

Iroquois Countywide Multi-Hazard Mitigation Plan

Prepared for:

Ashkum, Village of
Beaverville, Village of
Buckley, Village of
Chebanse, Village of
Cissna Park, Village of
Crescent City, Village of
Clifton, Village of
Danforth, Village of
Donovan, Village of
Gilman, City of
Iroquois County
Milford, Village of
Papineau, Village of
Sheldon, Village of
Watseka, City of
Wellington, Village of
Woodland, Village of

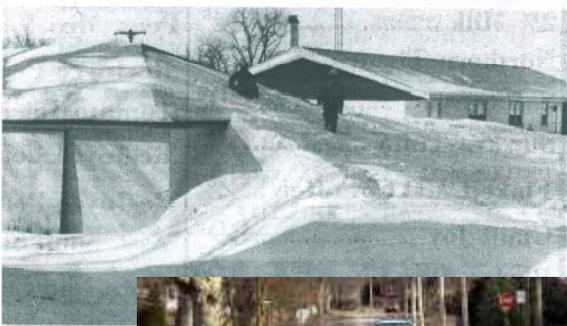
Prepared by:



Stantec



FEMA



IROQUOIS COUNTYWIDE MULTI- HAZARD MITIGATION PLAN

Executive Summary

Natural hazards are an unavoidable part of daily life. Iroquois County has experienced natural hazards, including but not limited to: tornados, flooding, severe winter storms, extreme temperatures, and drought. There is little that citizens can do to control the forces of these events. The communities participating in this plan are subject to natural hazards that can impact the quality of life, and have the capability of destroying property, threatening lives, disrupting businesses and impacting infrastructure. Although it is not possible to control Mother Nature, it is possible to lessen the impact of natural hazards through planning efforts. The Federal Emergency Management Agency (FEMA) defines hazard mitigation as “any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.” The purpose of this plan is to identify the risks associated with the hazards that threaten Iroquois County and identify ways to reduce these risks through mitigation activities for current structures and infrastructure and to lessen the impacts on future growth. These mitigation activities include structural projects, education and outreach efforts, capital improvement projects, etc. FEMA encourages the use of hazard mitigation to develop a complete document that can be modified and updated as needed.

Disaster Mitigation Act of 2000

The United States Congress passed the Disaster Mitigation Act of 2000. This Act requires that state and local governments develop hazard mitigation plans in order to be eligible for pre- and post-disaster funding from the federal government. This plan was developed in coordination with Illinois Emergency Management.

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1.0 Prerequisites

Iroquois County is located in east-central Illinois. It is bordered on the east by Newton and Benton Counties in Indiana and on the north, south, and west by Kankakee, Vermillion, and Ford Counties, Illinois, respectively. The County is approximately 1,118 square miles in size and the county seat is Watseka. According to the 2000 U.S. Census, the population of the County was 31,334 people. Iroquois County is largely agrarian, with 95% of the total acreage used for agricultural purposes. According to the 2000 Census, there is no predominant employment category. Rather, there are five categories of employment that employ greater than 10% of the labor force. The median income for Iroquois County was \$38,071, approximately 86% of the national median income. There are twenty incorporated villages and two incorporated cities in Iroquois County, along with 26 townships. These include:

Cities: Gilman and Watseka

Villages: Ashkum, Beaverville, Buckley, Chebanse, Cissna Park, Clifton, Danforth, Donovan, Iroquois, Loda, Martinton, Milford, Onarga, Papineau, Sheldon, Thawville, Wellington, and Woodland.

Townships: Artesia, Ash Grove, Ashkum, Beaver, Beaverville, Belmont, Chebanse, Concord, Crescent, Danforth, Douglas, Fountain Creek, Iroquois, Loda, Lovejoy, Martinton, Middleport, Milford, Milks Grove, Onarga, Papineua, Pigeon Grove, Prairie Green, Ridgeland, Sheldon, and Stockland.

Unincorporated Communities: Bryce, Claytonville, Coaler, Cutmer, Darrow, Eastburn, Effner, Fountain Creek, Goodwine, Greer, Hallock, Hickman, Hooper, L'Erable, La Hogue, Leonard, North Hooper, Pitchin, Pittwood, Ridgeville, Schwer, Stockland, Webster, and Woodworth.

1.1 ADOPTION BY THE LOCAL GOVERNING BODY

The Iroquois Countywide Multi-Hazard Mitigation Plan, hereafter known as "the Plan" adheres to the guidelines outlined in *44 CFR, Section 201.6*.

As the Plan's Administrator, Iroquois County submitted the Plan to the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) Region V for review and comment. After the state and federal reviewers certified that the Plan was approved, Iroquois County then forwarded the Plan to each participating jurisdiction for formal adoption. Signed copies of the executed orders for each jurisdiction are included in **Appendix A** of the Plan.

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The following jurisdictions are represented by the Plan.

Table 1. Jurisdiction Represented by the Plan

| Community | FEMA Community ID | Adoption Date |
|----------------------------------|--------------------------|----------------------|
| Ashkum, Village of | 170287 | |
| Beaverville, Village of | 171754 | |
| Buckley, Village of | 171155 | |
| Chebanse, Village of | 170288 | |
| Cissna Park, Village of | 170289 | |
| Clifton, Village of | 170290 | |
| Crescent City, Village of | 170291 | |
| Danforth, Village of | 170292 | |
| Donovan, Village of | 171156 | |
| Gilman, City of | 170293 | |
| Iroquois County (Unincorporated) | 170731 | |
| Milford, Village of | 170294 | |
| Papineau, Village of | 171159 | |
| Sheldon, Village of | 170296 | |
| Watseka, City of | 170297 | |
| Wellington, Village of | 171160 | |
| Woodland, Village of | 170819 | |

Community Information:

Village of Ashkum: According to the 2000 Census, the population of Ashkum is 750 people. Established in 1856 and named for an Indian chief, Ashkum is located about halfway between Chicago and Champaign, Illinois on I-57. Other routes that go through the Village include State Route 116 and US Route 45. Businesses in the community include residential, commercial, industrial, professional, and agricultural services. The main crops in the community are corn and soybeans.

Village of Beaverville: As of the 2000 Census, there were 391 people in Beaverville. Formerly called St. Mary, the Village was settled in 1851 by families from Canada. Due to another community named St. Mary in Illinois, the name was changed to Beaverville in 1905. St. Mary's Cathedral, sometimes called the "Prairie Cathedral", is located here and is on the National Register of Historic Places. The Village has a total area of 0.3 square miles.

Village of Buckley: The recorded population was 593 people, 261 households, and 171 families living in the Village. There are two schools in the community: Saint John's Lutheran School and Christ Lutheran High School, which is west of the Illinois Central Railroad. Buckley is home to the Dutch Masters baseball team, which is a member of the East Illinois League.

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Village of Chebanse: Chebanse means “duckling” in the Potawatomi language. Chebanse is located in Iroquois and Kankakee Counties. The portion of the Village that is in Kankakee County is included in the Kankakee-Bradley, Illinois Metropolitan Statistical Area and therefore a portion is considered to be in the Chicago metropolitan area. The Village was established in 1854 and was the first stop on the Illinois Railroad south of Kankakee. As of 2000, there were 1,148 people, 440 households, and 326 families in the village.

Village of Cissna Park: As of the 2000 census there were 811 people, 375 households, and 217 families in the Village. Cissna Park is located in Pigeon Grove Township.

Village of Clifton: There were 1,317 people, 519 households, and 367 families in Clifton during the 2000 Census. The Village has a paper, *The Advocate*, that serves the communities of Clifton, L’Erable and Milks Grove, which first published in 1893. Clifton has a swimming pool, two public parks, and a baseball field. Local businesses include professional services and retail.

Village of Crescent City: In 2000, there were 631 people, 259 households, and 183 families in Crescent City. In 1970, the City suffered extensive damages from the derailment of the Toledo, Peoria, and Western Railroad Company’s train. A propane tank ruptured and caused fires that destroyed businesses and homes in the area.

Village of Danforth: The Village has 0.5 square miles of land. In 2000, there were 587 people residing in the Village, 202 households and 131 families.

Village of Donovan: Donovan is located in the Beaver Township. The population in Donovan was 351 during the 2000 Census. There were 132 households and 97 families residing in the Village at the time of the 2000 Census.

City of Gilman: The City of Gilman is located approximately 60 miles south of Chicago. During the 2000 Census, the City included 1,793 people, 739 households, and 472 families. Amtrak services Gilman and has a regular schedule. Businesses in the community include: farming, restaurants, hotels, gas stations, a grocery store, a drug store, a local newspaper, antique shops, and professional services. Gilman is referred to as the City of Crossroads due to its location along Interstate 57 and U.S. Routes 24 and 45.

Village of Loda: In 2000, there were 419 people, 166 households, and 111 families living in Loda. The Village is 1.5 square miles, with 0.68% of this area as water.

Village of Martinton: The population of the Village is 375 people, 135 households, and 102 families. The Village has a total area 0.2 square miles.

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Village of Milford: The Village of Milford has 1,369 residents, 616 households, and 391 families. The name of the Village came from the location where Old Hubbard Trail forded Sugar Creek and where a mill stood at the forde in 1836.

Village of Onarga: The population in the Village of Onarga is 1,438 people, 475 households and 342 families. Onarga was incorporated on February 9, 1863 and was one of the first settled areas in Iroquois County. There are several tree and shrub nurseries that have been in business for over a century; therefore, Onarga is sometimes called the “Nursery Capital of the Midwest”. Onarga is the resting spot of Civil War spy and Pinkerton Detective Timothy Webster. There are several businesses, including a movie theater, golf course, restaurants, and professional services.

Village of Papineau: The Village is comprised of a total area of 0.2 square miles. In 2000, there were 196 people, 60 households, and 51 families in the Village.

Village of Sheldon: Sheldon has a total area of 0.8 square miles. As of 2000, there were 1,232 people, 464 households, and 333 families.

Village of Thawville: The total area in the Village is 0.3 square miles and all of this is land. In 2000, there were 258 people, 102 households, and 74 families.

City of Watseka: Watseka was founded on March 4, 1867. The population of Watseka in 2000 was 5,670 people with 2,314 households and 1,483 families. The name came from the Potawatomi name “Watchekeke”, daughter of the evening star. The County courthouse is the only courthouse in the United States to be constructed without public tax dollars. The City has 2.6 square miles of total area.

Village of Wellington: During the 2000 census, there were 264 people, 111 households, and 82 families in Wellington. The area of the community is 0.3 square miles. Businesses in the community include a fertilizer plant, automotive garages, a pallet business, and a heavy construction business.

Village of Woodland: In 2000, there were 319 residents, 124 households, and 91 families in Woodland. The total area of the Village is 0.4 square miles.

1.2 JURISDICTION PARTICIPATION

At the start of the planning process, a stakeholder meeting was held, which included representation from 16 of the 22 jurisdictions within Iroquois County. Representatives from the Illinois Emergency Management Agency and the consultant hired to assist in the planning and authoring of the Plan explained the purpose of a Hazard Mitigation Plan and the requirements for inclusion in the Plan. The criteria were explained as follows:

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- a. Provide representation during planning meetings.
- b. Submit an inventory of plans, data, and reports relevant to hazard mitigation planning.
- c. Review and complete the Multi-Hazard Mitigation Survey at:
<http://gis01.stantec.com/iroquois-co-hazplan/>.
- d. Identify critical "at risk" structures and facilities.
- e. Develop community-wide mitigation goals.
- f. Submit a prioritized list of mitigation activities.
- g. Review and comment on the draft plan.
- h. Incorporate the Plan into existing planning efforts.
- i. Formally adopt the Plan.
- j. Participate in plan maintenance through yearly reviews and five year updates.

Each of the communities was informed of these requirements for participation at the outset of the planning process. The requirements for inclusion in a hazard mitigation plan have been established by the Federal and Illinois Emergency Management Agencies. In addition, the Iroquois County Emergency Services Disaster Agency felt that participation in two meetings was important for sustained participation in the planning process.

Seventeen of the 22 jurisdictions in Iroquois County met the definition of a participant as shown in the table below. The participating jurisdictions are: Ashkum, Beaverville, Buckley, Chebanse, Cissna Park, Clifton, Crescent City, Danforth, Donovan, Gilman, Iroquois County, Milford, Papineau, Sheldon, Watseka, Wellington, and Woodland.

Table 2. Stakeholder Activity Participation Table

| Jurisdiction | Meeting Attendance | Submit Documents | Complete Survey | At-risk Facilities | Mitigation Actions |
|---------------|--------------------|------------------|-----------------|--------------------|--------------------|
| Ashkum | X | X | X | X | X |
| Beaverville | X | | X | X | X |
| Buckley | 1 | X | X | X | X |
| Chebanse | X | X | X | X | X |
| Cissna Park | X | X | X | X | X |
| Clifton | X | X | X | X | X |
| Crescent City | X | X | X | X | X |
| Danforth | 1 | | X | X | X |
| Donovan | X | X | X | X | X |

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Table 2. Stakeholder Activity Participation Table

| Jurisdiction | Meeting Attendance | Submit Documents | Complete Survey | At-risk Facilities | Mitigation Actions |
|-----------------|--------------------|------------------|-----------------|--------------------|--------------------|
| Gilman | X | | X | X | X |
| Iroquois | | | | | X |
| Iroquois County | X | X | X | X | X |
| Loda | 1 | | X | X | |
| Martinton | 1 | | X | | |
| Milford | X | X | X | X | X |
| Onarga | 1 | | | X | |
| Papineau | | | | X | X |
| Sheldon | X | X | X | X | X |
| Thawville | | | | | |
| Watseka | X | X | X | X | X |
| Wellington | 1 | X | | X | X |
| Woodland | X | | X | X | X |

X: Criteria met.

1: Attended one of the three meetings.

2.0 Planning Process

The Iroquois Countywide Hazard Mitigation Plan is developed as a multi-hazard, multi-jurisdictional plan for the communities within Iroquois County, Illinois. The Iroquois County Emergency Services and Disaster Agency served as the Plan's administrator and is the primary point of contact for the plan. Stantec Consulting Services Inc. was hired by Iroquois County to assist in the research, analysis, and development of the plan.

2.1 DESCRIPTION OF THE PLANNING PROCESS

The process used to develop the Plan was based upon FEMA's 386-8 Multi-Jurisdictional Planning document. Specifically, the planning process focused upon soliciting comprehensive feedback from stakeholders and the general public through meetings, open houses, interactive questionnaires, and document comment forms.

Phases of the planning effort were consistent with the original scope of work included in the Fiscal Year 2008 Hazard Mitigation Grant Program grant application and compliant to FEMA recommended approaches including:

- a. Focusing toward including all jurisdictions within the County.

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- b. Forming a multi-tiered planning team with clearly defined roles and responsibilities.
- c. Providing opportunities for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and non-profit interests to be involved in the planning process.
- d. Providing extensive public outreach and opportunities for involvement.
- e. Reviewing and incorporating existing plans, studies, reports, and technical information, as appropriate.
- f. Conducting thorough hazard profiling and comprehensive risk assessment.
- g. Developing mitigation goals and actions prioritized for each community.
- h. Providing opportunities for the public to comment on the Plan during the drafting stage and prior to plan approval.
- i. Developing plan maintenance procedures that keep the Plan up to date.

2.2 THE PLANNING TEAM

The Iroquois County planning process was designed to maximize stakeholder involvement and participation to create a viable plan, complete with risk identification and risk mitigation strategies. Public involvement was an integral part of the development of the Plan and provides access to a broader cross section of county residents than the elected officials and interested professionals in the stakeholder group. The planning process, however, primarily relied on stakeholder involvement and participation guidance throughout all phases of the Plan.

A planning consultant was also contracted by Iroquois County to facilitate the Plan's development and to perform analysis, mapping, and document support.

Together, the Planning Team was represented by the following groups:

Chief Elected Officials. Consisted of the County's senior leadership for each participating jurisdiction including the County Chairman, City Mayors, and Village Presidents. This group authorized and committed the necessary resources and personnel to ensure that each jurisdiction was properly represented and met the participation requirements.

Planning Committee. Consisted of one person as the primary point of contact from each jurisdiction responsible for collecting data, reviewing plans/studies, facilitating public input, developing mitigation goals and actions for each of their jurisdictions, and helping in drafting

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the Plan. The Planning Committee was also responsible for coordinating future plan maintenance including yearly reviews and five-year updates.

Advisory Group. Composed of agencies/organizations from local entities, as well as community representatives, local business leaders, and educators interested in hazard mitigation. This group is responsible for providing historical data and reviewing the draft plan.

Plan Consultant. Stantec Consulting Services Inc. (Stantec) was responsible for facilitating plan development, analysis, mapping, and document preparation support.

Appendix B contains a table of all meeting participants and the jurisdictions they represented.

2.3 PUBLIC INVOLVEMENT

The Iroquois County planning process was designed to maximize public participation. Public participation, for the purpose of the Plan, is defined as an opportunity for each jurisdiction and the citizens of that community to participate in the planning process. Opportunities for public participation were offered through multiple public stakeholder meetings and public informational meetings, a publicly available website, a multi-hazard questionnaire, and additional future plan maintenance opportunities. In addition, representatives of neighboring counties and jurisdictions were solicited for their input into the planning process. Documentation announcing the meetings and soliciting input from the public and stakeholders is available in **Appendix C**.

Opportunities for the public to participate were provided in the following ways:

- a. Planning Team stakeholder meetings were open to the public.
- b. Open public meetings were held to inform the public of the planning process and to request participation.
- c. A Multi-Hazard questionnaire was placed online allowing the public to participate in the Plan and give their additional feedback for possible plan inclusion.
- d. Draft plan text and supporting information were made available via the website for public input and review.
- e. Public opportunities for review of the final plan.
- f. Placement of the draft plan at executive offices as well as public libraries and other government centers.

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In addition, the above opportunities were advertised in local newspapers and by local media, including radio. The Planning Team worked together to incorporate relevant feedback from the public into all phases of plan development.

2.3.1 Public Meetings

Three public meetings were held during the development of the Plan, as shown in the table below. The meetings were publicized through local newspaper announcements, radio announcements, letters to public officials, and a web link from the County's government homepage (**Appendix C**).

Table 3. Stakeholder Meetings Scheduled

| Date | Purpose of Meeting | Location |
|----------|--|---|
| 04/13/09 | Kickoff Meeting, Data Collection | Iroquois Regional Health Center, Watseka, Illinois |
| 09/17/09 | Hazard Assessment and Mitigation Activities | Iroquois County Administrative Offices, Watseka, Illinois |
| 05/05/10 | Mitigation Activity Implementation and Funding | Iroquois County Administrative Offices, Watseka, Illinois |

The Plan Kickoff Meeting held on April 13, 2009 included a presentation to inform community representatives and the public about the hazard mitigation planning process and the benefits for each jurisdiction. The focus of the meeting was to introduce the planning process, request assistance from the public/private sector and citizens, collect hazard data, and encourage continued participation in the planning and implementation process. During this meeting, Mr. Carl Gerdovich of the Iroquois County Emergency Services and Disaster Agency was identified as the Plan's primary point of contact for public input or questions and the primary contact between the County and the Plan's consultant, Stantec Consulting Services Inc.

The Stakeholder Hazard Assessment and Mitigation Activities Meeting held on September 17, 2009, included a presentation sharing the results of the hazard identification surveys, hazard profiles, and hazard assessments. During this meeting, participants were encouraged to define mitigation goals and consider actions in a manner that weighted priority, funding, and mitigation methodology.

The planning consultant and local plan administrators provided guidance throughout both meetings and shared ideas for maximizing stakeholder input. Minutes for each meeting were kept by Stantec and made available to the public, as well as the presentations. They are provided in **Appendix B** of this Plan.

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2.3.2 Multi-Media Outreach

The Planning Team worked with Stantec to develop and host a website for purposes of promoting planning meetings, hazard questionnaires, storing documents, facilitating Plan review and providing general plan information to the public and stakeholders. The site was accessible from the County Emergency Services and Disaster Agency's homepage at <http://www.igesda.com/>.

The site allowed users to upload, download, and access sections and supporting documents of the hazard plan. The result allowed the public to easily obtain and comment on the Plan during both draft stages and prior to Plan adoption. The site was also used to disseminate brochures, past presentations, meeting minutes, other example hazard plans, promote FEMA mitigation project programs and link to the Illinois Emergency Management Agency for additional support. The website proved to be very successful for reaching the community at-large, including those who were unable to attend the public or stakeholder meetings.

Meeting announcements and discussions about the hazard mitigation planning process were also discussed on WGFA, the local radio station. In addition, several of the local newspapers published meeting announcements and articles discussing the results of the meetings.

2.3.3 Public Hazards Questionnaire

The Planning Team worked with their planning consultant to develop and approve a hazard questionnaire, which is attached as **Appendix D**. The purpose was to solicit additional feedback from the community in regard to perceived threats, vulnerabilities and general awareness of the risks associated with natural hazards. Questionnaires and brochures were disseminated to individual community City Halls and also made available upon the Hazard Mitigation Planning website <http://www.igesda.com/>.

Between promotions from local news channels, the website, and the Planning Team, 59 participants completed the survey. The results were ultimately used to support the Plan's Risk Assessment. Questionnaire results are summarized in **Appendix E**.

