer	1-9-1997	0400	Winter Storm	0	0	0	0
Mercer	1-15-1997	0400	Winter Storm	0	0	0	0
Mercer	1-24-1997	0400	Winter Storm	0	0	0	0
Mercer	2-3-1997	2000	Winter Storm	0	0	0	0
Mercer	1-8-1998	1000	Winter Storm	0	0	0	0
Mercer	12-30-1998	1700	Winter Storm	0	0	0	0
Mercer	1-1-1999	0517	Winter Storm	0	0	0	0
Mercer	1-18-1999	0405	Winter Storm	0	0	0	0
Mercer	3-5-1999	1500	Winter Storm	0	0	0	0
Mercer	3-8-1999	1600	Winter Storm	0	0	0	0
Mercer	12-16-1999	1900	Winter Storm	0	0	0	0
Mercer	12-19-1999	1500	Winter Storm	0	0	0	0
Mercer	12-23-1999	1400	Winter Storm	0	0	0	0
Mercer	1-3-2000	1500	Winter Storm	0	0	0	0
Mercer	1-17-2000	0800	Winter Storm	0	0	0	0
Mercer	1-19-2000	1000	Winter Storm	0	0	0	0

Location	Date	Time	Hazard Type	Death	Injuries	Property Damage	Crop Damage
Mercer	1-29-2000	1500	Winter Storm	0	0	0	0
Mercer	2-17-2000	1900	Winter Storm	0	0	0	0
Mercer	12-10-2000	2200	Winter Storm	0	0	0	0
Mercer	1-30-2002	0700	Winter Storm	0	0	0	0
Mercer	3-1-2002	1700	Winter Storm	0	0	0	0
Mercer	2-14-2003	1600	Winter Storm	0	0	0	0
Mercer	3-4-2003	1300	Winter Storm	0	0	0	0
Mercer	12-1-2006	0000	Winter Storm	0	0	0	0
Mercer	2-12-2007	2330	Winter Storm	0	0	0	0
Mercer	2-5-2008	2000	Winter Storm	0	0	0	0
Mercer	12-7-2009	2300	Winter Storm	0	0	0	0
Mercer	1-6-2010	1800	Winter Storm	0	0	0	0
Mercer	2-26-2013	1000	Winter Storm	0	0	0	0
Mercer	2-4-2014	1400	Winter Storm	0	0	0	0
Mercer	1-5-2015	1500	Winter Storm	0	0	0	0
Mercer	2-1-2015	0000	Winter Storm	0	0	0	0
Mercer	11-20-2015	1800	Winter Storm	0	0	0	0
Mercer	12-28-2015	0200	Winter Storm	0	0	0	0

Probability

Mercer County HVA did not assess the risk for a winter storm in general. Instead several event possibilities were broken down. The probability results and overall risk is as follows:

Snow Fall: Probability = Moderate, Risk = 26%
Blizzard: Probability = Low, Risk = 19%
Ice Storm: Probability = Moderate, Risk = 52%

Mercer County THIRA assessed the risk of a winter storm occurring as being high. This means that the probability of occurrence in the next year, or at least one chance of occurrence in the next 10 years is between 10% and 100%. The overall risk of a severe winter storm is 56% in Mercer County.

Magnitude and Severity

Mercer County HVA ratings for human, property, and business impact are broken down by each storm event as well.

	Human Impact	Property Impact	Business Impact	Preparedness	Internal Response	External Response
Snow Fall	1-low	1-low	2-moderate	1-high	1-high	1-high
Blizzard	2-moderate	1-low	3-high	1-high	2-moderate	1-high
Ice Storm	3-high	3-high	3-high	1-high	2-moderate	2-moderate

Mercer County THIRA rated the human impact of a severe winter storm as being moderate. This means that 10%-25% of the total population of the jurisdiction would have human impact. Property impact would be low at less than 10% affected. Business impact rated moderate as 10% - 25% of businesses

would be affected. Mercer County rated high in preparedness. Both internal and external response had a moderate score.

The amount and extent of snow or ice, air temperature, wind speed and event duration are characteristics of a severe winter storm. All of these combine to determine the severity of the storm.

Snow Storm: If melted, an inch of snow falling at 32 degrees contains twice the amount of water as an inch of snow falling at 10 degrees. This relationship translates into when snow will blow and drift with high winds that make conditions hazardous for hours or perhaps days. If the temperature is near freezing when snow falls, it rarely drifts. As the temperature falls farther from the freezing mark, then snow is lighter and more prone to blow and drift.

Ice Storm: Factors in how much damage will occur are the amount of rain and thus icing taking place, the strength of the wind and if the storm strikes an urban or rural area.

Extreme Cold: Very cold temperatures, usually in the single digits or below zero, which combined with the wind can cause frostbite or a potentially deadly condition known as hypothermia. The wind chill chart below indicates that frostbite will occur within 30 minutes when temperatures are below zero and wind speeds are 15 mph or greater. Rapid frostbite will occur in 10 minutes or less with temperatures of -20 degrees or colder and wind speeds of 15 mph or higher.

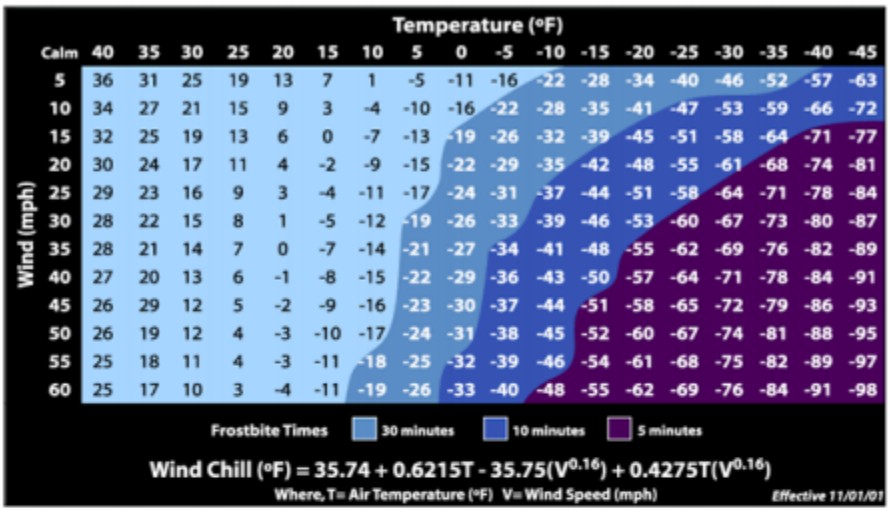
The NWS will issue a wind chill advisory or warning in Illinois for the following wind chill conditions:

North of I-80: Advisory for -20 to -30 degrees, Warning for colder than -30 degrees

Between I-80 and I-64: Advisory for -15 to -25 degrees, Warning for colder than -25 degrees

South of I-64: Advisory for -10 to -25 degrees, Warning for colder than -25 degrees
(2013 Illinois Natural Hazard Mitigation Plan)

Wind Chill Chart



TERMS USED BY WEATHER FORECASTERS

Freezing Rain	Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees and power lines.
Sleet	Rain that turns to ice pellets before reaching the ground. Sleet also causes roads to freeze and become slippery.
Winter Storm Watch	A winter storm is possible in your area.
Winter Storm Warning	A winter storm is occurring, or will soon occur in your area.
Blizzard Warning	Sustained winds or frequent gusts to 35 miles-per-hour or greater and considerable falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer.
Frost/Freeze Warning	Below freezing temperatures are expected during the growing season, which will cause damage to local vegetation.

Source: Are You Ready?, FEMA, H-34/September 2002

Different types of precipitation can fall in the same area. As an example, sometimes sleet precedes snow or initially falls at the same time as snow. Also, it is not uncommon to have freezing rain and sleet together.

A major winter storm can immobilize an entire region for a prolonged period of time causing widespread damage and disruption, injury and death. Areas that experience mild winters can be hit by extreme cold or

IEMA **Illinois Natural Hazard Mitigation Plan**

Severe Winter Storms Hazard Rating by County

Hazard Rating

- Severe
- High
- Elevated
- Guarded
- Low

Calculations completed using data from the National Climatic Data Center and Spatial Hazard Events and Losses Database for the United States. Data was obtained on a National Weather Service Zone by county basis

Warning Time

- **Winter Storm Warning**
  This product is issued by the National Weather Service when a winter storm is producing or is forecast to produce heavy snow or significant ice accumulations.
  The National Weather Service will issue a winter storm warning when one or more of the following significant weather events is occurring or about to occur:
  - 5 inches or more of snow/sleet within a 12 hour period or 7 inches or more of snow/sleet within a 24 hour period
  - Enough ice accumulation to cause damage to trees or powerlines
  - A life threatening or damaging combination of snow and/or ice accumulation with wind
- **Winter Storm Watch**
  This product is issued by the National Weather Service when there is a potential for heavy snow or significant ice accumulations, usually at least 24 to 36 hours in advance. The criteria for this watch can vary from place to place.
- **Winter Weather Advisory**
  This product is issued by the National Weather Service when a low pressure system produces a combination of winter weather (snow, freezing rain, sleet, etc.) that present a hazard, but does not meet warning criteria.
  (National Weather Service)

Duration

Duration of a winter storm is event specific as is with many natural hazards.