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2.3.4 Public Review of Draft Plan

The draft plan was assembled and provided to the public and Planning Team for review on February 1, 2010. The public and planning teams were given two weeks to provide comments. Hardcopy versions of the draft plan were delivered to each jurisdiction's City Hall, while electronic versions were made accessible from the Hazard Mitigation Plan website <http://www.igesda.com/>. A press release was issued to encourage the public to access and comment on the plan. Comments received were then submitted to the planning consultant during the pre-approval plan review.

2.3.5 Final Plan Access

Following local adoption and FEMA approval of the Plan, the document will be made available to the public at the following locations:

- a. Each municipal office building in the county as follows:
 - Villages of Ashkum, Beaverville, Buckley, Chebanse, Cissna Park, Clifton, Crescent City, Danforth, Donovan, Martinton, Milford, Papineau, Sheldon, Wellington, and Woodland; and,
 - Cities of Gilman and Watseka; and,
 - Iroquois County.
- b. Iroquois County Emergency Services and Disaster Agency website (<http://www.igesda.com/>).

2.4 INCORPORATION OF EXISTING DOCUMENTS

Existing plans, studies, reports, and technical information were collected from agencies during the planning process and at meetings. The Planning Team members reviewed and identified common problems, development policies, mitigation strategies, and other policies, plans, programs, and regulations. As part of this effort, the Team contacted numerous agencies seeking local hazard data, existing plans, partnerships, common goals, projects, and commitment to an all natural hazards mitigation plan. This outreach included soliciting information from federal, state, and local resources.

The following are examples of the types of information used to identify natural hazards, vulnerable areas and assets, mitigation actions, and mitigation projects.

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Zoning and Subdivision Ordinances. The ordinances adopted by the County prohibit most development in floodplains and “land subject to inundation” to minimize the danger and financial losses of flooding. The Zoning Ordinance does allow development which would not be overly impacted by flooding, such as parks, golf courses, playgrounds, etc.

Emergency Operations Plan (EOP). Iroquois County maintains an Emergency Operations Plan. The plan is a source for hazard identification and emergency operation procedures. Procedures include lists of roles and responsibilities of persons/departments in charge of dispatching support during a natural hazard, rules that are followed, evacuation routes, etc.

Floodplain Ordinance. This ordinance was adopted in 2003 to prevent damages caused by flooding and to regulate development in the floodplain. In addition, the ordinance prohibits development in the floodplain without a permit from the Zoning Administrator, the Illinois Department of Transportation, and the Illinois Division of Water Resources. No development in the flood hazard area is permitted to increase the base flood elevation or impact other properties.

Flood Insurance Rate Maps (FIRMs). Iroquois County’s Flood Insurance Rate Maps were published in 1988. The data was digitized by the State of Illinois and the data was used in correlation with geographic information systems (GIS) to estimate structural vulnerability and critical facilities that are located within area floodplains.

Illinois State Hazard Mitigation Plan. The state hazard mitigation plan was useful in providing information for each hazard (i.e. identifying hazards), vulnerability classes, and assessment methods.

Land-Use Plans. The Iroquois County Land Use Map was adopted in 1995. The plan utilized available natural resources, existing development, protection of certain land uses and natural resources, and available transportation networks to designate optimum development patterns. The plan also guided development away from floodplains and designated open space.

National Flood Insurance Program (NFIP). The County and several of the communities in the County enrolled in the NFIP from 1979 through 1988. The NFIP database contains information regarding the number and value of flood insurance policies in each jurisdiction, the value of any claims paid, and the number of repetitive loss structures in the communities.

Development Suitability Report. In 2005, the City of Watseka commissioned a study of the undeveloped area remaining within the City’s planning jurisdiction. The primary goal of the study was to identify which areas of the city were most suitable for development as residential, commercial, or industrial land uses. Floodways were deemed unsuitable for all development and flood fringe areas were poorly suitable for development.

These and other existing plans, reports, and studies are incorporated or referenced throughout the Plan. If any plans, report, or studies were not included in the plan or if new documents are published, they may be added to the Plan during the next update.

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3.0 Risk Assessment

The Risk Assessment portion of this Plan identifies, profiles, and assesses the natural hazards that are known to affect Iroquois County. The process incorporates describing each hazard and its effects, researching past events, documenting recorded damages, and assessing the probability and consequences of the event happening again.

3.1 IDENTIFYING HAZARDS

Natural hazards in the United States occur in many forms. They can be weather related such as flash floods, severe thunderstorms (hail, wind, and tornadoes), severe winter storms (snow, ice, and frigid temperatures), and coastal storms (hurricanes, storm surges, and tsunamis). They can be geological hazards including volcanoes, earthquakes, and landslides. They can be climatologic including drought, excessive heat, and wildfires; or they can also be driven by topography and hydrology which affects riverine flooding from upstream rain or snow events. Understanding and identifying these hazards and their relationship to land, infrastructure, and population is the first step to achieving risk awareness.

The Illinois Natural Hazard Mitigation Plan considered the following natural hazards:

| | | |
|----------------|-----------------------------|------------------------------------|
| <i>Drought</i> | <i>Extreme Heat</i> | <i>Earthquakes</i> |
| <i>Floods</i> | <i>Severe Winter Storms</i> | <i>Severe Storms and Tornadoes</i> |

During the process of Hazard Identification, the Planning Team considered several natural hazards known to impact communities throughout the United States. Hazards considered included:

| | | |
|----------------------------|-----------------------|------------------------|
| <i>Avalanche</i> | <i>Coastal Storms</i> | <i>Drought</i> |
| <i>Earthquake</i> | <i>Extreme Heat</i> | <i>Flood</i> |
| <i>Hailstorm</i> | <i>Hurricane</i> | <i>Mine Subsidence</i> |
| <i>Severe Winter Storm</i> | <i>Tornado</i> | <i>Tsunami</i> |
| <i>Volcano</i> | <i>Wildfire</i> | <i>Windstorm</i> |

The Planning Team carefully considered regional hazard data, past documented events, and other known sources of hazard information to identify the natural hazards most likely to affect

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Iroquois County. The hazards identified are also consistent with those detailed within the State's Hazard Mitigation Plan and are:

Drought

Earthquake

Extreme Heat

Floods

Severe Storms

Severe Winter Storms

Tornadoes

The team wanted to include mitigation planning for incidents associated with the rail corridors through Iroquois County. The railroad goes through every jurisdiction in the County and a rail incident could have substantial impact on any of the communities. Thus, a summary for the railroad corridor is included in this plan.

3.1.1 Natural Hazards Not Identified Within the Plan

Some natural hazards have little or no effect on Iroquois County and were not addressed in this Plan. They include avalanche, landslides, coastal storms, hurricanes, mine subsidence or karst, volcanoes, and wildfire. While, these hazards were determined to present little to no threat within Iroquois County, they are not precluded from being incorporated into future updates of the Plan as new information develops.

The following hazards were excluded from the Plan:

Avalanche and Landslides. The topography and climate of the Iroquois County area are not conducive to the occurrence of avalanches or landslides. No historical events have been recorded in the Iroquois County area.

Coastal Storms and Hurricanes. The Iroquois County area is approximately 800 miles from the nearest coast. The immediate effects of coastal storms (hurricanes, storm surge, and tsunamis) are not felt in Iroquois County. The secondary effects, or remnants of hurricanes, may produce severe thunderstorms and flooding in the area and those hazards are addressed separately by the Plan.

Subsidence. Mine subsidence is defined as the collapse of underground coal mines resulting in direct damage to a surface structure. Land subsidence occurs when the ground sinks to a lower than normal level. Iroquois County has no active or closed mines; therefore this does not present a threat and is not covered in this Plan.

Volcanoes. More than 50 volcanoes in the U.S. have erupted one or more times in the past 200 years. Volcanoes produce a wide variety of hazards that can take lives and destroy property. Active volcanoes in North America are in California, Oregon, Washington, Alaska, Mexico, Canada, and the Caribbean Islands. Large explosive eruptions can endanger

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people and property hundreds of miles away and even affect global climate. However, there are no active volcanoes within 950 miles of the Iroquois County area. Volcanic activity as a hazard is judged to be minimal and will not be addressed in this Plan.

Wildfire. A wildfire is an uncontrollable burning of grasslands, brush, or woodlands. The potential for wildfire depends upon surface fuel characteristics, weather conditions, recent climate conditions, topography, and fire behavior. Neither Iroquois County or its jurisdictions have a history of wildfire, thus fires will not be addressed in this Plan.

Data sources utilized to determine which hazards to include or exclude within the Plan included: hazard data, reports, plans, flood ordinances, past hazard events, flood insurance claims, land use regulations for hazard data, local records of the emergency management offices, local newspapers, historical knowledge of Planning Team participants, local officials and community members, as well as GIS information from Illinois state sources and HAZUS-MH.

Additional research used to identify hazards included interviews with knowledgeable officials and residents in the planning area, the use of FEMA and other web based data sets and information sources that identify hazards by geographic locations, U.S. Army Corps of Engineers flood data, Flood Insurance Rate Maps (FIRM), Flood Insurance Studies (FIS), GIS, and additional available historic data including information on past hazard events.

3.1.2 Hazards Identified Within the Plan

Hazards included within this Plan are:

| | | |
|-----------------------------|------------------------------------|----------------------|
| <i>Drought</i> | <i>Earthquake</i> | <i>Extreme Heat</i> |
| <i>Floods</i> | <i>Railroad Corridor Incidents</i> | <i>Severe Storms</i> |
| <i>Severe Winter Storms</i> | <i>Tornadoes</i> | |

3.2 PROFILING THE HAZARD

The following section is provided to describe each hazard, its associated causes and effects, and the historical occurrences of each of the hazards in Iroquois County and its jurisdictions. These Hazard Profiles have been created using the best available data from a variety of resources including, but not limited to, the National Climatic Data Center (NCDC), National Weather Service (NWS), Illinois State Water Survey, Illinois State Climatology Center, FEMA Hazard Mapping website, local agencies and newspaper articles, and the approved Illinois State Hazard Mitigation Plan. As part of the profile, each hazard has a summary table like the table below, which defines each variable. The tables are presented individually with each hazard and are also collected together in **Appendix F**.

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In addition, a map of each community is presented in **Appendix G**. For the majority of the hazards identified in this plan, the entire County is equally at-risk. In other words, a thunderstorm or earthquake is equally likely to impact a community without regard to geography. However, for floods, the most commonly impacted area is within the FEMA-mapped 100-year floodplain. Also, for railroad corridor incidents, the proximity to a rail corridor is the decisive factor. Thus each map shows the floodplains in the community, if there are any, and a one-half mile buffer around the railroad lines. The hazard assessment for flooding and railroads were then based on these geographical boundaries, while all other hazards were analyzed based on jurisdictional boundaries.

| Table 4. Hazard Risk Factor Table Key | |
|--|--|
| Period of Occurrence | The normal time of year when a hazard occurs. |
| Number of Events to Date | The number of past events reported to the National Climatic Data Center (NCDC) between 1950 and 2009. |
| Annual Chance Probability | The probability of future occurrences, based on the number of past events divided by the time of record. |
| Location of Impacts | The area most commonly impacted by a natural hazard. |
| Potential Impacts | Impacts typically associated with a particular natural hazard |
| Injury or Death | The number of injuries or deaths reported to the NCDC. |

3.2.1 Area Climate

The climate in Illinois is described as continental with all four seasons. There are generally substantial annual and diurnal temperature, humidity, and pressure system fluctuations, and the area has cold winters and hot summers. The average annual temperature in the central portion of the state, where Iroquois County and its jurisdictions are located, is approximately 53°F. During the summer, there is an average of 10 days with temperatures over 90°F, with an overall average high in the 80's during the summer. During winter there are 140 days at or below 32°F, with average highs in the 30's and lows in the teens. Iroquois County averages approximately 40 inches of precipitation per year, with snow and ice accounting for approximately 23 inches of that total each year. Of the citizens who responded to the survey, 8 out of 10 had experienced a natural disaster within the last decade. The most common event types were winter storms (76%) and floods (57%); however, the perception was that the County was most vulnerable to tornadoes.

The land area of Iroquois County is approximately 1,118 square miles with roughly 21.8 miles of mapped streams and rivers. The County is situated in the Young Till Plains section of the Central Lowlands Province of the Interior Plains. The topography is gently rolling ground moraine, with occasional eskers, karnes, marginal moraines, and outwash, which are all landforms associated with glacial movement from the last ice age.

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without substantial rainfall. A heat wave combined with a drought is a very dangerous situation.

When a drought begins or ends may be difficult to determine. A drought can be short, lasting just a few months, or persist for years before climatic conditions return to normal. While drought conditions can occur at any time throughout the year, the most common time is during the summer months. High temperatures, prolonged high winds, and low relative humidity can aggravate drought conditions.

Because the impacts of a drought accumulate slowly at first, a drought may not be recognized until it has become well established. The many aspects of drought reflect its varied impacts on people and the environment. While the impacts of precipitation deficit may be extensive, it is the deficit, not the impacts, that defines the severity of a meteorological drought.

Droughts can lead to economic losses such as unemployment, decreased land values, and agronomic losses. In 1998, over two billion dollars in property loss was credited to drought in the US.

The Palmer Drought Severity Index (PDSI), in the figure below, indicates the prolonged and abnormal moisture deficiency or excess. The PDSI is an important climatological tool for evaluating the scope, severity, and frequency of prolonged periods of abnormally dry or wet weather. It can be used to help delineate disaster areas and indicate the availability of irrigation water supplies, reservoir levels, range conditions, amount of stock water, and potential intensity of forest fires.

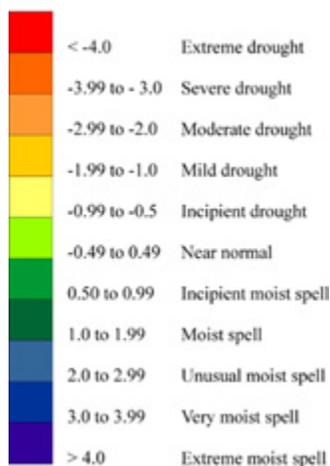


Table 5. Palmer Classification System

| | |
|-----------------------------|---------------------|
| -4.0 inches or less | Extreme drought |
| -3.0 inches to -3.99 inches | Severe drought |
| -2.0 inches to -2.99 inches | Moderate drought |
| -1.9 inches to -1.99 inches | Mild drought |
| -0.5 inches to -0.99 inches | Incipient dry spell |
| 0.49 inches to -0.49 inches | Near normal |
| 0.5 inches to 0.99 inches | Incipient wet spell |
| 1.0 inches to 1.99 inches | Slightly wet |
| 2.0 inches to 2.99 inches | Moderately wet |
| 3.0 inches to 3.99 inches | Very wet |
| +4.0 inches or more | Extremely wet |

Figure 2. Palmer Drought Severity Index

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Drought is measured in the Palmer Drought Severity Index according to the level of recorded precipitation against the average, or normal, amount of precipitation for a region. In the 100-year map for 1895 to 1995 below, Iroquois County and its multiple jurisdictions are within the 5% to 9.9% range for having a PDSI less than or equal to -3 (severe to extreme drought rating), meaning Iroquois County has been under a severe or extreme drought for 5-10 years between 1895 and 1995.

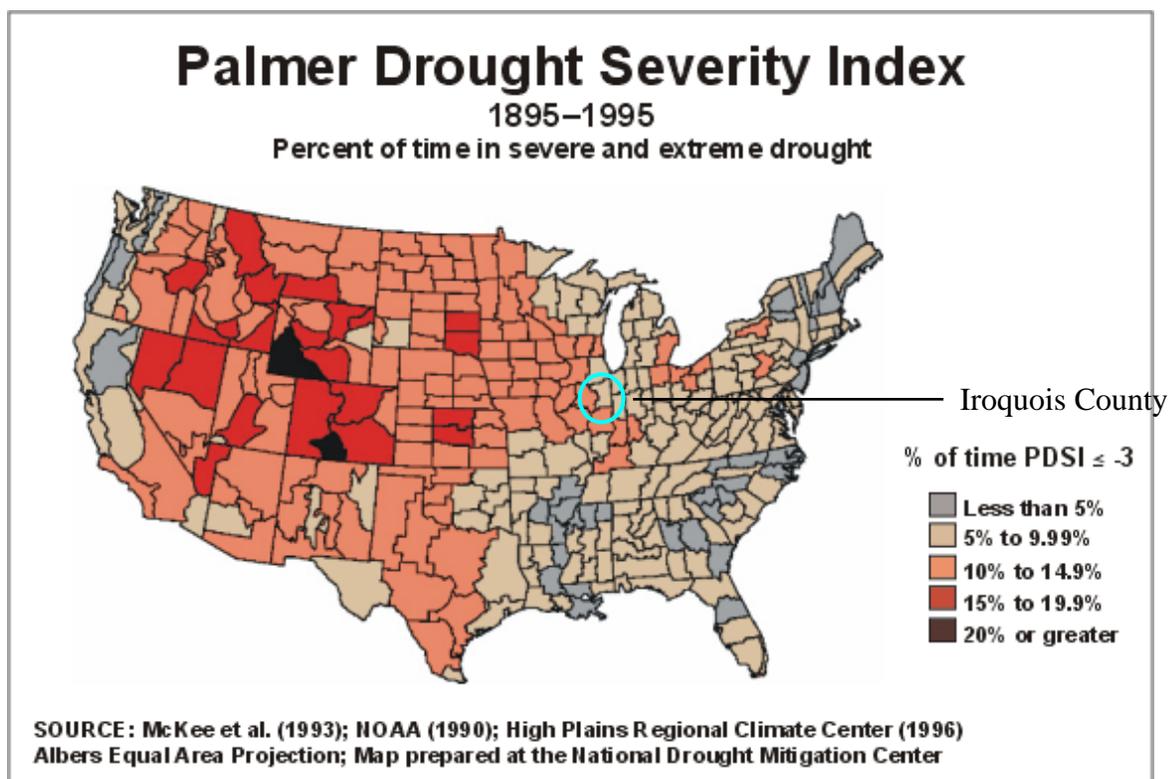


Figure 3. Palmer Drought Severity Index Map, 1895-1995

3.2.3.2 Drought Impacts

Crop failure is the most apparent effect of drought in that it has a direct impact on the economy and, in many cases, health (nutrition) of the population that is affected by it. Due to a lack of water and moisture in the soil, many crops will not produce normally or efficiently and, in many cases, may be lost entirely, causing loss of income to the farm and, potentially, loss of jobs for farm hands.

Water shortage is a very serious effect of drought in that the availability of potable water is severely decreased when drought conditions persist, especially if the water source is surface

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water. Springs, wells, streams, and reservoirs have been known to run dry due to the decrease in ground water, and, in extreme cases, navigable rivers have become unsafe for navigation as a result of drought.

Fire susceptibility is also increased with the lack of moisture associated with a drought. Dry conditions have been known to promote the occurrence of widespread wildfires and allow fires to spread more rapidly due to the dryness of the vegetation. In cases of extreme or prolonged drought, environmental degradation in the forms of erosion and ecological damage can be observed. As moisture in topsoil decreases and the ground becomes drier, the susceptibility to windblown erosion increases, as can be observed in the experience of the Great Plains states during the 1930s. Agricultural practices preceding a drought beginning in 1930 contributed to the loss of millions of cubic yards of soil lost through wind erosion, permanently impacting the agricultural and ecological viability of the region. As a drought is prolonged, root systems can be damaged and/or destroyed resulting in loss of habitat for some species and causing long-term loss of productivity. In addition, during extended drought situations the soil surrounding structures may subside, creating cracks in foundations and separation of foundations from above ground portions of the structure.

In Iroquois County, a secondary effect of a drought could be low river levels on the Iroquois River and Sugar Creek. Low surface water levels can also impact groundwater levels, thus impacting the sources of drinking water in the County. The majority of Iroquois County relies extensively on agricultural activities, which are heavily impacted by drought due to decreased crop yield. In addition, there is a risk of damage or cracking to structural foundations due to soil contraction.

3.2.3.3 Drought History

Information sources for this section include the National Weather Service, the National Climatic Data Center, and newspaper archives. See **Appendix H** for National Climatic Data Center events for Iroquois County.

The following are some historic drought events from Iroquois County:

“Three successive heat waves in the region, relieved by little rain, increased the effects felt from what has been described as the worst general drought in thirty years. A combination of heat and drought, which experienced corn growers say is the worst in at least seventeen years, is adding daily to the toll of crop damage in almost every section of the state. Corn crops in Illinois have been destroyed and farmers are reporting losses anywhere from 25 to 60 percent of their crop. Pastures have burned brown, which has lead to a loss of feed. Many corn crops have had burned tassels which causes problems in pollination of the corn crop. The losses in the area are very serious and each hot, dry day increases the damage amounts.” (Source: The Chicago Daily Tribune, July 30, 1930)

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A severe drought in 1988 also caused widespread crop loss throughout central Illinois. Farmers reported yields 50% lower than normal as a result of this drought. Very dry weather also prevailed in northern and central Illinois during May 1992. Records for the driest May were set in several communities in Illinois. (Source: www.crh.noaa.gov/ilx/trivia/maytriv.php)

Illinois experienced one of the driest spring, summer and fall periods on record from March 2005 to November 2005. This time frame of extreme drought lead to many problems felt throughout Northern Illinois. Much of Illinois was declared an agriculture disaster by early August, several water wells dried up, and outdoor water restrictions were put in place. Not only did agricultural productivity suffer, but the Illinois River levels were too low to handle barges to carry the crops that did survive. In total, Iroquois County received approximately 15 inches of rain for the nine month period, compared to an average of approximately 25 inches during that period.