I. Other Natural Hazards

As stated in the opening paragraph of this section, the Illinois Natural Hazard Mitigation Planning Committee divided potential natural hazards into three categories: those extremely unlikely to occur in Illinois, those with low probability and minimal impact, or natural hazards that have in the past and in all probability will continue to impact Illinois at various levels of severity and frequency. The preceding pages have dealt with disasters that will most definitely occur in Illinois. This portion of the plan will discuss the remaining two categories.

The first category is natural hazards that are extremely unlikely to happen in Illinois: avalanche, coastal storm, hurricane, tsunami and volcano. No mitigation actions or hazard profiles will be discussed regarding these hazards.

The second category is natural hazards that have a low probability of occurring or minimal impact. These secondary hazards to be discussed include: Dam failure, Mine Subsidence, and Pandemic.

The intent for future plan updates is to include a loss estimation model for the "Other Natural Hazards." Currently, data is not available to provide accurate estimates. Currently, no mitigation efforts have been discussed as these hazards are very difficult to predict where the next event could take place. However, with recent occurrences and the potential of risk, the planning committee determined that these hazards should be identified in the INHMP and evaluated utilizing the plans monitoring and update cycle to New to the 2013 Hazard Mitigation Plan is the addition of Pandemic to the "Other Natural Hazards." Recent occurrences, combined with increased losses have made this hazard worth noting. Currently, no mitigation efforts have been discussed as it is very difficult to predict where the next event could take place.

Dam Failure:

Dam failure is an accidental or unintentional collapse or other failure of an impoundment structure that results in downstream flooding. Dams are man-made structures and dam failures are usually considered technological hazards, however, these failures are usually caused by prolonged periods of rainfall and flooding.

A dam is a barrier constructed across a watercourse in order to store, control, or divert water. Dams are usually constructed of earth, rock, concrete, or mine tailings. The water impounded behind a dam is referred to as the reservoir and is measured in acre-feet, with one acre-foot being the volume of water that covers one acre of land to a depth of one foot. Due to topography, even a small dam may have a reservoir containing many acre-feet of water. A dam failure is the collapse, breach, or other failure 2013 Illinois Hazard Mitigation Plan III-147 of a dam that causes downstream flooding. Dam failures may result from natural events, human caused events, or a combination thereof. Due to the lack of advance warning, failures resulting from natural events, such as hurricanes, earthquakes, or landslides, may be particularly severe. Prolonged rainfall that produces flooding is the most common cause of dam failure [FEMA, 1997].

Nature of the Hazard

Dam failures usually occur when the spillway capacity is inadequate and water overtops the dam or when internal erosion through the dam foundation occurs [also known as piping]. If internal erosion or overtopping cause a full structural breach, a high-velocity, debris-laden wall of water is released and rushes downstream, damaging or destroying whatever is in its path. Dam failures may result from one or more the following:

- Prolonged periods of rainfall and flooding [the cause of most failures];
- Inadequate spillway capacity which causes excess overtopping flows;

- Internal erosion due to embankment or foundation leakage or piping;
- Improper maintenance;
- Improper design;
- Negligent operation;
- Failure of upstream dams;
- Landslides into reservoirs;
- High winds; and
- Earthquakes.

For emergency planning purposes, dam failures are categorized as either *rainy day* or *sunny day* failures. *Rainy day failures* involve periods of excessive precipitation leading to an unusually high runoff. This high runoff increases the reservoir of the dam and if not controlled, the overtopping of the dam or excessive water pressure can lead to dam failure. Normal storm events can also lead to rainy day failures if water outlets are plugged with debris or otherwise made inoperable. *Sunny day failures* occur due to poor dam maintenance, damage/obstruction of outlet systems, or vandalism. This is the worst type of failure and can be catastrophic because the breach is unexpected and there may be insufficient time to properly warn downstream residents.

Previous History of Dam Failure

A request for Dam information was made for failure events prior to 1990. The official collection of this data began post 1990 so no accurate records exist today. Another request was made to discover what dam failures resulted from the historic 1993 and 2008 flood events. It was determined that no regulated dams failed during these events.

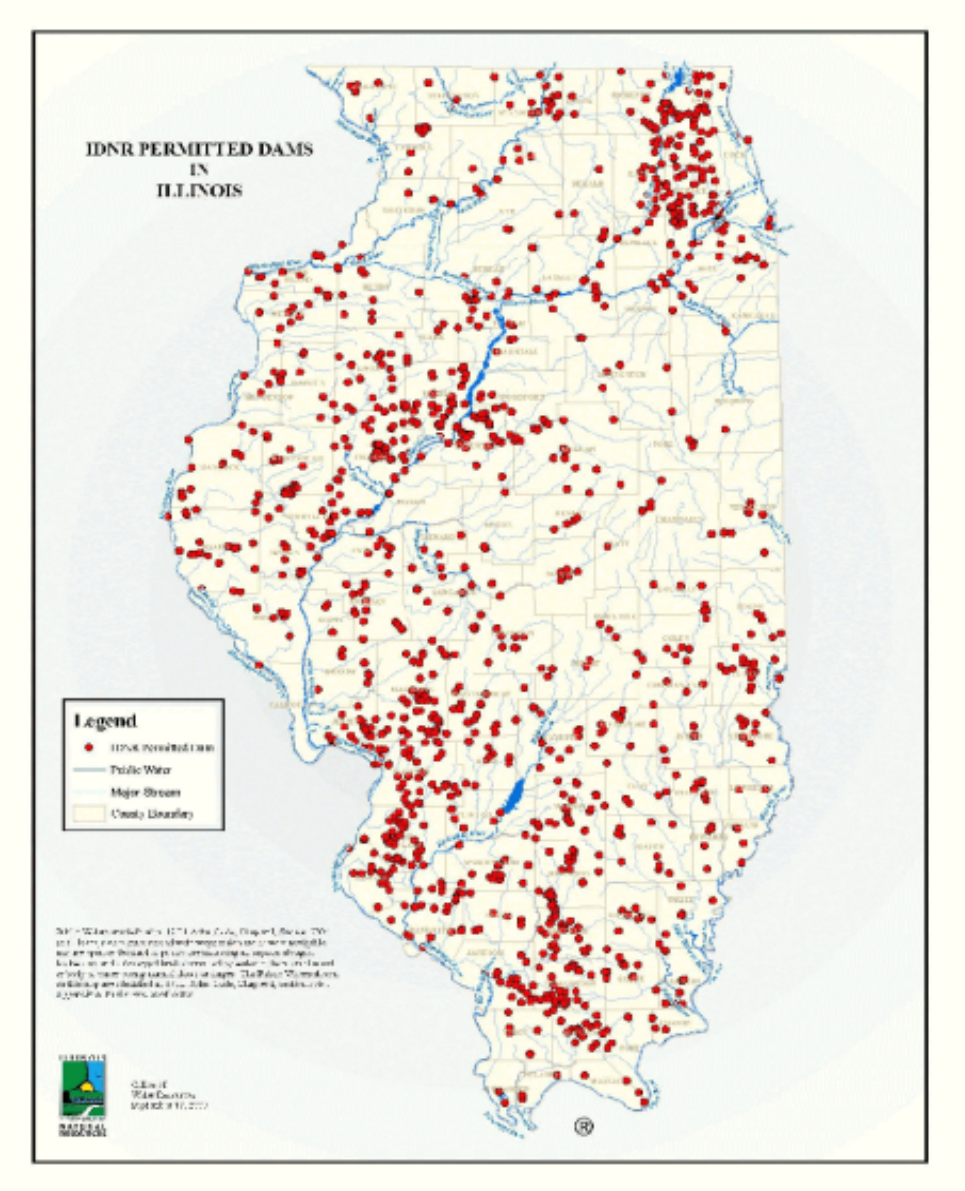
According to the National Inventory of Dams, the State of Illinois has 1504 Dams. More than 60% of those Dams are considered very low in terms of Hazard Potential. In fact, less than 15% are considered to represent a high risk to the population they protect. The following images define this more clearly.

(2013 Illinois Natural Hazard Mitigation Plan)

Sources

Federal Emergency Management Agency.1997. "Multi-Hazard Identification and Risk Assessment:: A Cornerstone of the National Mitigation Strategy." http://www.fema.gov/fhm/dl_mhira.shtm.

National Inventory of Dams, USACE http://geo.usace.army.mil/pgis/f?p=397:3:1577842890320650::NO::P3_STATES:IL



Sources

Federal Emergency Management Agency.1997. "Multi-Hazard Identification and Risk Assessment:: A Cornerstone of the National Mitigation Strategy." http://www.fema.gov/fhm/dl_mhira.shtm.

Mitigation Strategy

Mitigation Strategy

Hazard mitigation is any action taken to reduce or eliminate long term risk to people and property from natural hazards.

Mitigation planning is a process for states and communities to identify policies, activities, and tools to implement mitigation actions. As we know, mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. This process has four steps:

- Organizing resources
- Assessing risks
- Developing a mitigation plan
- Implementing the plan and monitoring progress

Initial THIRA tools were completed based on Hazard Vulnerability Analyses completed throughout the last 5 years and with new input from Hazard Mitigation Planning Team. Plan will focus on natural hazards.

Mitigation strategies project grid was completed by each jurisdiction. Each participating jurisdiction came up with actions to address the effects of a hazard. Goals, priority, possible funding, contact lead, time frame, and cost benefit analysis were also completed on the project grid.

Hazard Mitigation Goals

Goal 1 – Life, Health and Safety:

Design and implement mitigation projects that will protect the lives, health and safety of people and animals of Mercer County from the dangers of natural hazards.

Goal 2 – Protect Private Property:

Implement procedures and actions that will protect private property from natural hazards, including removal and/or relocation of areas that have been repeatedly damaged in natural hazards.

Goal 3 – Prevent Damage to Infrastructure:

Develop plan to both protect existing infrastructure and design new infrastructure to be resilient to the effects of natural hazards.

Goal 4 – Improve Communication:

Develop methods and procedures to maintain and improve communication between Mercer County residents, government, and private entities both before and during a disaster.

Goal 5 – Emergency Response Minimization:

Develop projects and systems that minimize the need and expenditures for rescue and relief efforts associated with all natural hazards.

Goal 6 – Reduce the Effects of Natural Hazards:

Create projects that will reduce the impacts of natural hazards on all communities and rural areas of Mercer County, including those from tornados, flooding, and winter storms.

Mitigation Strategy
Project Prioritization Method

Priority A

Projects permanently eliminate property damages and/or eliminate or reduce injuries and deaths in a specific area or have a high probability to systematically reduce property damages, injuries and deaths across a wide area.

Priority A projects address the most significant natural hazards – extreme heat, flood, severe storm, tornado, and winter storm.

Priority B

Projects reduce property damages in a specific area or have the potential to reduce property damages, injuries and deaths across a wide area or educate the public on disaster preparedness and mitigation.

Priority B projects address the most significant natural hazards – extreme heat, flood, severe storm, tornado, and winter storm.

Priority C

Projects eliminate or reduce property damages, injuries and deaths from the less significant natural hazards or educate the public on disaster preparedness and mitigation.

Priority C projects address the less significant natural hazards – dam failure, drought, earthquake and mine subsidence.

Priority J

Projects can "just be done" without requiring outside funding and are able to be implemented within one year of plan adoption. These can be one-time projects or ongoing projects and may address any hazard.

Mitigation Strategy
Cost/Benefit Analysis

A cost/benefit analysis will be needed for any of these projects to be implemented. A cost/benefit analysis will be performed at the time of project selection. The committee assigned preliminary cost/benefit assessments to each identified project, using general terms of High, Medium, and Low related to both the cost and benefit.

A "High" rating on cost means it is unlikely the jurisdiction could accomplish the project without outside funding, while a "High" rating on benefit relates to how well the project would mitigate the situation.

A "Low" cost rating, conversely, means that it is likely the jurisdiction can accomplish the project without outside funding.

These ratings are simply perceptions of the community, and formal cost/benefit analysis would have to be performed for each project once true costs were assigned.

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
1	Aledo	Shelter at Mercer County Fairgrounds	Severe Weather	County/ Ag Society	Construct multi-purpose storm shelter in a highly populated area	A	Mayor	2017	High/ High
1	Aledo	Shelter for downtown Aledo	Severe Weather	Local/ County	Construct and/or provide adequate renovations to existing buildings downtown	A	Mayor	2017	High/ Low
4	Aledo	Generator for WRMJ station & tower	All hazards	WRMJ/ local TIF	Maintain a centralized communication center	A	John Hoscheidt	2016-2017	High/ High
1	Aledo	Generator for VFW	Severe Weather	Local/TIF	Provide an adequate building in the event of an emergency	A	Mayor,	2016/2017	High/ High
3	Alexis	Water main upgrade	Fire protection	FEMA DECO	Install new and upgrade main for ISO	B	Jim Olson	2018-2020	High/ High

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
3	Alexis	Generator for water and for sewer plant	No water and sewer backup	FEMA DECO	Install generator at main well & at sewer plant	B	Jim Olson	2015-2017	High/Medium
1	Bay Island	Emergency Evacuation	Flooding	Mercer County EMA, MCHD	Enter contact numbers of residents into a State of Illinois Rapid Electronic Notification (SIREN) "alert by list" template for quick sharing of emergency information with Bay Island residents	J	Brian Mills, Commissioner	For Spring flooding season	High/Low
2	Bay Island	Emergency Evacuation	Flooding	PDM Grants	Obtain a portable emergency warning siren for evacuation purposes	B	Brian Mills, Commissioner	For Spring flooding season	High/Low
3	Joy	Storm water drainage	Basement flooding/ road flooding	FEMA Local CDAP	Replace culverts, clean ditches, install storm water system	B	Mayor, Todd Heath	2017-2025	Medium/High
1 & 5	Joy	Generator for well	Water for village and fire department	FEMA DECO	Back-up generator	B	Mayor, Todd Heath	2016-2017	High/Medium

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
1	Keithsburg	Public storm shelter	Safety of residents and visitors	$75,000	24x24 building	A	Mayor, Allen Henshaw	2016-2018	High/Low
1 & 5	Keithsburg	Generators	Severe storms	FEMA	Install stand by generators at 5 locations Well-shelter 3 lift stations	A	Mayor, Allen Henshaw	2016-2017	High/Low
3	Keithsburg	Culvert replacement App-18 blocks	Draining to prevent flooding	$40,000	Install culvert onto App 20 blocks for storm drainage	A	Mayor, Allen Henshaw	2016-2018	High/Low
4	Matherville	Emergency response	All hazards	Local	Education/ Notification Signs at fire station Listing as a shelter	J	Mayor, Steph McMeekan	2016	High/Low
1	Matherville	Emergency Response	Tornado Severe Weather	FEMA Local	Provide helmets at school for kids in case of debris (building collapse)	A	Mayor, Steph McMeekan	2016-2018	High/Low
3	Matherville	Infrastructure Emergency Response	Dam failure	FEMA Local	Dam upgrades at the lake to bring into compliance	C	Mayor, Steph McMeekan	2017-2019	Moderate/High

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
1	New Boston	Public storm shelter	Tornado Severe weather	FEMA Local	Would like to install an underground shelter for the public	A	Mayor	2018-2019	High/High
1,3,5,6	New Boston	Redo Roads	All Hazards	Local	Resurface rough and deteriorating roads	A	Mayor	2016	High/High
1	New Boston	2- new storm sirens	Tornado Severe weather	FEMA Local	Add siren pointing in opposite direction at fire department Also a siren by the river. Currently have 1 storm siren, but it is not enough	A	Mayor	2016-2017	High/High
1	New Windsor	Generator for water tower pumping station	Tornado Severe Weather Ext. Temp.	FEMA	Install generator	A	Mayor Mike Peterson	2016-2019	High/Medium
3	North Henderson	Water main upgrade	Water flow for fire protection	DECO CDAP	New mains to support fire fighting	B	Mayor Ron Brown	2017-2020	High

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
1	Seaton	Generators for warming centers	Tornado Severe Weather Ext. Temp.	FEMA	Install generator	A	Fire Chief, Frank Wheeler	2016-2017	High/Medium
1	Seaton	Storm Siren	Tornado Severe Weather	FEMA	Install updated warning system	A	Mayor, Bob Springer	2018-2019	High/Medium
1	Sherrard	Infrastructure	All Hazard		Connect water tower in Sherrard to water tower at Fyre Lake	A	Delbert Henry	2016-2019	High/High
2	Sherrard	Emergency Response and Infrastructure	All Hazard		Extend existing road, 1st ave, to 310th str to give access to Fyre Lake	A	Delbert Henry	2016-2019	High/High
3	Sherrard	Infrastructure Emergency Response	All Hazard		Complete 310th street	A	Delbert Henry	2016-2019	High/High