3.2.3.4 Future Probability

The probability of future occurrences calculation was based on drought type and number of past occurrences. The probability is 3.4% chance per year and could affect any jurisdiction within the county. Future updates should include information on a jurisdictional basis when possible. The table below summarizes the number of droughts since 1950, as recorded by the NCDRC, along with the probability of a future drought based on the historic likelihood.

Table 6. Summary of Drought Risk Factors

| | |
|---|--|
| Period of occurrence | Generally during summer months or extended periods of no precipitation. |
| Number of Events to date 1950-2009 (NCDRC) | 2 |
| Annual Chance Probability | 3% |
| Location of Impacts | Droughts are not localized weather patterns, thus the entirety of Iroquois County is equally susceptible. |
| Potential Impact(s) | Activities that rely heavily on high water usage may be impacted significantly, including agriculture, tourism, wildlife protection, municipal water usage, commerce, recreation, and electric power generation. Droughts can lead to economic losses such as unemployment, decreased land values, and agronomic losses. Minimal risk of damage or cracking to structural foundations. |
| Injury or Death | None Reported |

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3.2.4 Earthquake

3.2.4.1 Description

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. The forces of plate tectonics have shaped the earth as the huge plates that form the earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual while at other times, the plates are locked together, unable to release the accumulating energy. When the accumulated energy grows strong enough, the plates break free releasing the stored energy and producing seismic waves, generating an earthquake.

Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Ground motion, the movement of the earth's surface during earthquakes or explosions, is the catalyst for most of the damage during an earthquake. Ground motion, produced by waves generated by a sudden slip of a fault or sudden pressure at the explosive source, travels through the earth and along its surface. Ground motions are amplified by soft soils overlying hard bedrock, referred to as ground motion amplification. Ground motion amplification can cause an excess amount of damage during an earthquake, even to sites very far from the epicenter.

Earthquakes can affect hundreds of thousands of square kilometers; cause damage to property measured in the tens of billions of dollars; result in loss of life and injury to hundreds of thousands of persons; and disrupt the social and economic functioning of the affected area. Ground shaking from earthquakes can collapse buildings and bridges, disrupt gas, electric, phone service, and sometimes trigger landslides, avalanches, flash floods, fires, and destructive ocean waves (tsunamis). During an earthquake, buildings with foundations resting on unconsolidated fill and other unstable soil, and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings. When an earthquake occurs in a populated area, it may cause deaths, injuries, and extensive property damage.

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault site, and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (mountain regions and along hillsides), and liquefaction, in which soil loses the ability to resist shear and flows much like quick sand. In the case of liquefaction, anything relying on the substrata for support can shift, tilt, rupture, or collapse.

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The Northridge, California earthquake of January 17, 1994 struck a modern urban environment generally designed to withstand the forces of earthquakes. Relatively few lives were lost due to the earthquake, but its economic cost has been estimated at \$20 billion. Exactly one year later, Kobe, Japan, a densely populated community less prepared for earthquakes than Northridge, was devastated by the most costly earthquake ever to occur. Property losses were projected at \$96 billion, and at least 5,378 people were killed. These two earthquakes tested building codes and construction practices, as well as emergency preparedness and response procedures.

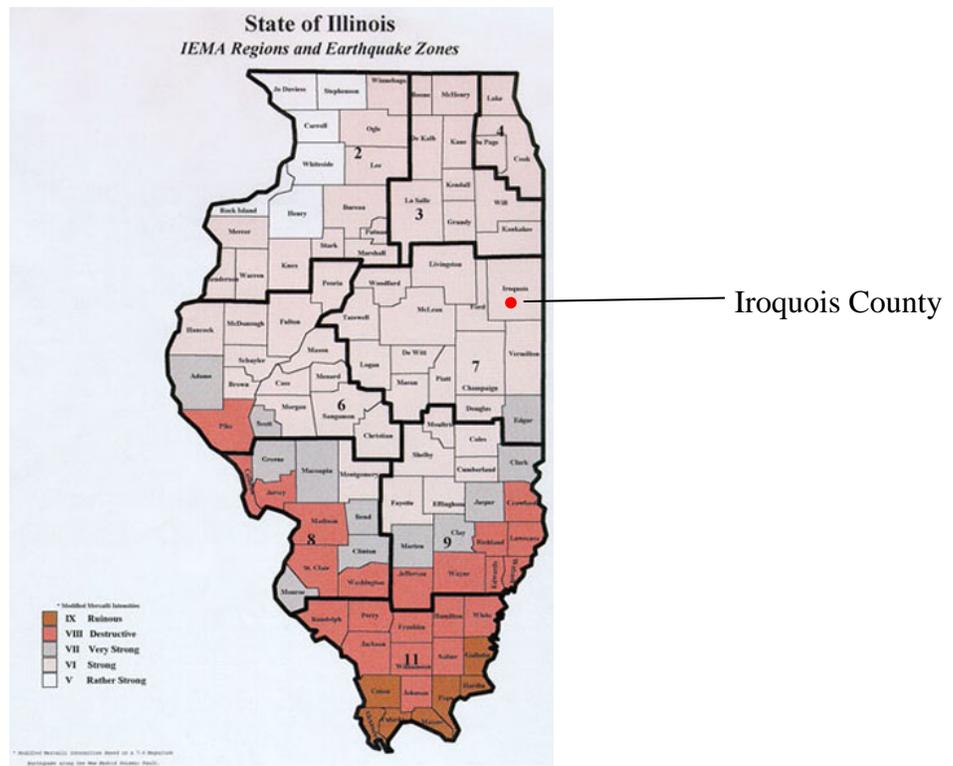


Figure 4. IEMA Earthquake Intensity Probability Map

The map above shows the relative probability of an area experiencing an earthquake of a relative intensity. California experiences the most frequent damaging earthquakes, but the largest earthquakes ever felt in the continental U.S. were along the New Madrid Fault in Missouri, where a three-month long series of quakes from 1811 to 1812 included three quakes larger than a magnitude 8 on the Richter Scale. These earthquakes were felt over the entire eastern U.S., with portions of Missouri, Tennessee, Kentucky, Indiana, Illinois, Ohio, Alabama, Arkansas, and Mississippi experiencing the strongest ground shaking. While Southern Illinois would be severely impacted by an earthquake stemming from the New

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Madrid Fault system, Iroquois County could receive extensive damages; however, there are no historical records associated with the 1811 earthquakes to determine the probable extent.

3.2.4.2 Earthquake Magnitude and Effects

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale that describes the energy release of an earthquake through a measure of shock wave amplitude. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale.

The Richter Magnitude Scale measures an earthquake's magnitude using an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude. The earthquake's magnitude is expressed in whole numbers and decimal fractions. Each whole number increase in magnitude represents a 10-fold increase in measured wave amplitude, or a release of 32 times more energy than the preceding whole number value.

The Modified Mercalli Scale measures the effect of an earthquake on the earth's surface. Composed of 12 increasing levels of intensity that range from unnoticeable shaking to catastrophic destruction, the scale is designated by Roman numerals. The intensity of each event corresponds with Roman numerals, with I corresponding to imperceptible (instrumental) events, IV corresponding to moderate (felt by people awake), to XII for catastrophic (total destruction). The lower values of the scale detail the manner in which people feel the earthquake, while the increasing values are based on observed structural damage. The intensity values are assigned after gathering responses to questionnaires administered to postmasters in affected areas in the aftermath of the earthquake.

A detailed description of the Modified Mercalli Scale of Earthquake Intensity and its correspondence to the Richter Scale is given in **Table 7**.

Table 7. Modified Mercalli Intensity Scale for Earthquakes

| Scale | Intensity | Description | Corresponding Richter Scale Magnitude |
|-------|-----------------|---|---------------------------------------|
| I | Instrumental | Detected only on seismographs | |
| II | Feeble | Some people feel it | <4.2 |
| III | Slight | Felt by people resting; like a truck rumbling by | |
| IV | Moderate | Felt by people walking | |
| V | Slightly Strong | Sleepers awake; church bells ring | <4.8 |
| VI | Strong | Trees sway; suspended objects swing, objects fall off shelves | <5.4 |
| VII | Very Strong | Mild Alarm; walls crack; plaster falls | <6.1 |

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Table 7. Modified Mercalli Intensity Scale for Earthquakes

| Scale | Intensity | Description | Corresponding Richter Scale Magnitude |
|--------------|------------------|---|--|
| VIII | Destructive | Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged | |
| IX | Ruinous | Some houses collapse; ground cracks; pipes break open | <6.9 |
| X | Disastrous | Ground cracks profusely; many buildings destroyed; liquefaction and landslides are widespread | <7.3 |
| XI | Very Disastrous | Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards | <8.1 |
| XII | Catastrophic | Total destruction; trees fall; ground rises and falls in waves | >8.1 |

Earthquakes strike suddenly and without warning and can occur at any time of the year, and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world. Estimates of losses from a future earthquake in the US approach \$200 billion. There are 45 states and territories in the US at moderate to very high risk from earthquakes.

The effects from earthquakes are caused by ground shaking, surface faulting, ground failure, and less commonly, tsunamis. Ground shaking is a term used to describe the vibration of the ground during an earthquake. As a generalization, the severity of ground shaking increases as magnitude increases, and decreases as distance from the source increases. Surface faulting is the differential movement of the two sides of a fracture at the earth's surface. Death and injuries from surface faulting are very unlikely, but casualties can occur indirectly through fault damage to structures.

Ground failure many times is induced by liquefaction which is a physical process, not a type of ground failure. Liquefaction occurs due to the shaking associated with an earthquake. As the seismic waves move through a soil, the soil temporarily loses strength and acts like a viscous fluid rather than solid soils. Lateral spreads involve the lateral movement of large blocks of soil as a result of liquefaction in a subsurface layer. Lateral spreads generally develop on gentle slopes, most commonly on those between 0.3 and 3 degrees. Horizontal movements on lateral spreads commonly are as much as 10 to 15 feet, but, where slopes are particularly favorable and the duration of ground shaking is long, lateral movement may

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be as much as 100 to 150 feet. Lateral spreads usually break up internally, forming numerous fissures and scarps.

Earthquakes can impact human life, health and public safety. Power outages, utility damage, infrastructure damage, structural damage, fire outbreaks, damaged or destroyed critical facilities, and hazardous material releases are all potential impacts following an earthquake event. Travel to any location can be extremely dangerous after an earthquake and should be avoided if possible due to road failures and fallen utility lines.

Aftershocks and secondary events often occur after the main quake and could trigger landslides, release of hazardous materials, and dam failure (which could lead to flooding). The greatest hazard potential for earthquakes exists in highly populated areas, because these areas tend to have a greater number of tall buildings that are more vulnerable to seismic impact. Buildings and infrastructure (roads, bridges, etc.) built during the 1920s to 1960s are also generally more susceptible to seismic movement than newer construction.

Geology also strongly impacts the severity and geographic extent of earthquake damages. Although earthquakes in the central or eastern U. S. occur less frequently, they affect much larger areas than earthquakes of similar magnitude in the western U.S. For example, the San Francisco earthquake of 1906 (magnitude 7.8) was felt 350 miles away in the middle of Nevada, whereas the New Madrid earthquake of December 1811 (magnitude 8.0) rang church bells in Boston, Massachusetts, 1,000 miles away. Differences in geology east and west of the Rocky Mountains cause this strong contrast.

3.2.4.3 Earthquake History

Illinois has had nearly 500 known earthquakes occur over the past two centuries, as shown in **Figure 5**. Of these, at least 31 have caused some kind of damage. No faults run through Iroquois County. However, the movement of earthquake vibrations through the bedrock of the Central U.S. can affect significantly larger areas than earthquakes in the Western U.S. Bedrock in the Eastern U.S. is older, intact, and strong, compared to the weaker and more broken bedrock of the West. Because of this difference, earthquakes are felt and cause damage over an area 15 to 20 times larger than California earthquakes with similar magnitudes.

Although there have been 250 earthquakes in Illinois, very few of them have caused damage or injuries. Approximately 80% of the recorded earthquakes occurred in southern Illinois, with the remainder spread evenly throughout the central and northern portions of the state.

One of the largest earthquakes to occur in Illinois was located in Northern Illinois on June 26, 1909. The exact location is unknown, but the most damage occurred in Aurora. This earthquake caused damages to an extensive area, including overturned stoves, fallen

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chimneys, broken gas lines, and a fire. Houses were also moved off of their foundations near Beloit, Wisconsin, approximately 150 miles northwest of Watseka.

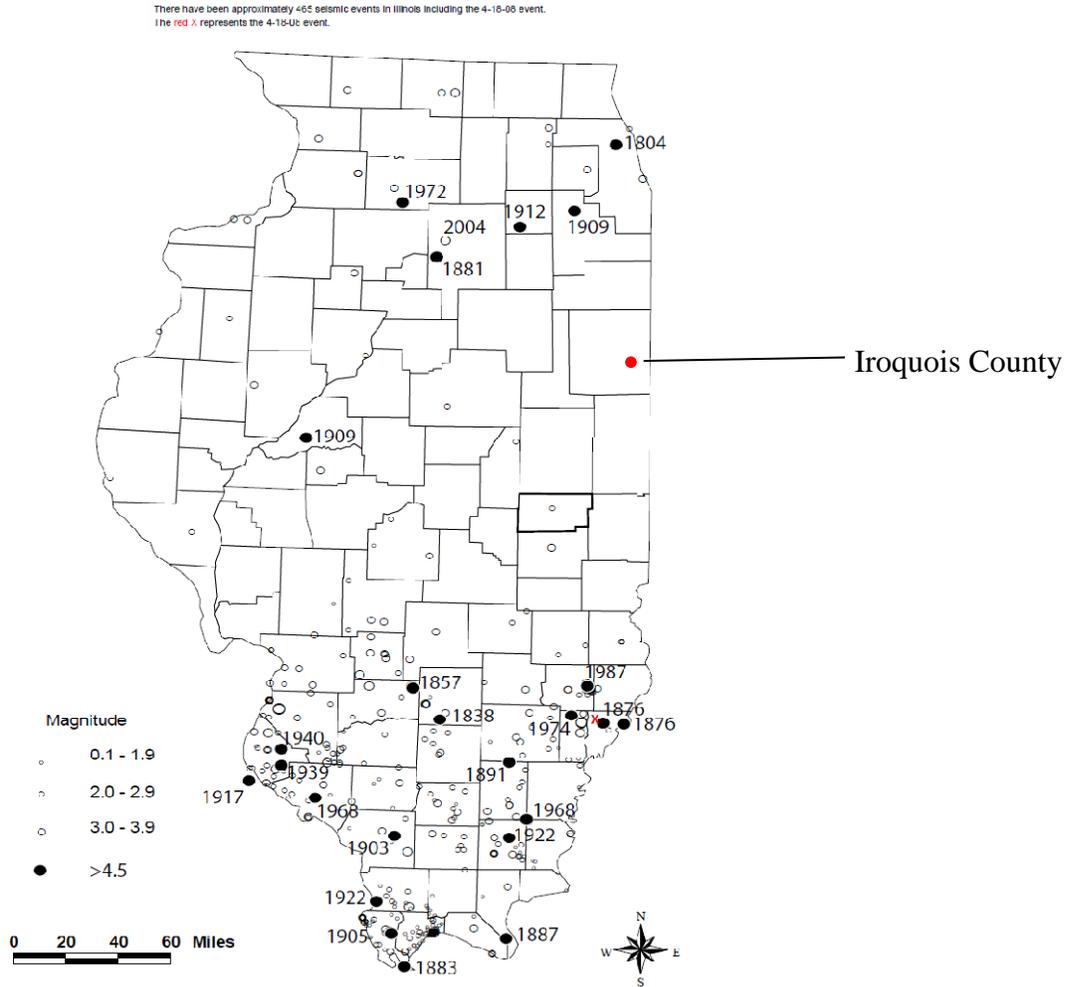


Figure 5. IEMA Earthquake Epicenter Map

A magnitude 4.0 earthquake centered in north-central Illinois northwest of Iroquois County, near the village of Amboy, woke many Chicago area residents when it struck late at night on September 15, 1972. Although felt over a very large area, the intensity VI area was much smaller than the 1909 earthquake. This earthquake caused cracks in chimneys, overturned tombstones, and broke plaster in Amboy (Lee County). The earthquake was felt in Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.

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Several smaller earthquakes have occurred in the region over the past century; however, most earthquakes cause minimal damage to the impacted area. There are no known occurrences of an earthquake in Iroquois County for 200 years and any earthquake impacting the County has caused only minor damages, such as cracked plaster or mortar. The results of the public survey indicated residents of the County were not concerned about earthquakes impacting the area.

3.2.4.4 Probable Future Occurrences

There is no jurisdictional dollar loss information associated with this hazard as losses are collated on a regional basis; therefore, impact cannot be determined for a particular jurisdiction within the county. Based on historical data, as collated by the National Climatic Data Center, there have been no earthquakes which have caused damages in Iroquois County since 1950. Consequently, using the method utilized for the other hazards in this plan, there is a 0% chance of an earthquake impacting Iroquois County. However, there is always a possibility of an earthquake stemming from the faults in either northern or southern Illinois causing damages to Iroquois County. Thus, rather than indicating a 0% probability for earthquakes, planning efforts should utilize a minimal probability.

Earthquakes do not have a specific area or size that is usually associated with them. Therefore, all areas located within Iroquois County have a probability of being affected by any seismic event. There have been 253 recorded earthquakes over the past two centuries, with approximately 30 occurring in Northern and Central Illinois.

Table 8. Summary of Earthquake Risk Factors

| | |
|---|---|
| Period of occurrence | Year round |
| Number of Events to date 1950-2009 (NCDC) | 0 |
| Annual Chance Probability | Minimal |
| Location of Impacts | The most damaging impacts from an earthquake would be associated with bridges, concrete or masonry structures, and towers. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can cause severe transportation problems and make travel extremely dangerous. May trigger landslides, releases of hazardous materials, and/or dam and levee failure and flooding. |
| Injury or Death | None Reported |

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3.2.5 Extreme Heat

3.2.5.1 Description

Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Our bodies dissipate heat by varying the rate and depth of blood circulation, by losing water through the skin and sweat glands, and as a last resort by panting, when blood is heated above 98.6°F. Sweating cools the body through evaporation. However, high relative humidity retards evaporation, robbing the body of its ability to cool itself.

Heat kills by taxing the human body beyond its abilities to cool itself. In a normal year, about 175 Americans succumb to the demands of summer heat. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the US by the effects of heat and solar radiation. In the disastrous heat wave of 1980, more than 1,250 people died.

How our bodies respond to heat is impacted by a combination of the air temperature and the relative humidity. Hydration and cooling needs are different for a 90°F day with 30% humidity versus a 90°F day with 90% humidity. The NWS has devised a measurement system known as the heat index (HI) to estimate the temperature a person is exposed to over a common temperature and humidity range. The NWS will initiate alert procedures when the HI is expected to exceed 105°- 110°F for at least two consecutive days. The chart below shows the HI that corresponds to the actual air temperature and relative humidity.

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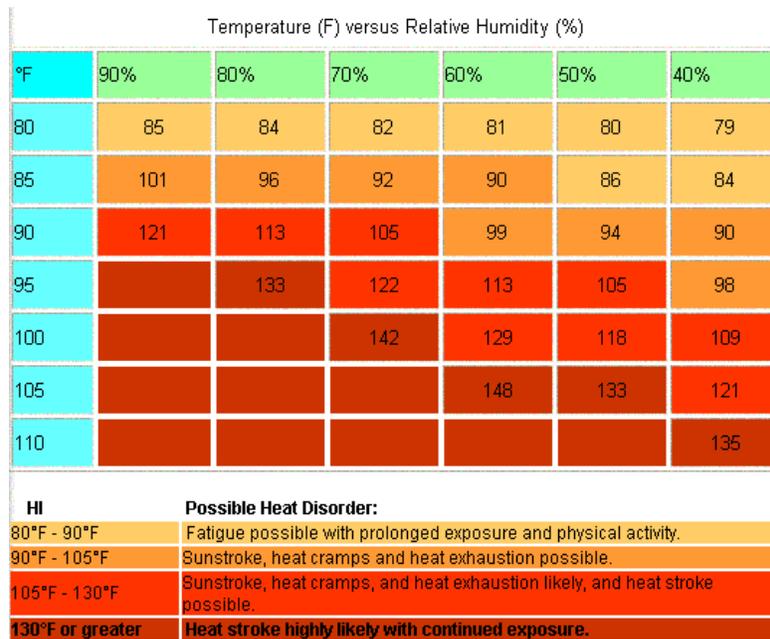


Figure 6. Temperature versus Relative Humidity Scale

*<http://www.crh.noaa.gov/pub/heat.htm>

* Due to the nature of the heat index calculation, the values in the table have an error +/- 1.3 F.

3.2.5.2 Effects of Extreme Heat

When heat gain exceeds the level the body can remove, body temperature begins to rise, and heat related illnesses and disorders might develop. Elderly persons, small children, chronic invalids, those on certain medications and persons with weight and alcohol problems are particularly susceptible to heat reactions, especially during heat waves in areas where a moderate climate usually prevails. Heat disorders generally have to do with a reduction or collapse of the body's ability to shed heat by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When heat gain exceeds the level the body can remove, or when the body cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise and heat-related illness may develop.

Ranging in severity, heat disorders share one common feature: the individual has overexposed or over-exercised for their age and physical condition in the existing thermal environment. Studies indicate that, other things being equal, the severity of heat disorders tend to increase with age. Heat cramps in a 17-year-old may be heat exhaustion in someone 40 years old and heat stroke in a person over 60.