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
5	Viola	Emergency Response	Tornado Severe Storm Ext. Temp.	FEMA	Ensure each shelter location & emergency response center has generator	B	EMA, Shelter site manager	2016-2021	High/Medium
1	Viola	Infrastructure	Sev. Storm Tornado Wind	FEMA	Damage to existing building that needs demolition-causes life safety issues	B	Village Board	2016-2021	High/High
3	Viola	Infrastructure	Flooding Flash Flooding	IDOT USDA FEMA	Determine ways to improve culverts, drainage systems for better water run off	B	Village Board	2016-2021	High/High
3	Viola	Emergency Response	All Hazard	IDOT IEMA FEMA	Obtain and have ready all equipment necessary to transportation routes & disaster cleanup	B	Village Board	2016-2021	High/High
5	Mercer County	Emergency Response	All Hazard	County State	Assessment office aerial photography update. Last county flight 2003	B	Mary McClellan	2017	Medium/High

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
3	Preemption township	Infrastructure	2 bridges unsafe, roads created with heavy rain and river flooding, low lying roads	IDOT FEMA	Build 2 narrow bridges Rebuild roads	A	Township board	2016	High/High
3	Rivoli Township	Infrastructure	Unsafe roads created with heavy rain/flooding	IDOT FEMA	Rebuild roads	A	Township board	2016	High/High
3	Ohio Grove Township	Flood containment system	Flood	FEMA	Install flood control system	A	Road commissioner, Jeff Simpson	2016-2017	Medium/ Medium

Jurisdictional Project Grid

Goal	Community	Project Type	Hazard Type	Possible Funding	Project Description	Priority	Lead Contact	Proposed Schedule	Benefit/Cost
3	Millersburg Township	More gravel Inject oil	Hazard from Poor roads	State Federal	Upgrade drainage subgrade	A	Township board	2016	High/High
3	Abington Township Mercer County	Infrastructure	All hazard	FEMA Local	Replace pilings	A	Township board	Summer 2016	High/High
3	Suez Township	More gravel oil	Poor roads	FEMA	Replace pilings	A	Township board	2016	High
3	Eliza Township	More gravel	Poor roads	FEMA	rock	A	Township board	2016	High
3	Greene Township	More money	Weight lime	IDOT IEMA	Replace bridge	A	Township board	2016	High

National Flood Insurance Program

NFIP (National Flood Insurance Program)

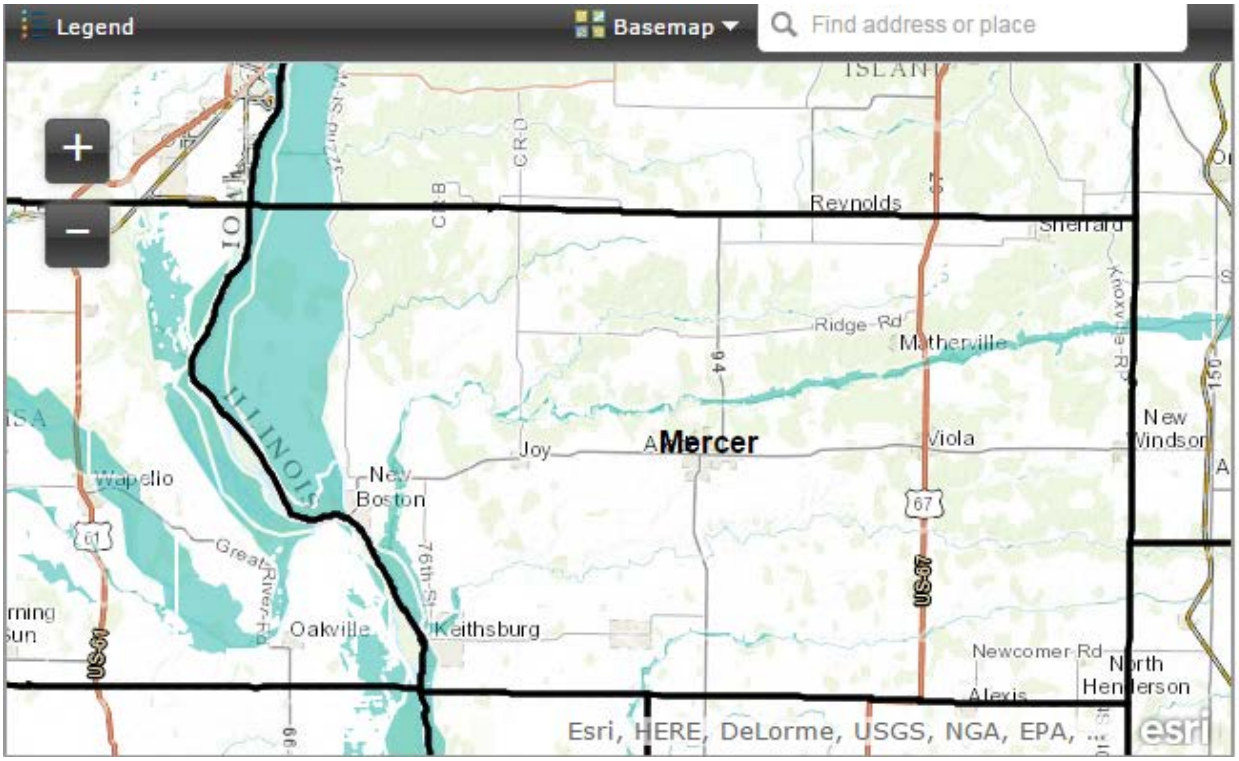
The National Flood Insurance Program aims to reduce the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically. www.fema.gov/national-flood-insurance-program

The National Flood Insurance Program in Illinois is a voluntary mutual agreement between the local community and the federal government. Current listings of participating communities in Mercer County can be accessed at:
https://www.fema.gov/national-flood-insurance-program-community-status-book

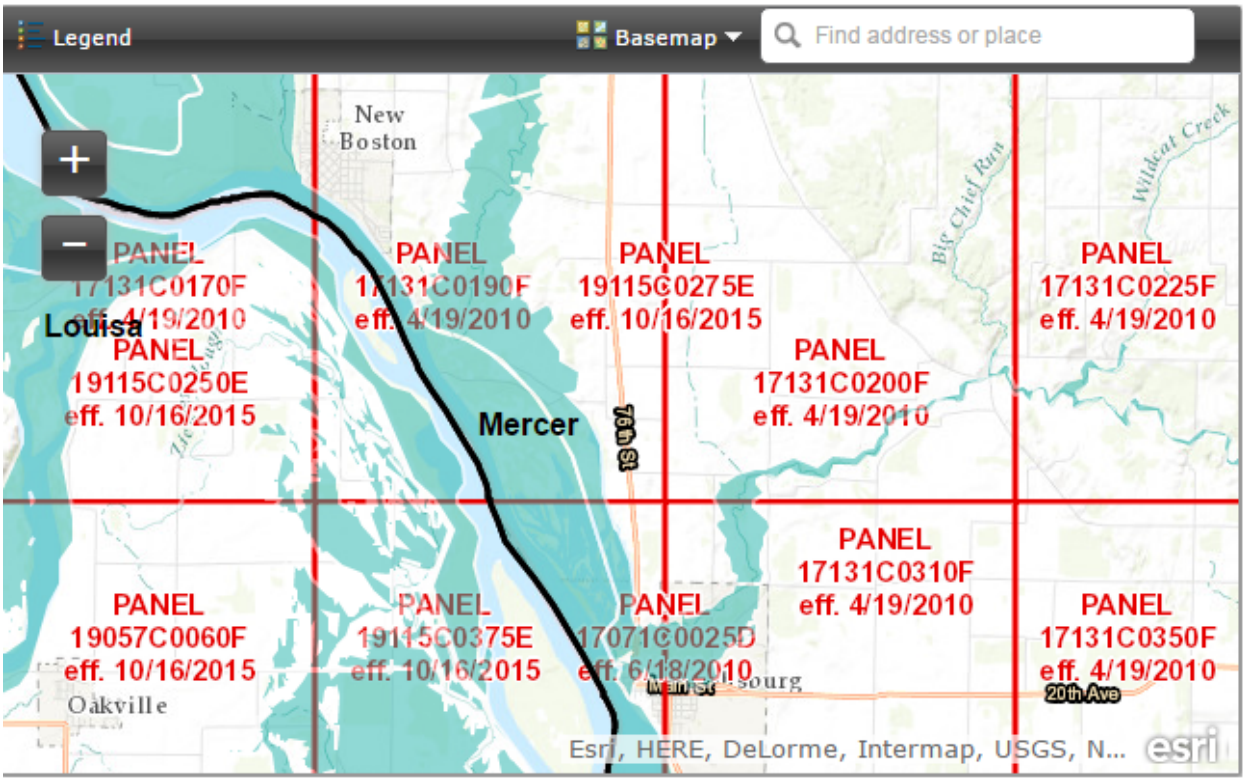
Illinois Flood Plain Maps are available at www.illinoisfloodmaps.dfirm. Additional maps for all Mercer County municipalities, villages, unincorporated areas, etc. are available. Mercer County does conduct a flood plain management program through county services at the courthouse.