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Sunburn is the lowest level of over-exposure. Though sunburn is not an effect of exposure to heat, but rather to solar radiation, sunburn can significantly retard the skin's ability to shed excess heat. Heat cramps are painful spasms usually in the muscles of the legs and abdomen, generally accompanied by heavy sweating. Heat exhaustion is the next level of impact caused by excessive heat. Heat exhaustion causes heavy sweating, muscular weakness, and a weak pulse. The skin is also cold, pale and clammy. Heat stroke (or sunstroke) is the worst possible symptom of excess heat, prior to death. The victim's body temperature is 106° F. or higher, with hot dry skin. Sweating has stopped by this point due to lack of body moisture. **Table 9** summarizes the temperature ranges where heat-related illnesses are common and the impacts likely to occur with each.

Table 9. Heat Index/Heat Disorders Impacts

| Heat Index | Heat Disorders Impacts |
|----------------|--|
| 130° or Higher | Heatstroke/sunstroke highly likely with continued exposure |
| 105° - 130° | Sunstroke, heat cramps or heat exhaustion likely, and heatstroke possible with prolonged exposure and/or physical activity |
| 90° - 105° | Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity |
| 80° - 90° | Fatigue possible with prolonged exposure and/or physical activity |

The most substantial heat-related impacts to the public include potential difficulties with electrical power and drinking water availability. Usage of utilities (electric and water) to combat the effects of the heat cause a strain on the system due to air conditioners, fans, and water usage, etc. In extreme cases, roads, bridges, and railroad tracks have been known to suffer damage from extreme heat conditions.

3.2.5.3 Extreme Heat History

An unusually intense heat wave affected northern and central Illinois from Wednesday, July 12 through Sunday, July 16, 1995. According to National Weather Service Records, the heat wave tied or broke several temperature records at the Rockford and Chicago recording stations. What set this heat wave apart from others was the extremely high humidity. Dew point temperatures peaked in the lower 80s on Wednesday the 12th and Thursday the 13th, and were generally in the middle and upper 70s through the rest of the hot spell. The combined effects of several days of high temperatures, high humidity, intense July sunshine and light winds took their toll. Five hundred and eighty-three people died as a result of the heat in the Chicago metropolitan area.

Commonwealth Edison, which provides much of northern Illinois and virtually all of the Chicago metropolitan area with power, had record demands for electricity on July 12-14,

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1995. Several roads buckled from the heat. Many of the people who died in the Chicago Metropolitan Area were elderly people living alone in homes or apartments with no air conditioning. Emergency officials found people in homes with room temperatures of 120 degrees or higher. The following are other examples of historic heat events.

October 2, 1922: Strong southerly winds brought very warm air from the Gulf region into Illinois. The heat wave across the region persisted through the 5th. (Source: <http://www.crh.noaa.gov/ilx/trivia/octtriv.php>)

July 30, 1930: Three successive heat waves relieved by little precipitation in the area have lead to an extremely bad situation for immature crops in the central states. With each hot, dry day the amount of damage to the crops increases in the area with corn being the most affected. Most farmers are reporting a loss of 25 to 60 percent of their crop due to heat and drought. (Source: Chicago Daily Tribune)

See **Appendix H** for NCDC events for Iroquois and surrounding areas for past extreme heat events.

Future Probability

The probability of future occurrences calculation was based on the number of past events over a period of years. There has been one historic event reported to the National Climatic Data Center (NCDC) for extreme heat in Iroquois County over the past 59 years, resulting in a 1.7% chance of an extreme heat event occurring during any year. Extreme heat events do not have a specific area or size that is usually associated with them. Therefore, all areas located within Iroquois County have an equal probability of being affected by an extreme heat event.

Table 10. Summary of Extreme Heat Risk Factors

| | |
|---|--|
| Period of occurrence | Summer |
| Number of Events to date 1950-2009 (NCDC) | 1 |
| Annual Chance Probability | 2% |
| Location of Impacts | Extreme heat is a widespread event. Thus all areas of Iroquois County are equally at risk. |
| Potential Impact(s) | Public health and safety, especially the elderly. Heavy use of water and electrical facilities due to air conditioners, fans, etc. |
| Injury or Death | 583 reported injuries throughout Northeastern Illinois. |

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3.2.6 Flood

Flooding is probably the most significant natural hazard in Illinois. Major flooding occurs within the state almost every year and it is not unusual for several floods to occur in a single year. Significant precipitation over the Iroquois River and Sugar Creek watersheds may cause flooding in Iroquois County due to the low grade of the stream profile. Iroquois River has an overall grade less than 2% over a significant length through the County, resulting in slow moving water which overtops the banks rapidly and persists for an extended period of time.

The majority of flood problems in the county occur in the areas near Watseka and Woodland, near the confluence of the Iroquois River and Sugar Creek. Both streams have significant flow and large watersheds upstream, with very low longitudinal slopes, contributing to slow flow through the stream. As a result, a large area of Watseka floods regularly. In addition, the flood impacts in Watseka and Woodland are significant due to urbanization. Urbanization increases the population at risk, as well as the value of the property in the flood hazard area, in addition to altering the natural hydrology and increasing runoff. Increased floods on the main channels lead to backwater effects on tributaries which increases the overall flood hazard. The following table lists rivers, streams, and creeks identified by the Planning Committee as sources of flooding in Iroquois County.

Table 11. Rivers, Creeks, and Streams in Iroquois County

| | | | |
|----------------|---------------|------------------|--------------|
| Iroquois River | Sugar Creek | Little Mud Creek | Coon Creek |
| Spring Creek | Prairie Creek | Langan Creek | Beaver Creek |
| Pike Creek | Mud Creek | | |

3.2.6.1 Description

A flood is a natural event for rivers and streams and is caused in a variety of ways. Floods can develop slowly or quickly, depending on several factors. Winter or spring rains, coupled with melting snows, can fill river basins too quickly. Torrential rains from decaying hurricanes or other tropical systems can also produce flooding. The excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto the banks and adjacent floodplains.

A flood, as defined by the National Flood Insurance Program (NFIP), is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area, or of two or more properties from:

- Overflow of inland or tidal waters;
- Unusual and rapid accumulation or runoff of surface waters from any source;

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- A mudflow;
- A collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood.

Floods are generally the result of excessive precipitation, and can be classified under two categories: flash floods, the product of heavy localized precipitation in a short time period over a given location; and general floods, caused by precipitation over a longer time period.

The severity of a flooding event is determined by a combination of stream and river basin topography and physiography, precipitation and weather patterns, recent soil moisture conditions and the degree of vegetative clearing. Flood currents also possess tremendous destructive power as lateral forces can demolish buildings and erosion can undermine bridge foundations and footings, leading to the collapse of structures.

Flash flooding events usually occur within minutes or hours of heavy amounts of rainfall, from a dam or levee failure, or from a sudden release of water held by an ice jam. General floods are usually longer-term events and may last for several days. The primary types of general flooding include riverine flooding, coastal flooding, and urban flooding.

Periodic flooding of lands adjacent to rivers, streams, and shorelines is a natural and inevitable occurrence that can be expected to take place based upon established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval. One way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1% chance of occurring in any given year, rather than being that level of flooding which only occurs once a century. In other words, it is possible to have two 100- year floods in a five year span or to not have a 25-year flood for 30 years.

Flooding is the most frequent and costly natural hazard in the U.S. More than \$4 billion is spent on flood damage in the U.S. each year, with property damage accounting for over \$1 billion of that sum. During the 20th century, floods were the number one natural disaster in the U.S. in terms of number of lives lost and property damage, and floods are the number one weather-related killer. Flooding has caused the deaths of more than 10,000 people since 1900.

The primary purpose of the NFIP is to provide flood insurance to properties located in floodplains, as delineated by Flood Insurance Rate Maps (FIRMs). The NFIP maintains records of the frequency and costs of insurance claims for each jurisdiction. The following table summarizes the number and value of policies and claims in Iroquois County and each of the incorporated jurisdictions.

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Table 12. NFIP Policies and Claims in Iroquois County

| Jurisdiction | Participating in NFIP | No. of Policies | Value of Policies | No. of Paid Losses | Value of Paid Losses | Existing Rep. Loss Structures | Repetitive Loss Payments |
|-------------------|-----------------------|-----------------|---------------------|--------------------|----------------------|-------------------------------|--------------------------|
| Total | - | 739 | \$54,675,300 | 349 | \$6,195,821 | 42 | \$1,652,225 |
| Ashkum | Y | 2 | \$139,700 | 0 | - | 0 | - |
| Beaverville | N | 0 | - | 0 | - | 0 | - |
| Buckley | N | 0 | - | 0 | - | 0 | - |
| Chebanse | Y | 0 | - | 0 | - | 0 | - |
| Cissna Park | Y | 36 | \$3,413,500 | 14 | \$93,559 | 1 | \$15,882 |
| Clifton | N | 0 | - | 0 | - | 0 | - |
| Crescent City | Y | 4 | \$194,000 | 1 | \$3,473 | 0 | - |
| Danforth | N | 0 | - | 0 | - | 0 | - |
| Donovan | N | 0 | - | 0 | - | 0 | - |
| Gilman | Y | 7 | \$430,000 | 1 | \$943 | 0 | - |
| Iroquois (Uninc.) | Y | 92 | \$11,341,700 | 43 | \$755,099 | 5 | \$190,299 |
| Iroquois | Y | 0 | - | 1 | \$422 | 0 | - |
| Loda | N | 0 | - | 0 | - | 0 | - |
| Martinton | N | 0 | - | 0 | - | 0 | - |
| Milford | Y | 3 | \$142,000 | 0 | - | 0 | - |
| Onarga | Y | 1 | \$105,000 | 0 | - | 0 | - |
| Papineau | N | 0 | - | 0 | - | 0 | - |
| Sheldon | N | 0 | - | 0 | - | 0 | - |
| Thawville | Y | 1 | \$60,500 | 0 | - | 0 | - |
| Watseka | Y | 552 | \$36,489,800 | 279 | \$5,273,401 | 35 | \$1,426,494 |
| Wellington | N | 0 | - | 0 | - | 0 | - |
| Woodland | Y | 41 | \$2,359,100 | 10 | \$68,924 | 1 | \$19,551 |

One of the primary concerns of the NFIP and FEMA are the repetitive loss structures and payments. In general, these structures are located in the floodplain, and account approximately 1% of the insurance policies nationwide and 11% in Iroquois County. However, the repetitive loss structures account for 30% of the annual NFIP claims nationally and 27% of the total claims within Iroquois County. Thus, minimizing, or ideally eliminating, repetitive loss structures is a primary goal of NFIP and FEMA.

The majority of the repetitive loss structures throughout the county are single family residences; however, there are three non-residential structures and one multi-family structure in Watseka which have repetitive losses.

3.2.6.1.1 Common Flood-Related Terms

100-Year Floodplain: The area that has a 1% chance, on average, of flooding in any given year. (Also known as the Base Flood.)

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500-Year Floodplain: The area that has a 0.2% chance, on average, of flooding in any given year.

Base Flood: Represents a compromise between minor floods and the greatest flood likely to occur in a given area. The elevation of water surface resulting from a flood that has a 1% chance of occurring in any given year. The base flood elevation is the basis for most flood related planning and mitigation activities.

Floodplain: The land area adjacent to a river, stream, lake, estuary, or other water body that is subject to flooding. This area, if left undisturbed, acts to store excess floodwater. The floodplain is made up of two sections: the floodway and the flood fringe.

Floodway: The NFIP floodway definition is “the channel of a river or other watercourse and adjacent land areas that must be reserved, in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.” The floodway carries the bulk of the floodwater downstream and is usually the area where water velocities and forces are the greatest. NFIP regulations require that the floodway be kept open and free from development or other structures that would obstruct or divert flood flows onto other properties.

Flood Fringe: The flood fringe refers to the outer portions of the floodplain, beginning at the edge of the floodway and continuing outward.

3.2.6.2 Flood Impacts

Flooding impacts human life, health, and public safety. Community-wide, the potential for risks is severe for: utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Flooding also can lead to economic losses such as unemployment, decreased land values, and agronomic losses. Flooding may cause damage to structures in the flooded area, resulting in especially significant damages if the buildings are commercial or institutional in nature, due to the necessity to close the business until damages are repaired. Residential damages also lead to larger impacts as the homeowners and/or residents are forced to leave their homes and, generally, are unable to work temporarily.

Flood waters may also destroy or damage important infrastructure, such as roads, bridges, electrical/communication networks, and sewer systems. Flooding of sanitary sewer systems poses considerable cleanup problems and health hazards, although structural damage to the system is rare. Considerable costs are incurred by delays in travel due to flooded roads. Flooded roadways may also impede emergency vehicles and emergency response teams

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along with other vehicles providing necessary goods and services. Schools are often closed due to lack of access.

Long term costs associated with frequent flooding may also be significant to communities. Frequent flooding decreases property values and abandoned properties may become a vector for disease and pest infestations. Frequent flooding may also persuade residents to leave the community and create an impedence for immigration to the community, causing a loss of tax revenue and an increased burden to remaining residents.

3.2.6.3 Flood History

The following table shows the flood-related Presidentially Declared Disasters for Iroquois County.

Table 13. Iroquois County Declarations - Floods

| Year | Disaster Type | Disaster Number | Funding Received |
|-------------|----------------------------|------------------------|-------------------------|
| 1994 | Severe Storms and Flooding | 1025 | \$30,399,236 |
| 2008 | Severe Storms and Flooding | 1747 | \$8,744,102 |
| | | TOTAL | \$39,143,338 |

Source: <http://maggie6.cadsr.udel.edu/presdec/mainframe.htm>

Illinois as a state has had 33 presidentially declared disasters from 1950 – 2008 and two of those have occurred in or affected Iroquois County and its jurisdictions. Some examples of events that have impacted the communities of Iroquois County are below.

In 1956, a flood impacted the County, causing water approximately 12” deep across State Route 49 in Cissna Park. Floodwaters blocked the highway for some time, interrupting traffic and causing difficulties for residents and businesses in the area.

On April 11-12, 1994, Cissna Park received approximately five inches of rain, causing Pigeon Creek to overflow its banks and causing record flood depths. Virtually the entire city was underwater, with depths exceeding three feet in some locations. A similar storm occurred in June of 1996, dumping six inches of rain in the Cissna Park and Milford area over a period of several hours. The rain caused flooding in Cissna Park, Milford, Woodland, and Watseka. The Cissna Park School was damaged by the flood waters and State Route 1 was closed through Milford for several hours.

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Figure 7. This Dairy Queen was flooded in April, 1994 in Cissna Park. This event caused total damages of approximately \$150,000.



Figure 8. The same event in Cissna Park closed this street with approximately four feet of water.

In January and February of 2008 and again in March 2009, Sugar Creek crested more than eight feet above flood stage, flooding homes and businesses and closing roadways around the intersection of Illinois Routes 1 and 24. Flooding in 2008 caused the total loss of the KFC/Taco Bell restaurant near the highway intersection and the long-term closure of several businesses in the area, including a nursing home facility. Approximately 500 residents were

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forced to evacuate their homes and 14 residences were removed due to flood damage. Another 41 homes were elevated above the base flood elevation, with another 20 properties abandoned by their owners. Homeowners in Watseka received approximately \$7.5 million in grants and loans to assist in recovery from the 2008 floods, while total damages in Milford were approximately \$80,000.



Figure 9. Flooding in Milford in January 2008 impacted this home.



Figures 10-11. The picture on the left shows the bridge in normal conditions. The picture on the right shows the bridge during the January 2008 flood event.

See **Appendix H** for a listing of Iroquois County area flooding events recorded by the National Climatic Data Center.

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3.2.6.4 Future Probability

For each river, engineers assign statistical probabilities for different sized floods. This is done to rate the size of the flood compared to other floods that have or may occur.

The National Flood Insurance Program (NFIP) and the Illinois Department of Natural Resources (IDNR) use this same baseline flooding probability. This is the base flood, also known as the 100-year flood. FEMA describes the 100-year flood as “The flood elevation that has a one percent chance of being equaled or exceeded each year. Thus the 100- year flood could occur more than once in a relatively short period of time. The 100-year flood is used by the NFIP as the standard for floodplain management and to determine the need for flood insurance.” (Source: www.fema.gov/plan/prevent/fhm/fq_fld03.shtm)

Another level of risk that is used is the 500-year flood, or 0.2% chance of occurring in any given year. FEMA describes the 500 year flood as deeper than a 100-year flood and covering a greater area, but less likely to occur than a 100-year event. Given that this level of flooding is less likely to occur, it is the standard used for critical facility protection.

Table 14. Flood Probability

| Time Period | Flood Size | | | |
|-------------|------------|---------|---------|----------|
| | 10-year | 25-year | 50-year | 100-year |
| 1 Year | 10% | 4% | 2% | 1% |
| 10 Years | 65% | 34% | 18% | 10% |
| 20 Years | 88% | 56% | 33% | 18% |
| 30 Years | 96% | 71% | 45% | 26% |
| 50 Years | 99% | 87% | 64% | 39% |

Notice that during the course of a 30-year mortgage, a homeowner in a 100-year floodplain has a 26% chance of experiencing a 100-year flood and a 96% chance of experiencing a 10-year flooding event. While a 10-year flood is not as extensive as other floods, the odds of experiencing a 10-year event are nearly guaranteed during a typical 30-year mortgage.

Table 15. Summary of Flood Risk Factors

| | |
|---|--|
| Period of occurrence | Anytime, but primarily during spring/summer rains. |
| Number of Events to date 1950–2009 (NCDC) | 23 |
| Annual Chance Probability Ratio | 39% |
| Location of Impacts | Proximity to streams or rivers is the largest indicator of the probability of an area being impacted by flooding. In |

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Table 15. Summary of Flood Risk Factors

| | |
|----------------------------|--|
| | some urban areas undersized storm sewers may also lead to localized flooding. |
| Potential Impact(s) | Potential for loss of life. Floodwaters are a public safety issue due to contaminants and pollutants. Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can lead to economic losses such as unemployment, decreased land values, and agronomic losses. |
| Injury or Death | One reported injury. |

3.2.7 Severe Storm (Thunderstorm, Lightning and Hail)

The Midwest and Great Plains regions of the U.S. average between 40 and 60 days of thunderstorms per year. These two regions are prone to some of the most severe thunderstorms on Earth. Iroquois County is affected by severe thunderstorms more than any other hazard. These severe storms are often associated with heavy rain, lightning, hail, and high winds. Iroquois County typically experiences between 30 and 50 thunderstorm days per year. These storms are not bound to one particular geographic path; therefore all jurisdictions located within the County are equally vulnerable to this hazard. **Appendix H** provides the National Climatic Data Center information for Iroquois County and its jurisdictions for hail, lightning, and high wind events associated with severe storms.

In the United States, there are an estimated 25 million cloud-to-ground lightning strikes each year. The average deaths attributed to lightning strikes exceed those attributed to tornadoes. Lightning usually claims only one or two victims at a time and does not cause mass destruction of property, and because of this, it is underrated as a risk. Local data and National Climatic Data Center website archives document three lightning events for Iroquois County. The following is a description of a sample lightning event that caused injury or property damage.

The effects of large hailstorms can include minimal to severe property and crop damage and destruction. Most thunderstorms do not produce hail, and those that do normally produce only small hailstones less than one-half inch in diameter. Local data and National Climatic Data Center website archives document 45 hail events from 1950 to 2008. The hail stones ranged from 0.75 inches to 3.00 inches in diameter.

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3.2.7.1 Descriptions

A thunderstorm is formed from a combination of moisture, rapidly rising warm air and a force capable of lifting air such as a warm and cold front, a sea breeze or a mountain. All thunderstorms contain lightning and may occur singly, in clusters or in lines. Thus, it is possible for several thunderstorms to affect one location in the course of a few hours. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended period time. The NWS considers a thunderstorm as severe if it develops $\frac{3}{4}$ inch hail or 50-knot (58 mph) winds. In the last 25 years, severe storms have been involved in over 300 federal disasters.

Radar observers use the intensity of the radar echo to distinguish between rain showers and thunderstorms. Lightning detection networks routinely track cloud-to-ground flashes, and therefore thunderstorms.

Thunderstorms occur when clouds develop sufficient upward motion and are cold enough to provide the ingredients (ice and super cooled water) to generate and separate electrical charges within the cloud. The cumulonimbus cloud is the perfect lightning and thunder factory, earning its nickname, "thunderhead". All thunderstorms are dangerous and capable of threatening life and property in localized areas.

While thunderstorms and lightning can be found throughout the U.S., they are most likely to occur in the central and southern states. The NWS estimates more than 100,000 thunderstorms occur in the U. S. each year. Thunderstorms are also capable of producing tornadoes and heavy rain that can lead to flash flooding. These hazards are addressed separately in the plan.

Thunderstorms affect relatively small areas as the average storm is 15 miles in diameter and lasts an average of 30 minutes. Nearly 1,800 thunderstorms are occurring at any moment around the world, however, of the estimated 100,000 thunderstorms that occur each year in the U. S. only about 10 percent are classified as severe.

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a "bolt". This flash of light occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit in a split second. The rapid heating and cooling of air near the lightning causes thunder.

Lightning is the second most frequent killer in the U.S. Each year, lightning is responsible for an average of 93 deaths (more than tornadoes), 300 injuries, and several hundred million dollars in damage to property.