Under the current Flood Map, the communities of Aledo, Alexis, Keithsburg, Seaton as well as Mercer County participate in the National Flood Insurance Program (NFIP). Maintaining active status in NFIP will be a portion of the plan maintenance strategy. Jurisdictions adopting the plan are required to maintain active status to continue to be covered by the plan. This continued participation will be monitored by the EMA Director. The EMA Director will also provide assistance and guidance to each jurisdiction in additional planning processes, ensuring that the components of newly developed plans and ordinances are consistent with the components of the Multi-Jurisdictional Hazard Mitigation Plan. This will provide a resource for jurisdictions in planning activities such as comprehensive planning, strategic planning, or other plans that may be developed by participating jurisdictions.

Mercer County



Keithsburg



Plan Incorporation & Maintenance

One crucial element of the Mercer County Hazard Mitigation Plan is the maintenance and implementation of the plan. The Mercer County Emergency Management Director will be responsible for the record keeping and maintenance of the plan. This responsibility will include calling and facilitating the annual plan meeting, surveying the participating jurisdictions for progress on jurisdictional goals, and maintaining detailed records for plan updates. Annual meeting of the planning committee, including all of the participating jurisdictions, will be held each year. At that time, the Mercer County Emergency Management Director, will facilitate discussion surrounding the progress of established goals from the FEMA approved plan, assist with the identification of new and emerging project ideas from each of the communities, and facilitate discussion of new issues that may have arisen of the past year that affect the plan. Records of these annual meetings will be maintained within the Mercer County Emergency Management office, and compiled for plan updates within the five year update time frame. In addition to maintaining records for the plan updates, the Emergency Management Director will also serve as a resource for the participating jurisdictions to identify potential funding streams for identified projects within the plan, and referring communities to resources and assistance to moving projects from plan to completion.

Mercer County Plan Incorporation Process

Jurisdiction	Responsible Party	Incorporation	Adoption Date
Mercer County	Mercer County Board Chair	Formal adoption, monitor and review process	
Aledo	Mayor	Formal adoption, monitor and review process	
Alexis	Village President	Formal adoption, monitor and review process	
Bay Island	Chairman	Formal adoption, monitor and review process	
Joy	Village President	Formal adoption, monitor and review process	
Keithsburg	Mayor	Formal adoption, monitor and review process	
Matherville	Village President	Formal adoption, monitor and review process	
New Boston	Mayor	Formal adoption, monitor and review process	
New Windsor	Village President	Formal adoption, monitor and review process	
North Henderson	Village President	Formal adoption, monitor and review process	
Seaton	Village President	Formal adoption, monitor and review process	
Sherrard	Mayor	Formal adoption, monitor and review process	
Viola	Village President	Formal adoption, monitor and review process	

Acronyms

A

B

C

CDAP – Community Development Assistance Program

CFR – Code of Federal Regulations

CPG – Comprehensive Preparedness Guide

D

DCEO – Department of Commerce and Economic Opportunity

DMA 2000 – Disaster Mitigation Act of 2000

DNR – Department of Natural Resources

E

EF – Enhanced Fujita

EMA – Emergency Management Agency

EMS – Emergency Medical Services

EPA – Environmental Protection Agency

F

FEMA – Federal Emergency Management Agency

G

GIS mapping – Geographic Information System

GPS – Global Positioning System

H

HMA – Hazard Mitigation Assistance

HMGP – Hazard Mitigation Grant Program

HSA – Hydrologic Service Area

HVA – Hazard and Vulnerability Assessment

I

IDOT – Illinois Department of Transportation

IEMA – Illinois Emergency Management Agency

INHMP – Illinois Natural Hazard Mitigation Plan

ISGS – Illinois State Geological Survey

J

K

L

M

N

NCDC – National Climatic Data Center

NFIP – National Flood Insurance Program

NOAA – National Oceanic and Atmospheric Administration

NWS – National Weather Service

O

OMM – Office of Mines and Minerals

P

PDM – Pre-Disaster Mitigation

POD – Point of Distribution

Q

R

S

SBA – Small Business Administration

SHMO – State Hazard Mitigation Officer

T

THIRA – Threat Hazard Identification Risk Assessment

U

USDA - United States Department of Agriculture

V

W

WIRC - Western Illinois Regional Council

X

Y

Z

Attachments

1. Grant announcement letter to municipalities
2. Request to review 2010 Mercer County Natural Hazard Mitigation Plan
3. Mercer County Natural Hazard Mitigation Plan update review form
4. Statement of Intent (sent to all municipalities)
5. Signed Statement of Intent from each municipality and county board
6. Mercer County Natural Hazard Survey
7. Existing documents checkoff
8. Storm Siren locations in Mercer County
9. Mercer County Water Facilities locations
10. Mitigation Strategies Meeting PowerPoint
11. Public Notice sent to each municipality
12. Public Notice sent to churches in Mercer County
13. General public notice document for miscellaneous places
14. Mercer County Health Department Facebook Public Notice post
15. Mercer County Medical Reserve Corps Facebook Public Notice post
16. Adoption Resolution

Attachment 1

Mercer County Health Department

Office of Emergency Management

305 NW 7th Street

Aledo, Illinois 61231

(309) 582-3759

FAX (309) 582-3793

Dear Municipality Leaders,

The Mercer County Health Department has received $33,332.71 for the HGMP grant. This grant will be used to update the current Mercer County Hazard Mitigation Plan. This plan must be updated annually and approved by FEMA every five years to remain current.

We are inviting each municipality to participate in the hazard mitigation planning process. This process will include a variety of meetings and/or workgroups that will require a degree of participation from the designated representative(s) from the municipality.

Your participation will benefit the county by providing expert insight in identifying hazards and prioritizing potential projects to mitigate the effects of natural hazards prone to the county. **Annual participation in this planning process is required for jurisdictions to be eligible for mitigation and FEMA funding for future disaster events.**

If your municipality is interested in participating please sign and return the Statement of Intent to the Mercer County Health Department in the self-addressed envelope enclosed.

If you have any questions or concerns at this time please contact the Mercer County Health Department (309)-582-3759

Sincerely,

Jennifer Hamerlinck, RN, Director

Mercer County Emergency Management

Attachment 2

Mercer County Health Department

Office of Emergency Management

305 NW 7th Street

Aledo, Illinois 61231

(309) 582-3759

FAX (309) 582-3793

To whom it may concern:

Enclosed is a CD with a copy of the 2010 Mercer County Hazard Mitigation Plan. Please review the past plan and document in a detailed manner any updates, additions, changes or input you feel should be included in the 2015 Mercer County Hazard Mitigation Plan. Please return feedback forms to the Mercer County Health Department in the included self-addressed envelope by July 1, 2015. Reminder, **annual participation in this planning process is required for jurisdictions to be eligible for mitigation and FEMA funding for future disaster events**. If you have any questions or concerns please contact the Mercer County Health Department.

Thank you for your cooperation,

Jenn Hamerlinck

Katie Ball

Nikki Vipond

Attachment 3

Mercer County Hazard Mitigation Plan

Update Review

I have read and reviewed the Mercer County Hazard Mitigation Plan for needed updates, additions, changes, or input to be included in the annual update for 2015

☐ I recommend the following updates or changes:

_____
_____
_____
_____

☐ I recommend the following additions:

_____
_____
_____
_____

☐ I do not have any updates or changes at this time.

_____ _____

Signature Date

_____

Village/Municipality or Agency Name

Attachment 4

Statement of Intent in All-Hazard Mitigation Planning

City of _____

As a potential participant in the Hazard Mitigation Assistance Program, the City of _____, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, the City of _____, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Signature of Authorized Representative Date

Print Name Title of Representative

Attachment 5

Statement of Intent in All-Hazard Mitigation Planning

City of Aledo

As a potential participant in the Hazard Mitigation Assistance Program, the City of Aledo, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the City of Aledo, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Christopher D. Hayloch — 4/15/15

Signature of Authorized Representative — Date

Christopher D. Hayloch — Mayor

Print Name — Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

Village of Alexis

As a potential participant in the Hazard Mitigation Assistance Program, the Village of Alexis, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of Alexis, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Jim Olson — 4-16-15

Signature of Authorized Representative — Date

Jim Olson — Supt

Print Name — Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

Bay Island Drainage District

As a potential participant in the Hazard Mitigation Assistance Program, the Bay Island Drainage District, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the ~~Village of New Windsor~~ Bay Island Drainage District, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

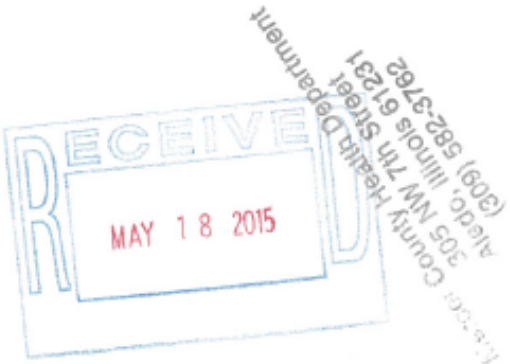
As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Brian D. Mills 5/12/2015

Signature of Authorized Representative Date

Brian D. Mills Chairman – Bay Island Drainage

Print Name Title of Representative



Statement of Intent in All-Hazard Mitigation Planning

Village of Joy

As a potential participant in the Hazard Mitigation Assistance Program, the Village of Joy, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of Joy, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Todd Heath 4-21-15

Signature of Authorized Representative Date

TODD HEATH VILLAGE PRESIDENT

Print Name Title of Representative

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Statement of Intent in All-Hazard Mitigation Planning

City of Keithsburg

As a potential participant in the Hazard Mitigation Assistance Program, the City of Keithsburg, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the City of Keithsburg, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Signature of Authorized Representative — Date: 4-22-15

Allen Henshaw — Mayor

Print Name — Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

Village of Matherville

As a potential participant in the Hazard Mitigation Assistance Program, the Village of Matherville, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of Matherville, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Stephanie K. McMeekan — 4/24/15

Signature of Authorized Representative — Date

Stephanie K. McMeekan — Village President

Print Name — Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

Mercer County Board

As a potential participant in the Hazard Mitigation Assistance Program, Mercer County, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, Mercer County, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

	6/2/2015
Signature of Authorized Representative	Date
Brian Anseeuw	Chairman Mercer Co. Board
Print Name	Title of Representative

RECEIVED
JUN - 4 2015

Statement of Intent in All-Hazard Mitigation Planning

City of Mercer

As a potential participant in the Hazard Mitigation Assistance Program, the City of New Boston, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, the City of New Boston, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Signature of Authorized Representative — Date: 14 JAN 2016

JOE W. VANN III — CHAIR, MERCER COUNTY BOARD

Print Name — Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

City of New Boston

As a potential participant in the Hazard Mitigation Assistance Program, the City of New Boston, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, the City of New Boston, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

	5-27-15
Signature of Authorized Representative	Date
Christopher T. DeFreeze	Mayor
Print Name	Title of Representative

RECEIVED
MAY 27 2015

Statement of Intent in All-Hazard Mitigation Planning

Village of New Windsor

As a potential participant in the Hazard Mitigation Assistance Program, the Village of New Windsor, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of New Windsor, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Michael Peterson 4-28-15

Signature of Authorized Representative Date

Michael Peterson Village President

Print Name Title of Representative

Statement of Intent in All-Hazard Mitigation Planning

Village of North Henderson

As a potential participant in the Hazard Mitigation Assistance Program, the Village of North Henderson, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of North Henderson, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

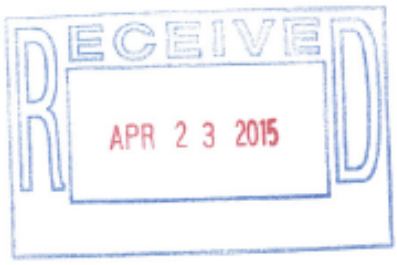
As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Ron Brown 4-21-14

Signature of Authorized Representative Date

Ron Brown Village President

Print Name Title of Representative



Statement of Intent in All-Hazard Mitigation Planning

Village of Seaton

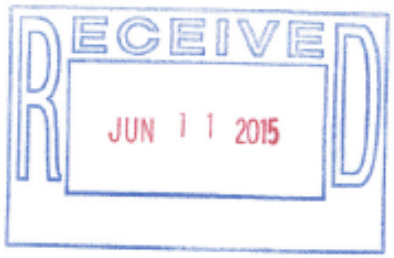
As a potential participant in the Hazard Mitigation Assistance Program, the Village of Seaton, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, the Village of Seaton, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

[signature]	6-11-15
Signature of Authorized Representative	Date
R. Sprague	President Village of Seaton
Print Name	Title of Representative



Statement of Intent in All-Hazard Mitigation Planning

Village of Sherrard

As a potential participant in the Hazard Mitigation Assistance Program, the Village of Sherrard, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning implementation, the Village of Sherrard, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

Paula M. Rath — 5/11/15

Signature of Authorized Representative — Date

Paula M. Rath — Village Trustee

Print Name — Title of Representative

MAY 14 2015

Statement of Intent in All-Hazard Mitigation Planning

Village of Viola

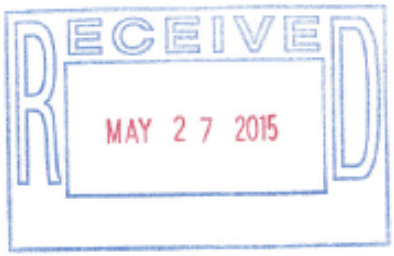
As a potential participant in the Hazard Mitigation Assistance Program, the Village of Viola, Illinois hereby states their interest in participating in the multi-jurisdictional Mercer County All-Hazard Mitigation Plan.

After FEMA funding approval and during the planning and implementation, the Village of Viola, Illinois agrees to participate in the hazard mitigation planning process.

We understand that the process will include a variety of meetings and/or workgroups that will require a degree of participation from a designated representative(s) from the municipality.

As, signed, we further understand that this is a voluntary program and participation may benefit our jurisdiction by identifying hazards and prioritizing potential projects to mitigate the effects of these natural hazards. This statement of intent is nonbinding and is subject to any applicable local legal requirements.

	5-27-15
Signature of Authorized Representative	Date
Kirk Doonan	President
Print Name	Title of Representative



Attachment 6

Mercer County Health Department

Office of Emergency Management

305 NW 7th Street

Aledo, Illinois 61231

(309) 582-3759

FAX (309) 582-3793

1. Which of the following types of natural hazards events have you or someone in your household experienced TO THE EXTENT THAT THERE WAS HARM TO YOU, YOUR FAMILY, OR YOUR PROPERTY? (Please check all that apply)

Severe Storm (wind, lightning)	
Flood	
Winter Storm (ice, hail, etc.)	
Extreme Temperatures (heat, cold)	
Tornado	
Drought	
Earthquake	
Mine Subsidence	
Flash Flooding	

2. How concerned are you about the following natural hazards impacting your community and/or Mercer County? (please check the corresponding box for each hazard)

NATURAL HAZARD	NOT CONCERNED	SOMEWHAT CONCERNED	CONCERNED	VERY CONCERNED	EXTREMELY CONCERNED
SEVERE STORM					
FLOOD					
WINTER STORM					
EXTREME TEMPERATURES					
TORNADO					
DROUGHT					
EARTHQUAKE					
MINE SUBSIDENCE					
FLASH FLOODING					

3. How Prepared do you feel you and your household are for the potential impacts of natural hazard events likely to occur within Mercer County?
    a. Not at all prepared
    b. Somewhat prepared
    c. Adequately prepared
    d. Well prepared
    e. Very well prepared

4. What are the most effective ways for you to receive information about how to make your household and home safer from natural disasters? (please check all that apply)

Government Agencies	
Internet	
Fire Department	
Mail	
Magazine	
Fact Sheet/ Brochures	
Books	
Schools	
Radio Ads	
Radio News	
Television Ads	
Television News	
Newspaper Ads	
Newspaper Stories	
Social Media (Facebook, twitter, etc.)	