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Hail is precipitation in the form of spherical or irregular pellets of ice larger than 5 millimeters (0.2 inches) in diameter (American Heritage Dictionary). Hail is a somewhat frequent occurrence associated with severe thunderstorms. Hailstones grow as ice pellets are lifted by updrafts, and collect super-cooled water droplets. As the pellets grow, hailstones become heavier and begin to fall. Sometimes, hailstones are caught by successively stronger updrafts and are re-circulated through the cloud growing larger each time the cycle is repeated. Eventually, the updrafts can no longer support the weight of the hailstones. As hailstones fall to the ground, they produce a hail-streak (i.e. area where hail falls) that may be more than a mile wide and a few miles long.

Falling hail may reach speeds of 70-100 mph, explaining why it is capable of producing such extensive damage. Hailstorms occur more frequently during the late spring and early summer months. Most thunderstorms do not produce hail, and storms that do normally produce only small hailstones less than one-half inch in diameter. Hail is commonly described by its size and **Table 16** provides the conversion between the descriptions to the approximate size, in inches.

Table 16. Hail Conversion Chart

| Diameter of Hailstones (inches) | Description |
|--|--------------------|
| 0.50 | Marble |
| 0.70 | Dime |
| 0.75 | Penny |
| 0.88 | Nickel |
| 1.00 | Quarter |
| 1.25 | Half Dollar |
| 1.50 | Walnut |
| 1.75 | Golf Ball |
| 2.00 | Hen Egg |
| 2.50 | Tennis Ball |
| 2.75 | Baseball |
| 3.00 | Tea Cup |
| 4.00 | Grapefruit |
| 4.50 | Softball |

3.2.7.2 Effects of Severe Storms

Severe storms may cause significant damage to the areas impacted through the combined impacts of wind, rain, lightning, and hail. Lightning is capable of damaging structures and infrastructure (especially the electrical grid) and starting fires. Lightning causes half the

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wildfires in the Western U.S. In addition, lightning regularly injures and kills people across the country. Approximately 25% of victims die and 70% of survivors suffer long-term effects.

Hail causes nearly \$1 billion in damage to property and crops annually. Hail causes property damage by perforating holes in roofs and shingles, breaking windows, and denting house siding. Hail can also damage automobiles by denting car panels and breaking windows. Hail rarely causes any deaths; however, approximately 20-25 people are injured by hailstones each year.

3.2.7.3 Severe Storm History

Iroquois County has received two (2) presidential declarations for severe storm, as shown in the following table.

Table 17. Iroquois County Declarations – Severe Storms

| Year | Disaster Type | Disaster Number | Funding Received |
|-------------|----------------------------|------------------------|-------------------------|
| 1994 | Severe Storms and Flooding | 1025 | \$30,399,236 |
| 2008 | Severe Storms and Flooding | 1747 | \$8,744,102 |
| | | TOTAL | \$39,143,338 |

Source: <http://maggie6.cadsr.udel.edu/presdec/mainframe.htm>

In addition, each of the communities in Iroquois County has experienced many severe storms, which have not warranted a disaster declaration. In Chebanse, in July 1989, a storm occurred that damaged trees, buildings, and vehicles, requiring many hours from city employees and from volunteer help to recover from the damage. Another storm caused a substantial amount of damage to the Village of Cissna Park in May 2008 when wind knocked trees and limbs down, which knocked down power lines. The Village was without power for approximately 12 hours.

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Figure 12. A storm with powerful winds caused approximately \$15,000 in damages, May of 2008.

3.2.7.4 Future Probability

The probability of future occurrences calculation was based on the number of past events over a period of years. There have been 91 thunderstorm/high wind events, three (3) lightning events, and 34 hail events reported to the National Climatic Data Center (NCDC) in Iroquois County over the past 59 years. The calculated probability for each of these events is summarized in the table below, with an overall probability of 217%. In other words, in any given year, Iroquois County will be impacted by two (2) severe storms.

Table 18. Summary of Severe Storms Risk Factor

| | |
|---|---|
| Period of occurrence | Spring, Summer and Fall |
| Number of Events to-date 1950-2009 (NCDC) | Total: 128 Lightning: 3 Hail: 34 Wind: 91 |
| Annual Chance Probability | Total: 217% Lightning: 5% Hail: 58% Wind: 154% |

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Table 18. Summary of Severe Storms Risk Factor

| | |
|----------------------------|--|
| Location of Impacts | All areas are equally at-risk to severe storm impacts; however, areas of impact are generally localized, rather than widespread. |
| Potential Impacts | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Impacts human life, health, and public safety. |
| Injury or Death | Six deaths and fourteen injuries reported. |

3.2.8 Severe Winter Storms

3.2.8.1 Description

A winter storm can range from moderate snow over a few hours to blizzard conditions with blinding wind-driven snow, sleet and/or ice and extreme cold that lasts several days. A severe winter storm is defined as an event that drops four or more inches of snow during a 12-hour period or six or more inches during a 24-hour span. Severe winter storms are fueled by strong temperature gradients and an active upper-level cold jet stream. Some winter storms may be large enough to affect several states while others may affect only a single community. Most winter storms are accompanied by low temperatures and blowing snow, which can severely reduce visibility.

Snow and ice are threats to most of the U. S. around the winter season, which begins December 21 and ends March 21. During the early and late months of the winter season, snow becomes warmer, giving it a greater tendency to melt on contact or stick to the surface. The beginning and end of the winter season also brings a greater chance of freezing rain and sleet.

Every state in the continental U.S. and Alaska has been impacted by severe winter storms. The super-storm of March 1993 caused over \$2 billion in property damage in twenty states and Washington D.C. At least 79 deaths and 600 injuries were attributed to the storm.

The most important winter storms are blizzards and ice storms due to their capacity to cause interruptions in service and damage infrastructure. Blizzards are by far the most dangerous of all winter storms. They are characterized by temperatures below twenty degrees Fahrenheit and winds of at least 35 miles per hour. In addition to the temperatures and winds, a blizzard must have a sufficient amount of falling or blowing snow. The snow must reduce visibility to one-quarter mile or less for at least three hours. With high winds and

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heavy snow, these storms can punish residents throughout much of the U.S. during the winter months each year.

Ice storms occur when freezing rain falls from clouds and freezes immediately on impact. Ice storms occur when there is cold air at the surface and warm, moist air at higher altitudes. As the warm air advances and is lifted over the cold air, precipitation begins falling as rain at high altitudes then cools as it passes through the cold air mass below, and, in turn, freezes upon contact with chilled surfaces at temperatures of 32° F or below. In extreme cases, ice may accumulate several inches thick, though just a thin coating is often enough to do severe damage.

3.2.8.2 Possible Effects

Freezing rain can result in extensive damage to utility lines and buildings while making any type of travel extremely dangerous. The results are sometimes devastating: entire states can be almost entirely without electricity and communication for several weeks. Winter storms can paralyze a community by shutting down normal day-to-day operations. Heavy snow can also lead to the collapse of weak roofs or unstable structures. Storm effects can cause hazardous conditions and hidden problems, including the following:

Power outages result when snow and ice accumulate on trees causing branches and trunks to break and fall onto power lines. Blackouts vary in size from one street to an entire city. Loss of electric power means loss of heat for some residents, which poses a significant threat to human life, particularly the elderly.

Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and prolonged exposure to cold resulting in frostbite.

Flooding may occur after precipitation has accumulated and then temperatures rise once again, which melts snow and ice. In turn, as more snow and ice accumulate the threat of flooding increases.

Snow and ice accumulation on roadways can cause severe transportation problems in the form of extremely hazardous roadway conditions.

Illinois is typically continental, has the polar jet stream located near or over it during the winter months, bringing low pressure systems and therefore precipitation into the region, and averages 140 days at or below 32°F and 36 inches of snow in the north portion of the state. A combination of any of these conditions can lead to a severe winter storm.

3.2.8.3 Severe Winter Storm History

Areas where such weather is unusual are typically affected more severely than regions that routinely deal with such weather events. No region can fully prepare for a severe winter storm so some degree of disruption is inevitable, regardless of how much experience a

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community or state may have. Iroquois County has had one Emergency Declaration in the past, resulting from a severe ice storm.

Table 19. Iroquois County Emergency Declarations – Severe Winter Storms

| Year | Disaster Type | Disaster Number | Funding Received |
|------|------------------|-----------------|-------------------------|
| 1990 | Severe Ice Storm | 860 | \$9,297,012 |
| | | TOTAL | \$121,982,298.18 |

Source: FEMA- Illinois States Disaster History, <http://www.peripresdecusa.org/mainframe.htm>

The following are descriptions of severe winter storms in Iroquois County and shows the level of typical historical intensity.

- a. March 6, 1964: A severe winter storm virtually paralyzed sections of northern and central Illinois on March 6. The storm packed gale force winds and heavy snow and rain around the area, which lead to all schools and many businesses being closed.
- b. January 1967: A blizzard began in the early morning hours of January 26 with strong winds and rapid snowfall across the region. At the peak of the storm, snow was accumulating at a rate of two inches per hour. By the end of the first storm, 23 inches of snow had fallen in Chicago. However, two additional storms impacted the area over the following week, leaving an additional 12.5 inches of snow in the Chicago area. The snow did not completely melt until mid-March. There were approximately 60 deaths as a result of this blizzard, predominately from heart attacks suffered from shoveling snow.
- c. January 1978: A blizzard covered north-central Illinois in several feet of snow, forcing the Department of Transportation to close all roads and highways for some time. The snow drifts in the area often exceeded eight feet in depth and the wind chills reached a low of -45°F. Remarkably, there were no reported deaths or injuries caused by the storm.
- d. January 10, 1982: Bitterly cold weather was found across Illinois. Of the 109 weather reporting stations in the state, 48 of those reported lows of 20 degrees below zero or colder.
- e. February 6, 1982: Bitter cold was found across northern and central Illinois. Low temperatures of 20 degrees below zero or colder were noted from near Peoria east to Watseka.
- f. March, 1991: A significant ice storm left the Village of Chebanse without electricity for five days. The storm caused substantial damage to the trees and power lines in the area.

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See **Appendix H** for past severe winter storm events recorded by the National Climatic Data Center for Iroquois and its jurisdictions.



Figure 13. The blizzard of 1978 caused drifts of several feet in height and shut down many communities across the Midwest for several days.

3.2.8.4 Future Probability

The probability of future occurrences calculation was based on the number of past events over a period of years. Twenty-two of the 226 winter storm events that occurred in Illinois between January 1950 and May 2009 affected Iroquois County. With 22 occurrences over the past 59 years, the likelihood of a severe winter storm hitting somewhere in the county is 37% in any given year.

Table 20. Severe Winter Storms Risk Factors

| | |
|---|--|
| Period of occurrence | Winter |
| Number of Events to-date 1950-2009 (NCDC) | Total: 22 Extreme Cold/Wind Chill: 4 Heavy Snow: 6 Winter Storm: 12 |
| Annual Chance Probability | Total: 37% Extreme Cold/Wind Chill: 7% Heavy Snow: 10% Winter Storm: 20% |
| Location of Impact | The entire county is susceptible to winter storms. Severe winter storms generally impact a large area, effectively isolating |

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Table 20. Severe Winter Storms Risk Factors

| | |
|----------------------------|---|
| | communities from assistance from nearby communities. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. May cause severe transportation problems and make travel extremely dangerous. Power outages, which results in loss of electrical power and potentially loss of heat, and human life. Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and prolonged exposure to cold resulting in frostbite. |
| Injury or Death | Eleven reported deaths. |

3.2.9 Tornadoes

3.2.9.1 Description

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are spawned by a thunderstorm (or sometimes as a result of a hurricane) and produced when a cold air mass flows over a layer of warm air, forcing the warm air to rise rapidly through the cold air.

The damage from a tornado is a result of the high wind velocity and wind-blown debris with paths that can be in excess of one mile wide and fifty miles long. Tornado season is generally March through August, although tornadoes can occur at any time of year. They tend to occur in the afternoons and evenings, with over 80% of all tornadoes striking between noon and midnight.

Most tornadoes are just a few dozen yards wide and touch down only briefly, but highly destructive tornadoes may carve out a path over a mile wide and several miles long. The destruction caused by tornadoes may range from light to catastrophic depending on the intensity, size, and duration of the storm. Effects of tornadoes may include crop and property damage, power outages, environmental degradation, injury, and death. Tornadoes are known to blow off roofs, move cars and tractor-trailers, and demolish structures.

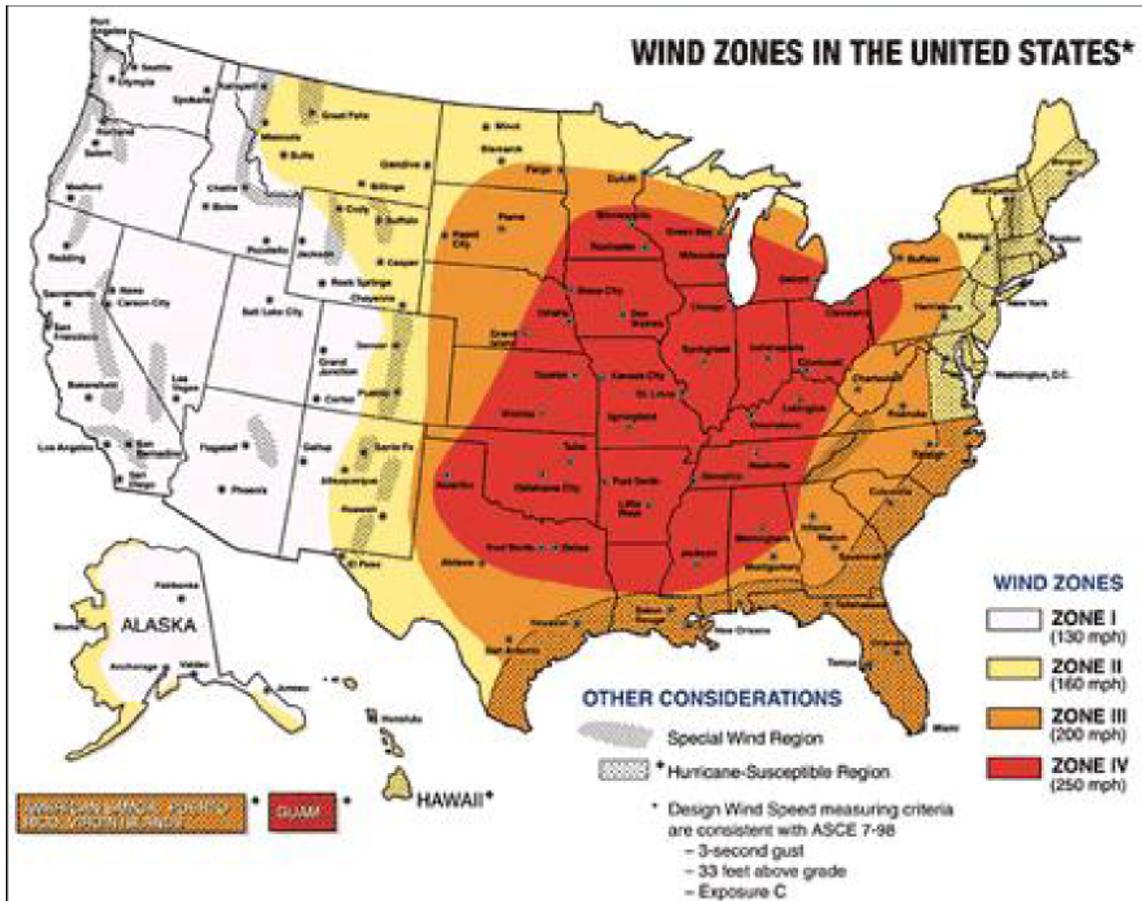
Typically, tornadoes are localized in impact and cause the greatest damages to structures of light construction, such as residential homes. A tornado can move as fast as 125 mph with internal winds speeds exceeding 300 mph.

The maps below illustrate the predictability of tornadic activity according to NOAA. Iroquois County and its jurisdictions are located within the wind Zone IV where wind speeds can

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reach up to 250 mph. Zone IV also signifies that there is a high probability for tornadic activity in the County.



Source: http://www.fema.gov/plan/prevent/saferoom/tsfs02_wind_zones.shtm

Figure 14. Wind Zones in the United States

Over the past 25 years, more than 100 federal disaster declarations included damage associated with tornadoes. On April 3, 1974, 148 tornadoes in 13 states killed 315 people and is the largest recorded tornadic event in history.

3.2.9.2 Tornado Impacts

The magnitude of a tornado is categorized by the damage pattern (i.e. path) and wind velocity, according to the Fujita-Pearson Tornado Measurement Scale. This scale is the only widely used rating method with the aim of validating classification by relating the degree of damage to the intensity of the wind. **Table 21** summarizes the Fujita scale with descriptions of typical damage caused by each storm magnitude.

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Table 21. Fujita Scale for Tornadoes

| Type | MPH | General Description |
|------|-----------|---|
| F1 | 73 - 112 | Moderate Damage - Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads. |
| F2 | 113 - 157 | Considerable Damage - Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light object missiles generated; cars lifted off ground. |
| F3 | 158 - 206 | Severe Damage - Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown. |
| F4 | 207 - 260 | Devastating Damage - Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated. |
| F5 | 261 - 318 | Incredible Damage - Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur. |

Source: FEMA State and Local Mitigation Planning How-To-Guide: Understanding Your Risks

Due to the destructive nature of tornadoes and wind, these events impact human life, health, and public safety. Community-wide impacts include: utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. Tornadoes can also cause severe transportation problems and make travel extremely dangerous. Although tornadoes strike at random, making all buildings vulnerable, three types of structures are more likely to suffer damage: mobile homes, homes on crawlspaces (more susceptible to lift), and buildings with large spans, such as airplane hangers, gymnasiums and factories.

3.2.9.3 Tornado History

Tornadoes track through Illinois at a rate of just over 29 per year. Illinois is in the heart of "Tornado Alley", an area of the U.S. known for its violent outbreaks of severe storms. All areas of the state are at risk of being struck by a tornado. The map below shows the recorded tornado touchdowns across the state between 1950 and 1998. In Iroquois County, there were 25 tornadoes during that time period. Despite that, there have been no Presidential Declarations involving tornadoes in Iroquois County. See **Appendix H** for past tornado events recorded by the National Climatic Data Center for Iroquois County and its jurisdictions.

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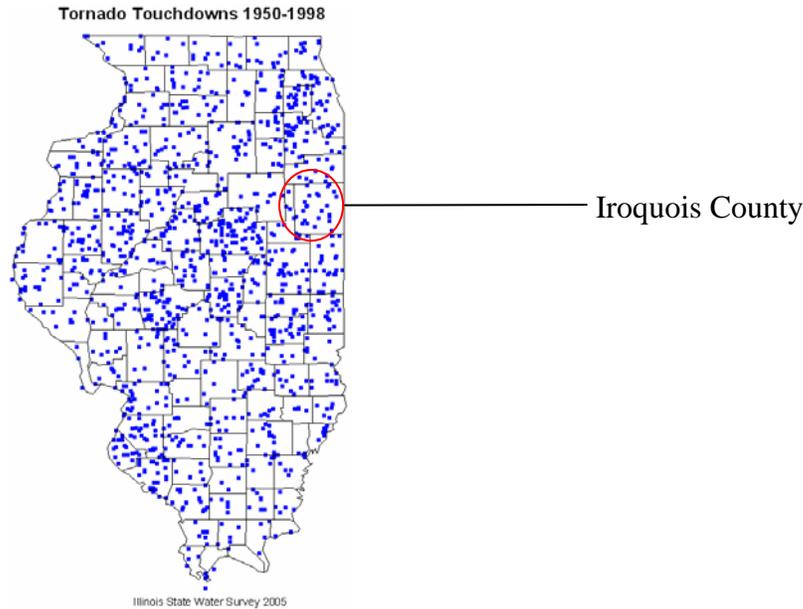


Figure 15. Illinois Tornado Touchdowns, 1950-1998

3.2.9.4 Future Probability

Tornadoes are extremely common throughout Illinois and have occurred in every month of the year. Conversely, the occurrence of a tornado is highly unpredictable as it is impossible to forecast the exact time and location that it will touch down and the path that it will take.

Most tornadoes occur between March and July, with the month of May normally experiencing the greatest number of tornadoes. The strongest tornadoes, which usually result in the highest number of deaths and greatest destruction of property, occur between April and June. Most deaths occur in April, which is considered the beginning of the tornado season.

Thirty-six of the 2,160 tornado events that occurred in Illinois between January 1950 and May 2009 impacted Iroquois County, which equates to a 61% probability of some part of the county being struck by a tornado in any given year. Tornadoes, like other climatological hazards, are not bound to a particular path or location; therefore all jurisdictions within Iroquois County have the same probability of being struck by a tornadic event. The table below summarizes the probability of a tornado striking the county with each of the magnitudes on the Fujita scale.

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Table 22. Tornado Probability

| Type | Number of Occurrences Since 1950 | Annual Chance Probability Ratio |
|-------|----------------------------------|---------------------------------|
| F0 | 15 | 25% |
| F1 | 10 | 17% |
| F2 | 9 | 15% |
| F3 | 2 | 3% |
| F4 | 0 | NA* |
| F5 | 0 | NA* |
| Total | 36 | 61% |

*Note: Probability for tornadoes with a magnitude of F4-F5 cannot be calculated due to the lack of historical occurrences during the past 59 years. There have been tornadoes of these magnitudes in the past and they could occur again in the future.

Table 23. Summary of Tornado Risk Factors

| | |
|---|---|
| Period of occurrence | Year-round, primarily during March through August |
| Number of Events to-date 1950-2007 (NCDC) | 36 |
| Annual Chance Probability | 61% |
| Location of Impacts | All areas are equally at-risk to tornadoes; however, damages are generally localized rather than widespread. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. Impacts human life, health, and public safety. |
| Injury or death | Eleven injuries reported. |

3.2.10 Railroad Corridor Incidents

3.2.10.1 Description

Railroad related accidents occur daily in the United States. There are over 12,000 railroad crossings on grade with roads in Illinois, which are common locations for incidents involving vehicles and pedestrians. In addition, rail cars may derail anywhere along the line for a variety of reasons. The Chicago area is one of the busiest railway corridors in the country, accounting for approximately 1,200 trains passing through the region daily. The figure below shows the relative quantity of freight that originates in Illinois, which is shipped across North America. As the circle indicates, two major north-south corridors go through Iroquois County, accounting for a substantial amount of traffic through the County. CSX Hazardous Materials and Federal Railroad Administration personnel indicate all items in the emergency responder

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Emergency Response Guidebook are hauled through Iroquois County. Materials include flammable and explosive liquids and gases, corrosive liquids and gases, carcinogenic compounds, pesticides, etc. Community emergency planners and officials may contact the following company representatives for more details regarding the cargo that is commonly transported through their jurisdictions.

Union Pacific Railroad
Michael W. Payette
Asst. V.P. Gov't Affairs - Central Region
101 N. Wacker, Ste. 1910
Chicago, IL 60606
(312) 777-2000
mikewpayette@up.com

Toledo, Peoria & Western
Paul E. Crawford
General Manager
1990 E. Washington
East Peoria, IL 61611
(309) 698-2600 Ext. 226
ramedia@burdetteketchum.com

CSX Transportation
Thomas E. Livingston
Resident Vice President Public Affairs
1700 W. 167th Street
Calumet City, IL 60409
(708) 832-2169
tom_livingston@csx.com

Kankakee, Beaverville & Southern
Robert Garner, President
P.O. Box 119
Iroquois, IL 60945
(815) 486-7260
kbsroffice@kbsrailroad.com

Canadian National
James Kvedaras
Sr. Manager - U.S. Public and Gov't Affairs
17641 S. Ashland Avenue
Homewood, IL 60430-1345
(708) 332-3508
jim.kvedaras@cn.ca

While railroad incidents are less common than automobile accidents, they have the possibility of being more severe due to the mass of the railcars and the volume of the contents. In Illinois in 2006, there were 1,068 incidents involving trains that caused more than \$6,600 in damages or at least one injury or fatality.

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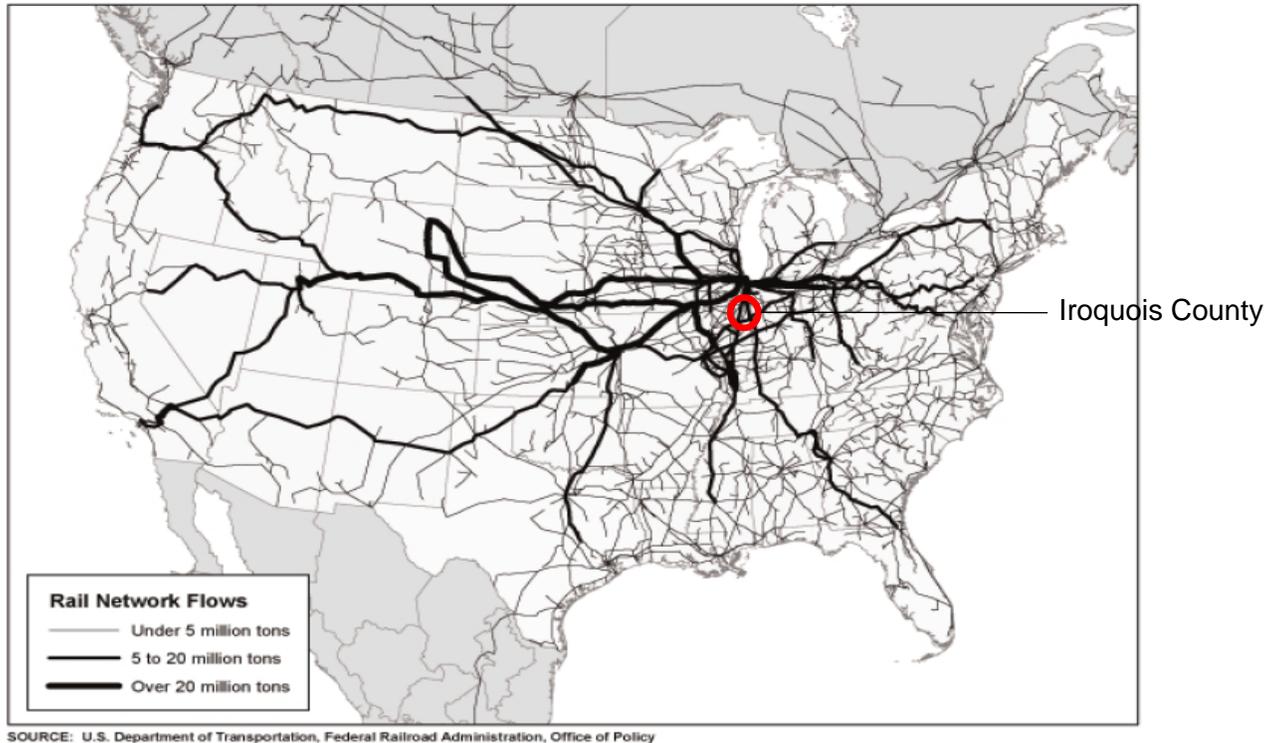


Figure 16. Rail Network Flows

The most dangerous areas for the general public are the on-grade rail crossings over roads. Slightly under half of all fatalities occur at road crossings, whereas only approximately 15% of incidents occur at road crossings. Of the 12,000 on-grade rail crossings in Illinois, approximately 240, or 2% are in Iroquois County. The majority of the crossings in Iroquois County are small, lightly traveled roads with little protection, accounting for a greater risk than on more traveled roads, with crossing gates and flashing lights to warn motorists of an oncoming train.

The table below summarizes the types of people suffering injuries and fatalities through rail accidents in 2000. Approximately 70% of the injuries associated with rail traffic occur to railroad employees or contractors on duty at the time of the incident.

There are approximately 1.7 million car loads of hazardous material transported on the nation's rail network. In 2007, 99.996% of the total hazardous cargo shipments were delivered to their intended destination without incident. From 1995-2000, there was an average of 55 accidents annually involving hazardous materials on railroads across the nation. The number and type of hazardous cargo shipments through Iroquois County were unavailable for this Plan. However, future updates to the Plan may include a summary of the

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types of cargo which are typically shipped through the County and hazard mitigation strategies for those specific substances.

Table 24. Types of People Injured in Illinois Train Accidents

| Type of person | Fatalities | Percent of total | Injuries | Percent of total |
|---------------------------------------|------------|------------------|----------|------------------|
| Worker on duty | 4 | 5.8% | 762 | 68.7% |
| Employee not on duty | 0 | 0.0% | 34 | 3.1% |
| Passenger on train | 1 | 1.4% | 138 | 12.4% |
| Nontrespasser | 27 | 39.1% | 129 | 11.6% |
| Trespasser | 37 | 53.6% | 40 | 3.6% |
| Nontrespasser (off railroad property) | 0 | 0.0% | 6 | 0.5% |

Source: US Department of Transportation, Bureau of Transportation Statistics, Illinois Transportation Profile, 2000.

There are several railroads operating in Iroquois County including: Union Pacific Railroad; CSX Transportation; Canadian National; Toliedo, Peoria and Western; and Kankakee, Beaverville, and Southern.

3.2.10.2 Incident Impacts

The majority of the rail lines in the County go through the villages and cities rather than around them. As a consequence of the proximity of the rail lines to the homes and businesses in the area, a spill or incident could have major impacts on the health and safety of the residents and economic vitality of the community. Also, an incident involving a hazardous substance could severely strain the resources of the emergency response units, increasing the response time to affected citizens. Many of the villages and communities only have one railroad crossing. Should the railroad crossing be blocked by an accident, emergency response would be severely hampered and the well-being and safety of the community citizens would be put at risk.

3.2.10.3 Incident History

A train derailed in Crescent City on June 21, 1970, causing an explosion of propane gas tanks. Nine railroad cars carrying liquefied propane gas derailed, causing an explosion and fire which burned for more than two days. As a result of the explosion and the derailment, most of the downtown area and many businesses and homes were destroyed, causing a total of two million dollars in damages and injuring more than sixty emergency responders and civilians.

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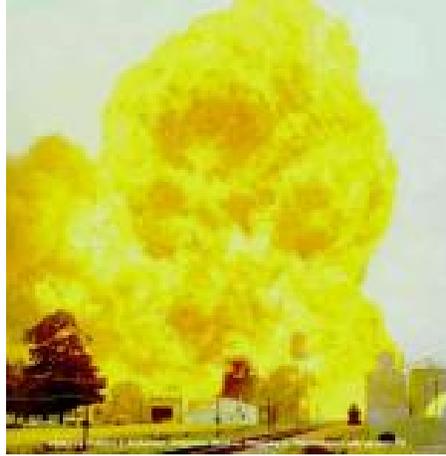


Figure 17. A picture of one of the LPG tankers exploding in Crescent City.

Source: <http://www3.gendisasters.com/illinois/6526/crescent-city-il-exploding-tank-cars-june-1970>

There was another incident in Ashkum on February 11, 1971. At that time, 23 Illinois Central rail cars derailed in the Village, including two cars carrying hazardous material chemicals. Several of the train cars burned in the incident, causing an evacuation of the entire population of the Village.

3.2.10.4 Probability of Future Events

There is no reliable local database of historical events in the local area. Nationally, railroad accidents are relatively rare, based on the number of miles traveled. Consequently, an accurate estimate of the probability of a future event in Iroquois County is difficult to determine. As with earthquakes, a minimal probability of occurrence should be assumed for railroad related accidents.

Table 25. Railroad Corridor Incident Risk Factors

| | |
|--|--|
| Period of occurrence | Anytime |
| Number of Events to-date 1950-2009 (Local Records) | 2 |
| Annual Chance Probability | 3% |
| Location of Impact | Impacts are confined to areas in proximity to railroads. As distance from the rail line increases, the probability and severity of impacts decrease. |
| Potential Impact(s) | Impacts may be minor, such as temporary road blocks or crop loss or severe, including significant property damage and loss of life. |
| Injury or Death | More than 60 injuries reported. |

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3.3 DISASTER DECLARATIONS

The following table represents the past declared disasters as provided by FEMA for the Iroquois County area. There are no presidential declared disasters for Iroquois County, as recorded by FEMA. However, there are three records of major disaster declarations, as shown below.

Table 26. Major Disaster Declarations

| Event Type | Date | Declaration Number | Damages |
|----------------------------|-------------|---------------------------|----------------|
| Severe Ice Storm | March, 1990 | 860 | \$9,297,012 |
| Severe Storms and Flooding | April, 1994 | 1025 | \$30,399,236 |
| Severe Storms and Flooding | March, 2008 | 1747 | \$8,744,102 |

3.4 ASSESSING VULNERABILITY

This section documents the results and methodologies of the Iroquois County natural hazard vulnerability assessment.

3.4.1 Assessing Vulnerability – Overview

The methods used to assess vulnerability of natural hazards throughout Iroquois County incorporated the following:

- Number of past events and future probabilities for each hazard,
- Number and locations of at-risk structures, structure types and estimated values,
- Number and locations of critical facilities at risk to each hazard, and
- Number of population at risk to each hazard.

Severity rankings were categorized using a similar convention to the Illinois' Natural Hazard Mitigation Plan. The tables below provide an overview of the vulnerability rankings and individual assessment results for each jurisdiction.

Each of the communities were ranked as low, medium, or high for each of the categories, which were translated into a numerical score of 1, 2, or 3, respectively. The scores were then totaled to develop an overall score for each community for each hazard, as shown in the table below.

Methodology and individual results were derived by geographically weighting risk as a function of event probability and event consequences.

The methodology utilized for this plan was based on the State of Illinois Natural Hazard Mitigation Plan methodology; however, there are some minor differences. The Iroquois Plan

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utilizes the same categories as the State plan, but does not weight the categories differently. In addition, the State plan combines two different measures of population to balance the differences between counties across the state (i.e. Cook County/Chicago and Iroquois County).

The population criteria utilized by the state was the actual population and the predicted growth rate over the next 10 years. Because localized growth data is not available for the jurisdictions of Iroquois County, the growth factor was omitted from the vulnerability assessment. Also, because the populations of the jurisdictions in Iroquois County are roughly similar, the actual population was omitted from the vulnerability assessment.

Another difference between the State and County plans is the probability of future event levels. The State plan uses 20%, 20-100%, and greater than 100% annual chance probability for the low, medium, and high scoring, respectively. However, the Iroquois County plan uses 10%, 10-50%, and greater than 50% annual probability for the scoring of the future probability. Also, due to the use of national data for property values in the Iroquois County plan, the threshold for high property damages was lowered from \$15 million to \$5 million. The final difference between the State and County hazard mitigation plans is the use of critical facilities. The State plan did not include the number of critical facilities impacted by an event in the vulnerability assessment. However, the Iroquois County planning team decided this could be an important factor in the severity and duration of the impact from a natural hazard event. Consequently, the actual number of critical facilities potentially impacted in a hazard event was included in the Iroquois County vulnerability assessment.

3.4.2 Multi-Jurisdictional Risk Assessment Methodology

The Planning Team worked together to develop a risk assessment model that analyzed event probability, infrastructure at-risk, and population exposure.

Hazard rankings were based upon numerical ranking concepts similar to the State's Hazard Mitigation criteria, modified to accommodate local interests and more detailed information.

Overall rankings were generated by totaling individual scores assessed for each community's risk to a given hazard. Specifically, hazard risk was estimated as a function of the number of past hazard events, estimated structure vulnerability, the number of critical facilities at risk, and the population exposed to the hazard.

Individual variable scores were then totaled for each community's vulnerability and categorized according to the table key below and as shown below in **Table 27**.

| |
|-------------------|
| <5 = Low |
| 5 to 6 = Guarded |
| 7 to 8 = Elevated |
| 9 to 10 = High |
| 11 to 12 = Severe |

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Table 27. Iroquois County Vulnerability Ranking

| Community | Population | Hazard Risk Ranking | | | | | | | |
|--------------------------|------------|---------------------|------------|--------------|-------|---------------|----------------------|---------|-------------|
| | | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | RR Incident |
| Village of Ashkum | 724 | 7 | 7 | 7 | 6 | 8 | 10 | 11 | 8 |
| Village of Beaverville | 391 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Buckley | 595 | 7 | 7 | 7 | 4 | 11 | 10 | 11 | 8 |
| Village of Chebanse | 689* | 8 | 8 | 8 | 4 | 12 | 11 | 12 | 9 |
| Village of Cissna Park | 812 | 7 | 7 | 7 | 6 | 11 | 10 | 11 | 9 |
| Village of Clifton | 1,317 | 9 | 8 | 9 | 4 | 12 | 11 | 12 | 10 |
| Village of Crescent City | 631 | 7 | 7 | 7 | 6 | 11 | 10 | 11 | 8 |
| Village of Danforth | 587 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Donovan | 351 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 6 |
| City of Gilman | 1,793 | 8 | 7 | 8 | 7 | 11 | 10 | 11 | 9 |
| Village of Iroquois | 207 | 6 | 6 | 6 | 5 | 10 | 8 | 9 | 6 |
| Iroquois County (Uninc.) | 12,387 | 10 | 8 | 10 | 10 | 12 | 11 | 12 | 9 |
| Village of Loda | 419 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Martinton | 375 | 6 | 6 | 6 | 4 | 10 | 8 | 10 | 7 |
| Village of Milford | 1,369 | 7 | 7 | 7 | 5 | 11 | 10 | 11 | 9 |
| Village of Onarga | 1,438 | 7 | 7 | 7 | 4 | 11 | 10 | 11 | 8 |
| Village of Papineau | 196 | 6 | 6 | 6 | 4 | 10 | 8 | 9 | 6 |
| Village of Sheldon | 1,232 | 7 | 7 | 7 | 5 | 11 | 10 | 11 | 9 |
| Village of Thawville | 258 | 6 | 6 | 6 | 4 | 10 | 8 | 9 | 6 |
| City of Watseka | 5,670 | 9 | 8 | 9 | 11 | 12 | 11 | 12 | 10 |
| Village of Wellington | 263 | 8 | 8 | 8 | 4 | 12 | 10 | 11 | 8 |
| Village of Woodland | 319 | 6 | 6 | 6 | 10 | 10 | 8 | 9 | 7 |

* Only a portion of Chebanse is within Iroquois County. This population is only for that part of the Village in Iroquois County.

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The following subsections detail individual results generated for each risk assessment variable.

3.4.2.1 Assessing Vulnerability - Historical Occurrences and Future Probability

Much like the Illinois Natural Hazard Mitigation Plan, the Iroquois County risk assessment model also accounted for past occurrences of natural hazards. The following scores were given to each community based upon frequency of events recorded for their jurisdiction.

| |
|--|
| 0 to 6 events in last 57 years = 1 |
| 7 to 27 events in last 57 years = 2 |
| 28 or more events in last 57 years = 3 |

The number of historical occurrences of each event was based upon research performed at the local, state and federal levels. Ultimately, the Planning Team agreed to primarily use quantities and results recorded by NOAA's National Climatic Data Center (NCDC). The future probability of an event occurring is linked to the frequency of previous occurrences. The NCDC dataset spans almost 60 years of weather events, thus providing a suitable historic occurrence interval to estimate future probability. If there were fewer than seven recorded incidents in the NCDC dataset, the probability of future occurrences was deemed to be low (less than 10%). If there were between 7 and 27 events recorded by the NCDC, probability of future events was considered to be medium (11-50%). If more than 27 events of any given type were recorded in the dataset, the probability was high for future recurrence (greater than 50%).

Table 28. Iroquois County Event Probability Weighting

| Jurisdiction | Hazard Risk Ranking | | | | | | | RR Incident |
|--------------------------|---------------------|------------|--------------|-------|---------------|----------------------|---------|-------------|
| | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | |
| Village of Ashkum | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Beaverville* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Buckley* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Chebanse* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Cissna Park | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Clifton* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Crescent City | Low | Low | Low | Low | High | Medium | High | Low |

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Table 28. Iroquois County Event Probability Weighting

| Jurisdiction | Hazard Risk Ranking | | | | | | | |
|--------------------------|---------------------|------------|--------------|--------|---------------|----------------------|---------|-------------|
| | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | RR Incident |
| Village of Danforth* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Donovan* | Low | Low | Low | Low | High | Medium | High | Low |
| City of Gilman | Low | Low | Low | Low | High | Medium | High | Low |
| Iroquois County (Uninc.) | Low | Low | Low | Medium | High | Medium | High | Low |
| Village of Iroquois | Low | Low | Low | Medium | High | Medium | High | Low |
| Village of Loda* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Martinton* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Milford | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Onarga* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Papineau* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Sheldon* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Thawville* | Low | Low | Low | Low | High | Medium | High | Low |
| City of Watseka | Low | Low | Low | High | High | Medium | High | Low |
| Village of Wellington* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Woodland | Low | Low | Low | High | High | Medium | High | Low |

* These communities have no FEMA mapped flood hazards within their jurisdictions; however, the risks due to flooding still exist.

Note: Most historical event research produced countywide results that were not specific to individual jurisdictions.

3.4.2.2 Assessing Vulnerability – Incorporating Structural Risk

Structural risk is a function of the consequences of an event in relationship to the probability of the event occurring. Combined, both consequences and probability operate together to convey risk.

For purposes of the Plan, the probability of a future event occurring in any given year is calculated based upon the number of past events divided by the number of years of record.

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For example, there have been 36 tornadoes throughout the county over the last 54 years, yielding an annual occurrence ratio of 0.67 (probability). The results of the hazard profiling effort tell us that those 36 events have produced a combined \$9,036,000 of documented damages, or roughly \$251,000 per event (consequences). Another way of understanding this information is that there is a 67% probability of a tornado occurring in Iroquois County during any given calendar year that will cause damages worth approximately \$251,000.

This pattern was used to estimate risk for all hazards except for flooding. Each of the other hazards is equally likely to impact the entire county, without regard to geographical location. However, flooding is much more likely to impact a property adjacent to a stream than a property several hundred feet away from a waterway. Flood risk is estimated by FEMA and established by FEMA's standard Flood Insurance Rate Map (FIRM) product. The boundaries of flooding equate to the annual probability of flooding. Thus the 20% annual probability flood is also known as the 5 year flood and the 1% annual probability flood is more commonly known as the 100 year flood event.

The assessment was based on the 1% annual probability event and calculated at the Census block level. For the analysis, the value of each block was assumed to be geographically homogenous. In other words, if 43% of the block was within the floodplain boundary, it was assumed that 43% of the total value is exposed to flooding.

The property valuation records in Iroquois County are not yet digitized, making a large scale analysis of property values, such as that necessary for this plan, unfeasible. Consequently, the values were based on those established by FEMA for use in the HAZUS program. HAZUS values are based on national averages and thus may not accurately reflect the values of property in Iroquois County.