Attachment 7

Completed - Existing Documents as of 2010

Document	Mercer County	Aledo	Alexis	Bay Island	Joy	Keithsburg	Matherville	New Boston	New Windsor	North Henderson	Seaton	Sherrard	Viola
Comprehensive Plan	X	X			X								
Subdivision Ordinance		X											X
Zoning Ordinance	X	X	X		X							X	
Building Codes	X	X	X			X	X						
Land Use Plan	X	X			X							*	
Existing Land Use Map	X	X			X								
Flood Ordinance			X										
Flood Insurance Rate Map	X	X		X		X	X	X	X	X	X	X	X
Repetitive Flood Loss List						X							
Elevation Certificates for Buildings													
Capital Improvement Plan		X											
Historic Preservation Ordinance													
Strategic Plan	X	X			X								
Storm Water Management Plan		X											
Hazard Mitigation Plan	X		X	X		X							
Emergency Management/Response Plan	X		X	X	*	X			X				
Drainage Ordinance					X								
Critical Facilities Map	X								*				
Hazard Vulnerability Analysis	X												
Infrastructure Map					X	X		X	X				
Topographic Map		X											
Community Website	X	X	X			X						X	X
Community Action													
Siren		X	X		X	X		X				X	
Weather Radio	X	X				X	X	X	X	X	X	X	X
Storm Spotters	X	X	X		X	X	X	X	X	X	X	X	X
Local Weather Station	X	X			X	X	X	X	X	X	X	X	X
Watershed Repairs													
Road Treatment													

* = In Progress

Attachment 8

Locations and Range of Storm Sirens in Mercer County

Aledo	#1 City of Aledo Garage: 309 E. Main St. #2 Walmart: Rt. 17 and SE 15th Ave #3 Thede Residence: SW 3rd Ave & SW 10th St. #4 Vashti: NW 4th Ave and NW 6th St.	#1: N 41.202004 // W 90.746072 #2: N 41.197947 // W 90.732034 #3 N 41.193870 // W 90.751924 #4 N 41.206288 // W 90.752787	#1 Effective Range at 70dBC: 6200ft #2 Effective Range at 70dBC: 5600ft #3 Effective Range at 70dBC: 5600ft #4 Effective Range at 70dBC: 5600ft
Alexis	Fire Station: 108 E Palmer Ave	N 41°3'39.78 W 90°33'20.56	Effective Range at 70dBC: 5600ft
Bay Island	N/A	N/A	N/A
Joy	Fire Station: 201 W Main	N 41°11''47.55 W 90°52'49.09	Effective Range at 70dBC: 5600ft
Keithsburg	Water Tower: 11th & Adams Fire Station 6th & Jefferson	N 41°05'45.6 W 90°56'09.1 N 41°6'5.07 W 90°56'27.06	Effective Range at 70dBC: 5600ft Effective Range at 70dBC: 5600ft
Matherville	City Hall: 500 2nd Street	N 41.259801 W 90.608352	1 Effective Range at 70dBC: 6200ft
New Boston	Fire Station: 602 Broadway	N 41°10'5.51 W 90°59'43.82	Effective Range at 70dBC: 5600ft
New Windsor	Behind City Hall: 125 N 3rd Ave	N 41°.203059 W 90°441082	Effective Range at 70dBC: 5600ft
North Henderson	N/A	N/A	N/A
Seaton	Fire Station: 317 Maple Street	N 41°6'11.47 W 90°48'6.93	Effective Range at 70dBC: 5600ft
Sherrard	Water Tower: 203 4th Ave	N 41.319621 W 90.506255	Effective Range at 70dBC: 5600ft
Viola	Fire Station: 2004 13th St	N 41.203487 W 90.586540	Effective Range at 70dBC: 5600ft

Attachment 9

Mercer County Water Facilities			
City	**Type**	**Location**	**Coordinates**
Aledo	Water Treatment Plant	West of Joy, on Bryant Road, North of Hwy 17	N 41° 11'37.07" W 90° 55'30.49"
Aledo	Tower/ Pump House	Industrial Park, 187th St, South of SE 8th Street	N 41° 11'32.56" W 90° 43'39.59"
Aledo	Water Tower	Apollo, 581 SW 5th Street	N 41° 11'52.75" W 90° 45'17.09"
Alexis	Water Tower	North Main	N 41° 03'49.69" W 90° 33'19.27"
Alexis	Sewer	W. Spring Grove (Outside town)	N 41° 03'31.6" W 90° 33'59.8"
Alexis	Pump House/Well	South McKnight	
Bay Island Drainage District	Pumping Station	711 Pumping Station Lane, New Boston Il 309-587-8194	N 41° 11'5.54" W 90° 34'49.37"
Joy	Water Tower/Pump House	200 W. Main	N 41° 11'46.29" W 90° 33'19.27"
Joy	Pump House/ Treatment Plant	Main & Washington Street, in corner of the park	N 41° 11'46.7" W 90° 52'42.6"
Keithsburg	Water Tower	11th & Adams	N 41° 05'45.7" W 90° 56'26.1"
Keithsburg	Treatment Plant	6th & Jefferson	N 41° 05'55.2" W 90° 56'26.1"
Keithsburg	Waste Water	150 76th Street	N 41° 06'14.3" W 90° 56'42.3"
Matherville	Water Tower	5th Ave North of 2nd Street	N 41° 15'36.59" W 90° 36'30.42"
New Boston	Treatment Plant	110 E. Liberty Street	N 41° 10'21.58" W 90° 59"39.57"

New Boston	Water Tower	110 E. Liberty Street	N 41º 10'21.58" W 90º 59"39.57"
New Boston	Pump House	110 E. Liberty Street	N 41º 10'21.58" W 90º 59"39.57"
New Windsor	Water Tower	N 3rd Ave Next to City Hall	N 41º 12'10.92" W 90º 26'27.98"
North Henderson	Water Tower/ Treatment Plant	332 South St	N 41º 05'22.41" W 90º 28'31.26"
Seaton	Water Tower	On Walnut St., between 3rd and 4th Street	N 41º 06'10.61" W 90º 48'03.62"
Sherrard	Water Tower	4th Ave, between 2nd and 3rd Street	N 41º 19'10.65" W 90º 30'22.74
Viola	Pump House	1710 13th Street	N 41º 12'08.45" W 90º 35'14.98"
Viola	Wells	1710 13th Street	N 41º 12'08.45" W 90º 35'14.98"
Viola	Water Tower	1710 13th Street	N 41º 12'08.45" W 90º 35'14.98"

Attachment 10

Mitigation Strategies meeting PowerPoint

Mercer County

Hazard Mitigation Grant Program

Mitigation Strategies

1

Reminder

- **Hazard mitigation** is any action taken to reduce or eliminate long term risk to people and property from natural **hazards.**
- Plainly stated, **mitigation planning is…**

A process for states and communities to identify policies, activities and tools to implement mitigation actions. As we know, mitigation is any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. This process has four steps:

- organizing resources
- assessing risks
- developing a mitigation plan
- implementing the plan and monitoring progress.

2

Planning Elements

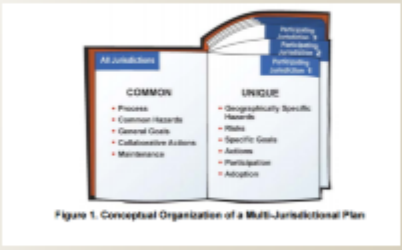


Figure 1. Conceptual Organization of a Multi-Jurisdictional Plan

3

Goals/Committee Approval

- Goal 1 Life, Health and Safety
- Goal 2 Protect Private Property
- Goal 3 Prevent Damage to Infrastructure
- Goal 4 Improve Communication
- Goal 5 Emergency Response Minimization
- Goal 6 reduce the Effects of Natural Hazards

4

Hazard Analysis

- Initial THIRA tools completed based on Hazard Analyses completed throughout the last 5 years; and with new input from Hazard Mitigation Planning committee
- Focus is on natural hazards

5

Hazards Identified

- Natural Hazards with high rankings for Mercer County we will address in this plan
  - Flood
  - Severe Storm
  - Winter Storm
  - Tornado
- Additional Hazards addressed by complete THIRA
  - Hazardous Materials Release
  - Power Failure
  - Pandemic

6

Mitigation Strategy-reducing potential losses identified in risk assessment

- 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.

7 ★

Mitigation Strategy-reducing potential losses identified in risk assessment

Element	Typical Reviewer's Comments
A. Does the plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards? (Goals are long-term; represent what the community wants to achieve, such as "eliminate flood damage", and are based on the risk assessment findings.)	**Required** • Describe the hazard reduction goals to reduce or avoid hazard vulnerabilities for each jurisdiction.

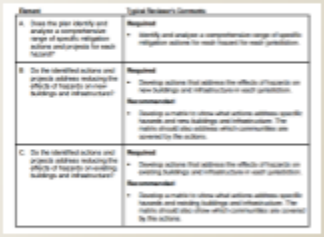
8 ★

Identification & Analysis of Mitigation Actions

- Plan Review Evaluation Criteria 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.

9 ★

Mitigation Strategy-reducing potential losses identified in risk assessment



10 ★

Mitigation Strategy-Action Items

- Plan Review Evaluation Criteria Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

11 ★

Mitigation Strategy-Action Items

Element	Typical Reviewer's Comments
A. Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?	**Required** • Identify at least one mitigation action per jurisdiction (see Exhibit 7).

12 ★

Actions by Jurisdiction

Sample Exhibit 7: Actions by Jurisdiction

Mitigation Actions	Applicable to New / Existing Buildings and Infrastructure	Town A	Town B	Village C	Town D
Building Requirement (ordinance above NFIP)	Existing	√			
Regulation Flood Property Requirement	Existing	√		√	√
Elevate Critical Facility above NFIP	Existing	√			√
Public awareness program on flood fly steward for seasonal warning	New and existing	√	√		√
Drain Repairs	New	√	√	√	√
Relocation with income to NFIC reimbursement	Existing		√		

Key:
√ = The jurisdiction will implement this action

13 ★

Mitigation Strategy-Action Plan

- Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(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 benefit review of the proposed projects and their associated costs.