The following is an explanation of the vulnerability assessment calculation utilized in the Plan.

Structure Vulnerability (Risk) expressed as a formula:

$$\text{Risk} = P \times C \times D$$

Where:

P = Annual Chance Probability Ratio (past events / years of record)

C = Average Annual Damages (\$) from HAZUS model.

D = Geographic Weighted Distribution of Event by Jurisdictional Area

Note: Geographic Distribution of flood plains is predetermined based upon FEMA's mapped flood areas and not subjected to an additional area distribution factor.

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The following scores are given to each community based upon estimated annual weighted damages of infrastructure vulnerability for each jurisdiction.

| |
|---|
| Less than \$1 million exposed = 1 |
| Between \$1 and \$5 million exposed = 2 |
| More than \$5 million exposed = 3 |

Table 29. Jurisdictional Fiscal Vulnerability by Hazard

| Jurisdiction | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|------------|--------------|--------|---------------|---------------------|---------|-------------|
| Village of Ashkum | Low | Low | Low | Medium | High | High | High | Medium |
| Village of Beaverville* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Buckley* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Chebanse* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Cissna Park | Low | Low | Low | Low | High | High | High | High |
| Village of Clifton* | Medium | Low | Medium | Low | High | High | High | High |
| Village of Crescent City | Low | Low | Low | Medium | High | High | High | Medium |
| Village of Danforth* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Donovan* | Low | Low | Low | Low | High | High | High | Low |
| City of Gilman | Medium | Low | Medium | High | High | High | High | High |
| Iroquois County (Uninc.) | High | Low | High | High | High | High | High | High |
| Village of Iroquois | Low | Low | Low | Low | High | Medium | Medium | Low |
| Village of Loda* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Martinton* | Low | Low | Low | Low | High | Medium | High | Medium |
| Village of Milford | Low | Low | Low | Low | High | High | High | High |
| Village of Onarga* | Low | Low | Low | Low | High | High | High | Medium |
| Village of Papineau* | Low | Low | Low | Low | High | Medium | Medium | Low |
| Village of Sheldon* | Low | Low | Low | Low | High | High | High | High |
| Village of | Low | Low | Low | Low | High | Medium | Medium | Low |

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Table 29. Jurisdictional Fiscal Vulnerability by Hazard

| Jurisdiction | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storm | Tornado | RR Incident |
|------------------------|---------|------------|--------------|--------|---------------|---------------------|---------|-------------|
| Thawville* | | | | | | | | |
| City of Watseka | Medium | Low | Medium | Medium | High | High | High | High |
| Village of Wellington* | Low | Low | Low | Low | High | Medium | Medium | Low |
| Village of Woodland | Low | Low | Low | High | High | Medium | Medium | Medium |

* These communities have no FEMA mapped flood hazards within their jurisdictions; however, the risks due to flooding still exist.

3.4.2.3 Assessing Vulnerability – Incorporating Critical Facilities

Critical facilities provide vital services and resources to residents and hazard response personnel. Should critical facilities fail during a natural hazard, short and long term impacts can be devastating to a community’s safety and economy.

For each hazard profiled, the following scores are applied toward each community based upon the number of critical facilities exposed within their jurisdiction.

| |
|---|
| 0 to 3 critical facilities exposed = 1 |
| 4 to 6 critical facilities exposed = 2 |
| 7 or more critical facilities exposed = 3 |

The number of critical facilities exposed to each hazard was based upon research performed at the local, state and federal levels. Ultimately, the Planning Team agreed to supplement FEMA’s HAZUS critical facilities with additional locally identified critical infrastructure. The HAZUS dataset includes information about several different types of facilities, including public safety, such as police and fire stations, hospitals, and schools; utility infrastructure, including electrical substations, communication facilities, and water and wastewater treatment plants; and infrastructure which, if damaged, cause a high potential for damages, such as bridges and dams. Additional facilities identified by the local jurisdictions include public works department buildings, where trucks and equipment are stored, churches and community centers, which could serve as shelters, nursing homes, and businesses storing or utilizing large amounts of chemicals or fuels.

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Table 30. Critical Infrastructure Exposure by Hazard and Jurisdiction

| Jurisdiction | Drought | Earthquake | Extreme Heat | Flood | Severe Storm | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|------------|--------------|--------|--------------|---------------------|---------|-------------|
| Village of Ashkum | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Beaverville* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Buckley* | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Chebanse* | High | High | High | Low | High | High | High | High |
| Village of Cissna Park | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Clifton* | High | High | High | Low | High | High | High | High |
| Village of Crescent City | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Danforth* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Donovan* | Low | Low | Low | Low | Low | Low | Low | Low |
| City of Gilman | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Iroquois County (Uninc.) | High | High | High | Medium | High | High | High | High |
| Village of Iroquois | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Loda* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Martinton* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Milford | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Onarga* | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Papineau* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Sheldon* | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Thawville* | Low | Low | Low | Low | Low | Low | Low | Low |
| City of Watseka | High | High | High | High | High | High | High | High |
| Village of Wellington* | High | High | High | Low | High | High | High | High |
| Village of Woodland | Low | Low | Low | Low | Low | Low | Low | Low |

* These communities have no FEMA mapped flood hazards within their jurisdictions; however, the risks due to flooding still exist.

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3.4.2.4 Assessing Vulnerability – Incorporating Population

One of the primary purposes of a Hazard Mitigation Plan is to protect life from the adverse impacts of natural hazards. Understanding where population densities are located and the demographics at risk to specific hazards is critical to mitigating risk. For example, individuals over the age of 65 are significantly more susceptible to extreme heat or cold.

For each hazard profiled, the following scores are given to each community based upon the percentage of each community's population exposed within their jurisdiction.

| |
|---|
| 0% to 10% of community population exposed = 1 |
| 10% to 25% of community population exposed = 2 |
| 25% or more of community population exposed = 3 |

The population exposed to each hazard was based upon the 2000 U.S. Census data. Most hazards, aside from flooding, are subject to strike anywhere within the county, thus placing the entire county population at risk. Extreme heat, however, is unique in that the elderly, the sick, and the young are more vulnerable to this hazard than the population at-large. As a result, Census data was further profiled to estimate associated population percentages at risk to this hazard. Populations exposed to flooding were estimated based upon the 2000 U.S. Census values for Census blocks containing a portion of the 1% annual probability flood hazard. The area of the floodplain was calculated and the population was assumed to be spread homogeneously throughout the block. Thus, for a block with 100 residents and 28% of its total area within the 1% annual flood probability hazard, 28 people were assumed to be at risk. The population was summed for each jurisdiction and the percentage of the potentially impacted population was calculated and tabulated. To minimize the potential for distortion of the data caused by use of the actual population, the percentage of the total population was used for all jurisdictions.

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Table 31. Population Exposure by Hazard and Jurisdiction

| Jurisdiction | Drought | Earth-quake | Extreme Heat | Flood | Severe Storm | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|-------------|--------------|--------|--------------|---------------------|---------|-------------|
| Village of Ashkum | High | High | High | Medium | High | High | High | High |
| Village of Beaverville* | High | High | High | Low | High | High | High | High |
| Village of Buckley* | High | High | High | Low | High | High | High | High |
| Village of Chebanse* | High | High | High | Low | High | High | High | High |
| Village of Cissna Park | High | High | High | High | High | High | High | High |
| Village of Clifton* | High | High | High | Low | High | High | High | High |
| Village of Crescent City | High | High | High | Medium | High | High | High | High |
| Village of Danforth* | High | High | High | Low | High | High | High | High |
| Village of Donovan* | High | High | High | Low | High | High | High | High |
| City of Gilman | High | High | High | Medium | High | High | High | High |
| Iroquois County (Uninc.) | High | High | High | High | High | High | High | Medium |
| Village of Iroquois | High | High | High | High | High | High | High | High |
| Village of Loda* | High | High | High | Low | High | High | High | High |
| Village of Martinton* | High | High | High | Low | High | High | High | High |
| Village of Milford | High | High | High | Medium | High | High | High | High |
| Village of Onarga* | High | High | High | Low | High | High | High | High |
| Village of Papineau* | High | High | High | Low | High | High | High | High |
| Village of Sheldon* | High | High | High | Low | High | High | High | High |
| Village of Thawville* | High | High | High | Low | High | High | High | High |
| City of Watseka | High | High | High | High | High | High | High | High |
| Village of Wellington* | High | High | High | Low | High | High | High | High |
| Village of Woodland | High | High | High | High | High | High | High | High |

* These communities have no FEMA mapped flood hazards within their jurisdictions; however, the risks due to flooding still exist.

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3.4.3 Identifying Structures and Estimating Losses

For purposes of the vulnerability assessment, 'structures' were determined to include countywide structures and critical facilities.

At-Risk Structures. These structures are defined as residential, commercial, industrial or agricultural structures residing within the respective hazard area. For all hazards except flooding, all structures are equally at risk of being impacted.

Structure Value. Structure values were estimated for each property using FEMA's HAZUS program. Generally, local property value data as assessed by the property tax office is the most accurate; however, Iroquois County data is not digitized. Consequently, the data is not available for a large scale analysis of property values. If funding is pursued for any projects, more detailed valuation data will be required for a FEMA approved cost-benefit analysis.

Critical Facilities. Critical facilities were developed by augmenting the FEMA standard HAZUS facilities with locally provided data. HAZUS facilities include:

- Emergency Service Facilities, including:
 - Police and fire stations,
 - Emergency and long-term health care facilities, and
 - Emergency operations centers.
- Transportation Facilities, including:
 - Highway bridges,
 - Railroad bridges,
 - Highway and railroad segments,
 - Airports and runways.
- Utility Facilities, including:
 - Communication centers,
 - Power plants, and
 - Water and wastewater treatment facilities.
- Miscellaneous other facilities, including:
 - Dams and levees,
 - Schools,
 - Facilities storing or using hazardous material, and
 - Sites related to the military.

Each jurisdiction was offered the opportunity to provide addresses of additional critical facilities to be geo-coded and incorporated into the master Critical Facilities mapping layer. Examples of facilities deemed important by the local jurisdictions include churches, government buildings, water wells and other key business or industrial infrastructure.

Severe storms, severe winter storms, drought, extreme heat, earthquakes and tornados can occur anywhere within Iroquois County. As a result, all structures and critical facilities

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throughout the County are at risk to these natural hazards. Flood risk, however, is unique in that this risk is primarily focused to areas near or adjacent to streams. The Planning Team agreed that flood vulnerability is best estimated in areas mapped as FEMA recognized floodplains. Therefore, structures and critical facilities intersecting these flood boundaries assume a higher risk.

The four tables presented below identify the number, type and value of structures at risk to both countywide and flood related natural hazards.

Table 32. Structural Vulnerability by Type for the Entire County.

| Jurisdiction | Residential | | Commercial | | Industrial | | Institutional | | Agricultural | |
|-------------------|---------------|----------------------|------------|--------------------|------------|-------------------|---------------|--------------------|--------------|-------------------|
| | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) |
| Ashkum | 324 | 35,222,742 | 19 | 9,807,915 | 3 | 10,247,603 | 5 | 5,038,490 | 6 | 1,313,878 |
| Beaverville | 171 | 17,606,178 | 3 | 570,669 | 1 | 68,355 | 3 | 1,307,686 | 1 | 113,925 |
| Buckley | 278 | 35,370,652 | 8 | 2,068,010 | 3 | 723,595 | 3 | 2,497,404 | 2 | 197,470 |
| Chebalse | 296 | 29,305,154 | 19 | 7,237,085 | 5 | 2,300,871 | 3 | 2,136,690 | 2 | 607,600 |
| Cissna Park | 400 | 48,730,490 | 31 | 16,696,673 | 10 | 3,370,707 | 5 | 2,892,888 | 8 | 1,863,699 |
| Clifton | 576 | 65,766,637 | 27 | 9,742,621 | 4 | 859,208 | 7 | 4,174,619 | 4 | 1,012,414 |
| Crescent City | 265 | 33,091,486 | 11 | 2,579,886 | 13 | 3,282,552 | 4 | 3,750,922 | 0 | - |
| Danforth | 212 | 38,296,933 | 8 | 2,694,296 | 0 | - | 3 | 2,756,256 | 2 | 450,802 |
| Donovan | 121 | 17,230,211 | 4 | 653,682 | 3 | 469,655 | 2 | 11,834,518 | 0 | - |
| Gilman | 840 | 96,714,829 | 42 | 13,795,995 | 7 | 3,240,271 | 11 | 9,802,134 | 17 | 2,092,252 |
| Iroquois (Uninc.) | 6,671 | 605,029,216 | 203 | 62,212,794 | 59 | 14,094,011 | 38 | 16,487,810 | 257 | 46,050,688 |
| Iroquois | 68 | 11,405,908 | 4 | 3,058,783 | 0 | - | 0 | - | 3 | 530,834 |
| Loda | 215 | 21,144,142 | 9 | 5,145,422 | 3 | 6,387,615 | 4 | 3,243,280 | 3 | 417,725 |
| Martinton | 139 | 16,598,347 | 6 | 1,234,554 | 1 | 66,836 | 3 | 623,635 | 2 | 394,940 |
| Milford | 661 | 76,780,889 | 43 | 15,138,915 | 8 | 3,072,916 | 8 | 5,516,926 | 7 | 1,253,175 |
| Onarga | 527 | 66,099,708 | 32 | 13,269,958 | 10 | 3,659,803 | 7 | 4,318,730 | 14 | 5,706,010 |
| Papineau | 71 | 7,769,438 | 0 | - | 0 | - | 2 | 715,573 | 3 | 425,320 |
| Sheldon | 444 | 58,957,800 | 21 | 5,977,712 | 5 | 1,651,723 | 9 | 5,674,412 | 3 | 235,445 |
| Thawville | 102 | 13,727,772 | 0 | - | 0 | - | 3 | 1,304,306 | 0 | - |
| Watseka | 2,483 | 310,962,848 | 179 | 115,734,837 | 32 | 19,810,992 | 34 | 26,523,455 | 14 | 2,076,245 |
| Wellington | 119 | 13,704,738 | 8 | 1,859,483 | 3 | 1,024,711 | 2 | 940,235 | 1 | 136,710 |
| Woodland | 141 | 16,595,185 | 5 | 2,509,110 | 0 | - | 4 | 1,967,185 | 0 | - |
| TOTAL | 15,167 | 1,636,111,303 | 682 | 291,437,907 | 170 | 74,591,873 | 160 | 112,958,200 | 349 | 64,522,166 |

Table 33. Structural Vulnerability by Type for the Floodplains Only.

| Jurisdiction | Residential | | Commercial | | Industrial | | Institutional | | Agricultural | |
|-------------------|--------------|--------------------|------------|-------------------|------------|-------------------|---------------|------------------|--------------|------------------|
| | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) | Number | Value (\$) |
| Ashkum | 9 | 975,407 | 0 | - | 0 | - | 0 | - | 0 | - |
| Beaverville | - | - | - | - | - | - | - | - | - | - |
| Buckley | - | - | - | - | - | - | - | - | - | - |
| Chebanse | - | - | - | - | - | - | - | - | - | - |
| Cissna Park | 118 | 15,517,867 | 10 | 3,523,943 | 2 | 188,524 | 1 | 16,282 | 4 | 787,500 |
| Clifton | - | - | - | - | - | - | - | - | - | - |
| Crescent City | 18 | 2,206,509 | 1 | 276,733 | 1 | 281,329 | 1 | 187,690 | 0 | - |
| Danforth | - | - | - | - | - | - | - | - | - | - |
| Donovan | - | - | - | - | - | - | - | - | - | - |
| Gilman | 23 | 2,591,071 | 2 | 797,427 | 1 | 57,828 | 1 | 468,812 | 1 | 80,447 |
| Iroquois (Uninc.) | 698 | 63,236,264 | 17 | 5,281,292 | 3 | 624,918 | 3 | 1,474,761 | 23 | 4,206,780 |
| Iroquois | 8 | 1,299,243 | 1 | 276,062 | 0 | - | 0 | - | 1 | 139,415 |
| Loda | - | - | - | - | - | - | - | - | - | - |
| Martinton | - | - | - | - | - | - | - | - | - | - |
| Milford | 21 | 3,506,787 | 1 | 207,162 | 0 | - | 1 | 208,734 | 1 | 58,886 |
| Onarga | - | - | - | - | - | - | - | - | - | - |
| Papineau | - | - | - | - | - | - | - | - | - | - |
| Sheldon | - | - | - | - | - | - | - | - | - | - |
| Thawville | - | - | - | - | - | - | - | - | - | - |
| Watseka | 1189 | 148,818,667 | 44 | 28,418,938 | 14 | 8,927,100 | 6 | 4,626,401 | 6 | 876,323 |
| Wellington | - | - | - | - | - | - | - | - | - | - |
| Woodland | 121 | 14,242,540 | 5 | 2,451,450 | 0 | - | 2 | 1,026,292 | 0 | - |
| TOTAL | 2,205 | 252,394,355 | 81 | 41,233,007 | 21 | 10,079,699 | 15 | 8,008,972 | 36 | 6,149,351 |

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Table 34. Critical Facilities - Countywide

| Jurisdiction | Critical Facilities | | | | | Transportation | | Utilities | | | | | Community Facilities | TOTAL | |
|-------------------|---------------------|-----------|-----------------|---------------|----------|----------------|------------|-----------|-------------------|--------------|-----------------------|---------------------|----------------------|-----------|----------------------|
| | Emergency Centers | Schools | Police Stations | Fire Stations | Hospital | Airport | Bridges | Dams | Electric Facility | Oil Facility | Water Treatment Plant | Wastewater Facility | | | Communication Center |
| Ashkum | - | 1 | - | 1 | - | - | - | - | - | - | 1 | - | - | 1 | 4 |
| Beaverville | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| Buckley | - | 2 | - | 1 | - | - | - | - | - | - | - | - | - | 1 | 4 |
| Chebense | - | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - | 5 | 8 |
| Cissna Park | - | 1 | 1 | 1 | - | - | - | - | - | - | - | - | - | 1 | 4 |
| Clifton | 1 | - | 1 | 1 | - | - | 2 | - | - | - | 1 | - | - | 9 | 15 |
| Crescent City | - | 2 | - | 1 | - | - | 3 | - | - | - | - | - | 1 | - | 7 |
| Danforth | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - | - | 2 |
| Donovan | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Gilman | - | - | - | - | - | - | 6 | - | - | - | - | 1 | 1 | 3 | 11 |
| Iroquois (Uninc.) | - | 6 | - | - | - | 12 | 528 | 5 | 2 | 1 | 2 | 2 | 3 | 18 | 579 |
| Iroquois | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | 1 |
| Loda | - | - | - | 1 | - | - | 3 | - | - | - | - | - | - | 1 | 5 |
| Martinton | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Milford | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - | 1 | 3 |
| Onarga | - | 2 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | 4 |
| Papineau | - | - | - | 1 | - | - | - | - | - | - | - | - | - | 1 | 2 |
| Sheldon | - | 1 | 1 | 1 | - | - | 1 | - | - | - | - | - | - | 2 | 6 |
| Thawville | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | 1 |
| Watseka | 1 | 6 | 2 | 1 | 1 | - | 1 | - | 2 | 1 | - | 1 | 3 | 12 | 31 |
| Wellington | - | - | - | 1 | - | - | - | - | 1 | 1 | 1 | - | 1 | 6 | 11 |
| Woodland | - | 1 | - | 1 | - | - | - | - | - | - | 1 | - | - | - | 3 |
| TOTAL | 2 | 24 | 6 | 15 | 1 | 12 | 547 | 5 | 5 | 3 | 6 | 4 | 10 | 64 | |

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Table 35. Critical Facilities - FEMA Mapped Flood Hazard Only

| Jurisdiction | Critical Facilities | | | | | Transportation | | Utilities | | | | | Community Facilities | TOTAL | |
|-------------------|---------------------|----------|-----------------|---------------|----------|----------------|------------|-----------|-------------------|--------------|-----------------------|---------------------|----------------------|----------|----------------------|
| | Emergency Centers | Schools | Police Stations | Fire Stations | Hospital | Airport | Bridges | Dams | Electric Facility | Oil Facility | Water Treatment Plant | Wastewater Facility | | | Communication Center |
| Ashkum | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Beaverville | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Buckley | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Chebanse | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Cissna Park | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 |
| Clifton | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Crescent City | - | - | - | - | - | - | 2 | - | - | - | - | - | - | - | 2 |
| Danforth | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Donovan | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Gilman | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 |
| Iroquois (Uninc.) | - | - | - | - | - | 2 | 133 | 1 | - | - | - | - | 2 | - | 138 |
| Iroquois | - | - | - | - | - | - | 1 | - | - | - | - | - | - | - | 1 |
| Loda | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Martinton | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Milford | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Onarga | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Papineau | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Sheldon | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Thawville | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Watseka | - | 2 | - | - | - | - | 1 | - | 1 | 1 | - | 1 | 2 | 3 | 11 |
| Wellington | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0 |
| Woodland | - | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - | 2 |
| TOTAL | 0 | 3 | 0 | 0 | 0 | 2 | 137 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 156 |

Tornados, earthquakes, severe storms, severe winter storms, extreme heat, and drought could potentially affect any or every location within each jurisdiction depending on the path or area the event encompasses. These hazards and their occurrences are not limited to a particular geographic area based on historical events and documentation provided in the hazard profile section for each hazard. These hazards can affect any jurisdiction at any time making every asset vulnerable. Flooding, however, is unique in that probability can be isolated to areas primarily in or adjacent to FEMA mapped floodplains.