14 ★

Mitigation Strategy-Action Plan

Element	Typical Reviewer's Comments
A. Does the mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)	**Required** • Describe each jurisdiction's method for prioritizing actions. (In addition to cost-benefit review, considerations may include social impact, technical feasibility, administrative capabilities, and political and legal effects, as well as environmental issues.)
B. Does the mitigation strategy address how the actions will be implemented and administered? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	**Required** • Describe how the actions will be implemented and administered by each jurisdiction. Include in the description the responsible partners/agencies/roles, the funding source(s), and the target completion dates for each action.
C. Does the prioritization process include an emphasis on the use of a cost-benefit review (see page 3-36 of Multi-Hazard Mitigation Planning Guidance) to maximize benefits?	**Required** • Describe the cost-benefit review performed during the prioritization process to identify actions/projects with the greatest benefits. (If cost and benefit data are missing, a qualitative assessment of the comparative benefits will suffice.)

15 ★

Implementation Strategies

16 ★

History of Mitigation in Mercer County

- Project Acquisition grants to Keithsburg (property buy outs)
- FEMA road district & county agency match reimbursement after 2008 flood approximately $627,000
- Comprehensive Planning Grants from Ill DCEO to Keithsburg for $75,000 and to Health Department for $100,000
- New road in Keithsburg-cost $1.3 million-funded through Illinois Disaster Recovery Program (Illinois Department of Commerce and Economic Opportunity)
- Levee project in Keithsburg-cost $4-5 million-funded from same grant as above

17 ★

Prioritizing Projects

- Priority A
  - projects permanently eliminate property damages and/or eliminate or reduce injuries and deaths in a specific area or have a high probability to systematically reduce property damages, injuries and deaths across a wide area.
  - projects address the most significant natural hazards -extreme heat, flood, severe storm, tornado, and winter storm
- Priority B
  - projects reduce property damages in a specific area or have the potential to reduce property damages, injuries and deaths across a wide area or educate the public on disaster preparedness and mitigation
  - projects address the most significant natural hazards-extreme heat, flood, severe storm, tornado, and winter storm
- Priority C
  - projects eliminate or reduce property damages, injuries and deaths from the less significant natural hazards or educate the public on disaster preparedness and mitigation
  - projects address the less significant natural hazards-dam failure, drought, earthquake and mine subsidence
- Priority J
  - projects can "just be done" without requiring outside funding and are able to be implemented within one year of plan adoption. These can be one-time projects or ongoing projects and may address any hazard.

18 ★

Cost/Benefit Analysis

- A "High" rating on cost means it is unlikely the jurisdiction could accomplish the project without outside funding, while a "High" rating on benefit relates to how well the project would mitigate the situation.
- A "Low" cost rating, conversely, means that it is likely the jurisdiction can accomplish the project without outside funding.
- These ratings are simply perceptions of the community, and formal cost/benefit analysis would have to be performed for each project once true costs were assigned.

19 ★

Case Studies

- Break into groups
- Review case study at your table as an example
- Identify jurisdictional mitigation projects]
- Complete jurisdictional worksheets including actions, funding sources, cost analysis, persons/agencies responsible

20 ★

Attachment 11

Public Health
Prevent. Promote. Protect.

Mercer County Health Department
Office of Emergency Management
305 NW 7th Street
Aledo, Illinois 61231
(309) 582-3759
FAX (309) 582-3793

Dear Municipalities,

Enclosed is a public notice flyer regarding the Multi-Jurisdictional Natural Hazard Mitigation Plan; please post this flyer in a visible place at your municipality headquarters (city/village hall/etc.). If you need additional copies to post elsewhere please contact Leslie or Katie at the Mercer County Health Department (309-582-3759). A minimum of one flyer must be posted at each municipality headquarters. Per grant requirements a 90 day public notice period will begin on April 1, 2016 and conclude on June 30, 2016. Reminder, annual participation in this planning process is required for jurisdictions to be eligible for mitigation and FEMA funding for future disaster events.

If you have any questions please do not hesitate to contact the Mercer County Health Department.

Sincerely,

Jenn Hamerlinck

Leslie Connell

Katie Ball

Attachment 12

Public Health
Prevent. Promote. Protect.

Mercer County Health Department
Office of Emergency Management
305 NW 7th Street
Aledo, Illinois 61231
(309) 582-3759
FAX (309) 582-3793

Dear Local Churches,

Enclosed is a public notice flyer regarding the Multi-Jurisdictional Natural Hazard Mitigation Plan; we were hoping you would be willing to post a copy of this in a visible place at your church so that your congregations can be aware. In addition if you were willing to print the notice or information regarding the notice in your weekly bulletin or monthly newsletters we would greatly appreciate it. If you need additional copies to post elsewhere please contact Leslie or Katie at the Mercer County Health Department (309-582-3759). Per grant requirements a 90 day public notice period will begin on April 1, 2016 and conclude on June 30, 2016. We appreciate your cooperation in notifying the public of the Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan. If you have any questions please do not hesitate to contact the Mercer County Health Department.

Sincerely,

Jenn Hamerlinck

Leslie Connell

Katie Ball

Attachment 13

Mercer County Health Department

Office of Emergency Management

305 NW 7th Street

Aledo, Illinois 61231

(309) 582-3759

FAX (309) 582-3793

April 1, 2016

To Whom It May Concern:

Mercer County Health Department in conjunction with Mercer County Emergency Management Agency is in the process of updating the Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan. Hazard mitigation plans are required by the Disaster Mitigation Act of 2000. (DMA 2000: Public Law (PL) 106-390). The law reinforced the importance of mitigation planning, emphasizing planning before disasters occur.

The purpose of the 5 year plan update is to identify potential hazards, associated risks and actions for mitigation. As part of the planning process, we are seeking your input. If you are interested please contact the Mercer County Health Department, prior to June 30, 2016 to set up a time to view the plan prior to finalization in order to provide opinions or feedback.

Attachment 14

Mercer County Health Department
March 31 ·

Public Notice

Public Health

Mercer County Health Department
Office of Emergency Management
305 NW 7th Street
Aledo, Illinois 61231
(309) 582-3759
FAX (309) 582-3793

PUBLIC NOTICE*PUBLIC NOTICE*PUBLIC NOTICE*PUBLIC NOTICE

April 1, 2016

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Like Comment Share

Attachment 15

Mercer County Medical Reserve Corps shared Mercer County Health Department's photo.
Published by Angie Arnold Litterst · March 31 ·

Public Health
Prevent. Promote. Protect.

Mercer County Health Department
Office of Emergency Management
305 NW 7th Street
Aledo, Illinois 61231
(309) 582-3759
FAX (309) 582-3793

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To Whom It May Concern:

Mercer County Health Department in conjunction with Mercer County Emergency Management Agency is in the process of updating the Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan. Hazard mitigation plans are required by the Disaster Mitigation Act of 2000. [DMA 2000: Public Law (PL) 106-390]. The law reinforced the importance of mitigation planning, emphasizing planning before disasters occur.

The purpose of the 5 year plan update is to identify potential hazards, associated risks, and actions for mitigation. As part of the planning process, we are seeking your input. If you are interested please contact the Mercer County Health Department, prior to June 30, 2016 to set up a time to view the plan prior to finalization in order to provide opinions or feedback.

Mercer County Health Department
March 31 ·

Public Notice

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Attachment 16

Office of Emergency Management
Mercer County Health Department
305 NW 7th Street
Aledo, IL 61231
(309) 582-3759
Fax (309) 582-3793

Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan Adoption Resolution

(Name of Jurisdiction)

_____

(Governing Body)

_____

(Address)

_____

RESOLUTION

WHEREAS, the *Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan* has been prepared in accordance with *FEMA requirements at 44 C.F.R. 201.6;* and,

WHEREAS, (Name of Jurisdiction), participated in the preparation of a multi-jurisdictional plan, *Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan*; and,

WHEREAS, (Name of Jurisdiction) is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and,

WHEREAS, (Name of Jurisdiction) has reviewed the Plan and affirms that the Plan will be updated no less than every five years.

NOW THEREFORE, BE IT RESOLVED by (Governing Body) that (Name of Jurisdiction) adopts the *Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan* as this jurisdiction's Multi-Jurisdictional Hazard Mitigation Plan, and resolves to execute the actions in the Plan.

ADOPTED _____ at the meeting of (Governing Body)

_____ _____

Name Title

IEMA

Public Health
Prevent. Promote. Protect.