FEMA recognized flood hazards are shown on the community maps in **Appendix G**.

Repetitive Loss. FEMA tabulates data about properties receiving funding for flood-related disasters on a jurisdictional basis, including the amount of assistance provided, the number of properties with active flood insurance, the value of all insurance policies, and the number of repetitive loss properties. FEMA defines repetitive loss properties as those which have received recovery assistance at least twice during the previous ten years. Due to the continued drain on disaster recovery efforts and funds, it is a FEMA goal to reduce or eliminate repetitive losses through hazard mitigation planning. In addition, repetitive loss properties tend to be those most exposed to severe damage or loss, indicating owners or users of the structure are at an increased risk of injury or loss of life due to a disaster.

Within Iroquois County there are 39 repetitive loss structures. The City of Watseka has the majority of the repetitive loss properties, with 34. The properties in Watseka have received slightly over \$1.4 million in payments. Three of the remaining properties are in the unincorporated portion of the County, with one each in Woodland and Cissna Park. Payments for those properties are \$89,169, \$13,641, and \$15,882, respectively.

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3.4.4 Assessing Vulnerability – Population at Risk

Population is a major component to estimating risk and should be considered when assessing vulnerability to natural hazards.

3.4.4.1 Existing Population at Risk

Severe storms, severe winter storms, drought, extreme heat, earthquakes and tornados can occur anywhere within Iroquois County. As a result, all population throughout the County is at risk to these natural hazards. Flood risk, however, is unique in that this risk is focused to areas near or adjacent to streams. The Planning Team agreed that flood vulnerability is best estimated in areas mapped as FEMA recognized floodplains. Therefore, the populace residing within these flood boundaries assumes a higher risk.

The table below shows population demographics for the jurisdictions in Iroquois County for the population vulnerable to flooding.

Table 36. Flood Vulnerable Population

| Jurisdiction | Total Population | At-Risk Population | Percent at Risk |
|--------------------------|-------------------------|---------------------------|------------------------|
| Village of Ashkum | 724 | 23 | 3.2% |
| Village of Beaverville | 391 | 0 | 0.0% |
| Village of Buckley | 595 | 0 | 0.0% |
| Village of Chebanse | 689* | 0 | 0.0% |
| Village of Cissna Park | 812 | 197 | 24.3% |
| Village of Clifton | 1,317 | 0 | 0.0% |
| Village of Crescent City | 631 | 41 | 6.5 |
| Village of Danforth | 587 | 0 | 0.0% |
| Village of Donovan | 351 | 0 | 0.0% |
| City of Gilman | 1,793 | 48 | 2.7% |
| Village of Iroquois | 12,387 | 28 | 13.5% |

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Table 36. Flood Vulnerable Population

| Jurisdiction | Total Population | At-Risk Population | Percent at Risk |
|--------------------------|-------------------------|---------------------------|------------------------|
| Iroquois County (Uninc.) | 207 | 1,046 | 8.4% |
| Village of Loda | 419 | 0 | 0.0% |
| Village of Martinton | 375 | 0 | 0.0% |
| Village of Milford | 1,369 | 51 | 3.7% |
| Village of Onarga | 1,438 | 0 | 0.0% |
| Village of Papineau | 196 | 0 | 0.0% |
| Village of Sheldon | 1,232 | 0 | 0.0% |
| Village of Thawville | 258 | 0 | 0.0% |
| City of Watseka | 5,670 | 2,049 | 36.1% |
| Village of Wellington | 263 | 0 | 0.0% |
| Village of Woodland | 319 | 294 | 92.2% |

Population estimates for areas within a mapped flood hazard were based upon area weighted averages. The proportion of the Census block in the flood hazard was calculated and the population in the block was assumed to be spread homogenously through the block.

3.4.4.2 Population and Developmental Trends

The Iroquois County population is essentially static. The Illinois Department of Commerce has estimated populations for each of the counties in the state on five year increments through 2030, based on the 2000 U.S. Census. In the 2000 Census, Iroquois County had 31,386 residents. The Commerce Department estimates the Iroquois County population will grow at an annual rate of approximately 0.5%, for a total change of 15.7% through 2030. However, the U.S. Census estimated the 2005 population to be 4.8% smaller than that estimated by the State of Illinois. Consequently, few additions to the building stock in the County are expected in the foreseeable future. In addition, the County has a defined plan for where development should be focused, which takes into account floodplains, the only geographically definable natural hazard discussed in this plan.

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Land use in the county is predominately agricultural. According to the land cover data, as calculated by 1999 and 2000 photometric analysis, 95% of Iroquois County is agricultural. Approximately 2% of the County is classified as urban and 1.3% of the County is classified as seasonally wet to permanently open water. The following table is a summary of the land cover data, provided by the Illinois Department of Agriculture.

Table 37. Land Cover Data

| Cover Type | Percent Cover |
|--------------|---------------|
| Agricultural | 94.9 |
| Forested | 1.6 |
| Urban | 2.3 |
| Wetland | 0.9 |
| Water | 0.4 |

Source: Illinois Dept. of Commerce, Statewide Mosaic of Land Cover of Illinois, 2000

4.0 Mitigation Strategy

The Mitigation Strategy portion of this plan leverages the results of the hazard identification and vulnerability assessment to identify local risk reduction goals and actions. The process incorporated participation and coordination amongst the Planning Team to develop goals and actions that were specific, measurable, achievable, relevant and time or schedule dependent.

The mitigation strategies developed within the Plan provide a blueprint for reducing the potential losses identified in the risk assessments and does not conflict with existing authorities, policies, programs and resources.

4.1 DEFINITION OF MITIGATION

Mitigation is defined as “sustained action that reduces or eliminates long-term risk to people and property from hazards and their effects.” Mitigation is the ongoing effort at the federal, state, local and individual levels to decrease the impact of disasters upon families, homes, the jurisdiction and the economy. Mitigation also includes making existing and future development in hazard prone areas safer. A jurisdiction can steer growth to areas with fewer risks through non-structural measures such as avoiding construction in flood-prone areas. Preventing damages or loss to lives or property is the essence of mitigation. Incorporating mitigation into decisions relating to a jurisdiction’s growth can result in a safer, more resilient jurisdiction, and one that is more attractive to families and businesses.

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4.2 MITIGATION GOALS

The planning team discussed the mitigation goals for the Iroquois County plan during the second meeting. The principal goals are those formulated by FEMA; namely:

1. Reduce risks through regulations, such as building codes, planning ordinances, or floodplain regulations.
2. Reduce exposure to hazards through building or parcel specific activities, such as flood proofing or property acquisition.
3. Reduce impacts through response and recovery activities implemented during and after a disaster.
4. Minimize impacts through projects, such as detention basins or tornado shelters.
5. Assist residents to prepare for risks and implement protective measures for themselves and their property.

Meeting participants were also given the opportunity to create additional goals if they so desired.

4.3 LOCAL HAZARD MITIGATION ACTIVITIES

The planning team worked together and individually throughout the planning process to identify, evaluate, and analyze a comprehensive range of specific mitigation actions. These actions were based on the evaluation of the risk assessment and in coordination with the mitigation goals that were formed by each jurisdiction.

During the September 17, 2009 stakeholder meeting, attendees reviewed the hazard profiles and results of the vulnerability assessments. The concept of risk mitigation activities was introduced and examples were discussed together, and then each community separated to develop individualized plans. The Planning Team members worked together to develop and complete a series of community mitigation worksheets. These worksheets encouraged communities to work with local resources to develop mitigation goals, activities, priorities, and capabilities. One of the primary purposes of the mitigation actions is to reduce the vulnerability of the existing structures and, secondarily, potential future structures, to each of the hazards. A copy of the worksheet each community completed is attached as **Figure 18**. As a result of the process, the group ultimately developed several mitigation goals to reduce or avoid long-term vulnerabilities for hazards within each jurisdiction. These goals are provided in **Appendix I**. The group also identified specific locations for most of the goals provided. The maps showing the locations of the actions are collected in **Appendix G**.

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Community Name _____ **Contact Name** _____ **Contact Phone No.:** _____

Mitigation Goals:

1. **Preventative Activities.** Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.
2. **Property Protection.** Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofitting.
3. **Emergency Services.** Reduce impacts through response and recovery activities that are implemented during a disaster.
4. **Structural Projects.** Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.
5. **Public Information.** Assist residents to prepare for risks and protective measures to better protect themselves and their property.
6. **Other.** _____

| Item Number | Goal Number | Mitigation Action | Responsible Agency & Contact Person | Funding Source | Implementation Timeline | Estimated Benefits [†] | Estimated Costs [†] |
|----------------|-------------|---|---|---------------------------------|-------------------------|---------------------------------|------------------------------|
| Example | 2 | <i>Purchase homes in the 100 year floodplain and convert the space to a park or greenspace to reduce flood impacts.</i> | <i>County Planning Department - Bob Jones, Director</i> | <i>HMGF & General Funds</i> | <i>5 years</i> | <i>Medium</i> | <i>Medium</i> |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |

[†] **Benefit and Cost estimates should be based on these categories:**

- Less than \$100,000 = Low
- \$100,000 - \$500,000 = Medium
- More than \$500,000 = High

Figure 18. Mitigation Activity Development Worksheet

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4.3.1 Mitigation Activities by Type

The group focused upon various types of activities that could be performed to reduce the risk of natural hazards throughout their communities. These activities were categorized as follows:

- a. Prevention. (PA) Preventative activities are designed to keep current problems from getting worse and to eliminate the possibility of future problems. Prevention activities reduce a jurisdiction's vulnerability to hazard events. This type of activity is especially effective in hazard prone areas where development has not occurred. Prevention activity examples include the following:
 - 1) Planning and Zoning
 - 2) Floodplain regulations
 - 3) Local ordinances
- b. Property Protection. (PP) Property protection activities are designed to adapt existing structures to withstand natural hazards or to remove structures away from hazard prone areas. Property protection activity examples include the following:
 - 1) Acquisition
 - 2) Relocation
 - 3) Foundation elevation
 - 4) Insurance – flood and homeowner's
 - 5) Retrofitting (includes activities such as wind proofing, flood proofing, and seismic design standards)
- c. Emergency Services. (ES) Emergency services minimize the impact that a natural hazard has on the residents of a jurisdiction. Usually, actions are taken by emergency response services immediately before, during, or in response to a hazard event. Emergency service activity examples include the following:
 - 1) Warning systems
 - 2) Evacuation planning and management
 - 3) Sandbagging for flood protection
- d. Structural Projects. (SP) Structural projects lessen the impact of a natural hazard by changing the natural progression of the hazard. These types of projects are usually designed by engineers. Structural projects include the following:
 - 1) Storm sewers
 - 2) Floodwalls
 - 3) Highway projects
 - 4) Tornado shelters

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- e. Public Information and Awareness. (PI) Public information and awareness activities are used to educate the residents of a jurisdiction about the potential hazards that affect their area, hazard prone areas, and mitigation strategies they can take part in to protect themselves and their property. Public information and awareness activity examples include the following:
- 1) Public speaking events
 - 2) Outreach projects
 - 3) Availability of hazard maps
 - 4) School programs
 - 5) Library materials

4.4 IMPLEMENTATION OF MITIGATION ACTIVITIES

Each jurisdiction's Plan Representative(s) worked with community resources to develop mitigation activities based upon local vulnerabilities and capabilities. These actions were identified and prioritized using a prioritization scheme, generalized benefit/cost approach, and funding identification strategy. For each action developed, an action administrator or authority was defined along with an estimated timeframe for completing the activity.

The hazard mitigation actions developed were prioritized based upon the capacity of an action to eliminate or reduce risk, the category of activity performed, the generalized benefit to cost ratio of each activity, and its potential for funding.

4.4.1 Activity Prioritization

The Planning Team prioritized each activity based upon its ability to eliminate or reduce risk associated with mitigation goal. The following table was used to categorize each activity's priority as listed within **Appendix I**.

Table 38. Activity Prioritization

| Priority | Description |
|-------------|--|
| A-Very High | Priority A projects permanently eliminate damages or significantly reduce the probability of deaths and injuries in a specified area. Priority A is also given to other activities that have a high probability of systematically reducing damages or deaths and injuries across a wide area from one or more hazards. |
| B-High | Priority B projects permanently reduce damages in a specified area. Priority B is also given to other activities with the potential for reducing damages, deaths and injuries across a wide area from one or more hazards. |
| C-Medium | Priority C projects, or activities, permanently reduce damages or significantly reduce the probability of deaths and injuries in a specified area from one of my community's less significant hazards. |
| D-Low | Priority D projects or activities help alert the public to the approach of a threat from any hazard, or educate the public about the need for disaster preparedness and mitigation. |

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4.4.2 Activity Benefit-Cost Review

The Planning Team also considered the return on investment for each activity. Both the benefits and the costs were examined on a qualitative basis (i.e. High, Medium, and Low). The three categories were divided based on the estimated value of the benefits derived or the cost of developing the action or project. If the costs or benefits were expected to be less than \$100,000, the category was low. If the costs or benefits were expected to surpass \$100,000 but be less than \$500,000, the category was medium. If the costs or benefits were expected to exceed \$500,000, the category was high. The result produced a generalized approach for assessing relative benefits to cost. The Planning Team agreed that more detailed benefit cost analysis would be performed as necessary prior to the implementation of each activity. In cases of activities identified for funding through FEMA mitigation programs, the group recognized that FEMA approved benefit-cost analysis would be required.

4.4.3 Activity Funding and Implementation

The Planning Team considered and identified the funding resources that may be available for each activity. At this stage, no specific plans were developed to fund projects, but probable sources of funding were identified. In general, the identified source of funding corresponded to the implementing agency. As part of the activity development process, each activity defined by a given jurisdiction was recommended to identify a lead agency or personnel responsible for implementing the activity.

Most sources of public funding will require a detailed cost-benefit analysis of the proposed mitigation activities, as well as an analysis of potential alternatives. Development of mitigation actions should also include a STAPLEE analysis. STAPLEE is an acronym standing for Social, Technical, Administrative, Political, Legal, Environmental, and Economic. Each of these criteria should be reviewed to determine the usefulness and potential for implementation. Difficulties in any of the seven criteria could potentially derail a mitigation action because of unforeseen opposition or ramifications.

As part of the evaluation of a proposed mitigation activity, the community should evaluate if the action will comply with the requirements of the NFIP. As stated previously, the NFIP does not allow structures or development to occur in the floodway, such that flood waters are forced onto other properties. Actions which do not maintain NFIP compliance should be re-structured or discouraged.

4.5 LOCAL MITIGATION STRATEGY AND CAPABILITIES ASSESSMENT

This plan includes specific actions for each jurisdiction in Iroquois County. These actions are based on goals developed to address the risks identified throughout the region. It is the

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intent of each jurisdiction to implement these actions using practices that are cost-effective, environmentally sound, and technically feasible. While these goals are approved by the participants from each jurisdiction, no funding has been dedicated for any of the projects and further research and project development is required before any project may be implemented.

Following the Plan's adoption, the Planning Committee will continue to work with the Iroquois County government, departments and other regional organizations to implement mitigation strategies on a regional basis where feasible. While the commitment to implementing this strategy is strong, the potential for success is directly linked to each jurisdiction's capability.

The purpose of the capability assessment is to identify the potential hazard mitigation opportunities available to each jurisdiction that may already exist as part of each jurisdiction's daily operations (e.g. code enforcement, operations, maintenance, etc).

This assessment will highlight the positive measures already in place in the jurisdiction as well as identify weaknesses that could increase vulnerability in a jurisdiction. The capability assessment serves as the foundation for an effective hazard mitigation strategy. By establishing goals and objectives for jurisdictions to pursue under the Plan, it ensures that the goals and objectives that are decided upon are realistically attainable given local resources.

4.5.1 Local Mitigation Practices

The following defines local practices already in place throughout the county's jurisdictions that encourage or promote mitigation activities. These practices reside within existing polices, ordinances, programs, and other planning efforts.

Mitigation Management Policies. The Emergency Operations Plan (EOP) provides for an integrated countywide emergency preparedness and response plan, utilizing public, nonprofit, and private resources. Iroquois County maintains an emergency operations plan. The plan includes roles and responsibilities of persons/departments in charge of dispatching help during a natural hazard, rules that are followed, evacuation procedures dispersed by the transportation officer to be followed, etc.

Existing Plans. In general, the County's policies encourage cooperation and coordination within its jurisdictional agencies, as well as cooperation, including mutual aid compacts, between neighboring counties and municipalities within the region. The EOP provides for an integrated countywide emergency preparedness and response plan, utilizing public, nonprofit, and private resources.

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Mitigation Programs. The main mitigation programs are the county's floodplain management regulations and participation in and administration of the National Flood Insurance Program. Additional programs include:

- a. The County's Floodplain Regulations are aimed at restricting development in the floodplain. The Iroquois County Zoning Ordinance restricts development to those uses which are unlikely to be impacted by floodwaters, such as agriculture, camps, parks, etc. In addition, the ordinance requires that any impact not decrease the capacity of the floodplain to contain flood waters. The Subdivision Ordinance restricts all development in flood-prone areas.
- b. Iroquois County severe weather warnings will be disseminated by activation of emergency radio warning systems and subsequent rebroadcast by broadcast stations and cable television system.

4.5.2 Available Funding Resources

There are several sources of funding for both pre- and post-disaster hazard mitigation policies and projects. While all mitigation techniques will save money by avoiding different types of losses, the implementation of mitigation efforts can be costly and well beyond the local jurisdiction or county's capacity to fund the mitigation activity. There are existing federal and state funding programs that can be utilized for funding assistance. The following is a list of some sources of funding presently available. This list is not comprehensive, as new programs can be developed or existing programs can be eliminated or modified over time.

- a. Federal Sources:
 - 1) *Pre-disaster Mitigation Program: Federal Emergency Management Agency (FEMA):* Through the Disaster Mitigation Act of 2000, Congress approved the creation of a national program to provide a funding mechanism that is not dependent on a Presidential disaster declaration. The Pre-Disaster Mitigation (PDM) Program provides funding to states and communities for cost-effective hazard mitigation activities that complement a comprehensive mitigation program, as well as reduce injuries, loss of life, and damage and destruction of property.
 - 2) *Emergency Management Performance Grant: Federal Emergency Management Agency (FEMA):* The Emergency Management Performance Grant (EMPG) encourages the development of comprehensive emergency management at the State and local level in order to improve emergency management planning, preparedness, mitigation, response, and recovery capabilities. Funding is provided to the State, which can be used to educate people and protect lives and structures from natural and technological hazards.

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- 3) *Public Assistance Grant Program: Federal Emergency Management Agency (FEMA):* The Public Assistance (PA) Grant Program provides supplemental assistance to states, local governments, and certain private non-profit organizations to alleviate sufferings and hardship resulting from major disasters or emergencies declared by the President. These grants allow State and local government to respond to disasters, recover from their impact, and mitigate impact from future disasters.
- 4) *Flood Mitigation Assistance Program: Federal Emergency Management Agency (FEMA):* FEMA's Flood Mitigation Assistance Program (FMA) provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP). FMA was created as part of the National Flood Insurance Reform Act of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the NFIP. FMA is a pre-disaster grant program, and is made available to states on an annual basis. This funding is exclusively available for mitigation planning and implementation of mitigation measures.

The community must be a participant in NFIP and the project must be cost effective, beneficial to the NFIP fund, and technically feasible. The project must conform to the minimum standards of the NFIP Floodplain Management Regulations, the applicant's Flood Mitigation Plan, and all applicable laws and regulations.

- 5) *Hazard Mitigation Grant Program: Federal Emergency Management Agency (FEMA):* The Hazard Mitigation Grant Program (HMGP) was created in November 1988 through Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The HMGP assists states and local communities in implementing long-term mitigation measures following a Presidential disaster declaration.

A project must conform to the State's Hazard Mitigation Plan, provide a beneficial impact on the disaster area, meet environmental requirements, solve a problem independently, and be cost-effective.

- 6) *Community Development Block Grants: US Department of Housing and Urban Development:* The Community Development Block Grant (CDBG) program provides grants to local governments for community and economic development projects that primarily benefit low- and moderate-income people. The CDBG program also provides grants for post-disaster hazard mitigation and recovery following a Presidential disaster declaration. To be eligible for a CDBG, a community must have a population less than 50,000 (200,000 for counties) and be located within a Presidential disaster declaration area.

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- 7) *Sustainable Development Assistance: Department of Energy:* A Sustainable Development Assistance team works with communities to help them define and implement sustainable development strategies as part of their comprehensive community planning efforts. The team provides technical assistance to disaster-affected communities as they plan for long-term recovery by introducing a wide array of environmental technologies and sustainable redevelopment planning practices.
- 8) *Emergency Watershed Protection: Department of Agriculture: Natural Resources Conservation Service (NRCS):* The Emergency Watershed Protection Program (EWP) provides financial assistance to sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized stream banks, and purchase floodplain easements. The program is designed for the implementation of recovery measures. It is not necessary for a national emergency to be declared to be eligible for assistance.
- 9) *Emergency Relief Program (Transportation Infrastructure): Department of Transportation, Federal Highway Administration:* The Emergency Relief (ER) Program provides assistance for repair of Federal-aid roads. This funding is allocated to rebuild transportation facilities that are damaged extensively, causing a "disastrous impact" on transportation services. States must request ER funding in order to initiate this assistance program.
- 10) *United States Army Corps of Engineers:* Congress delegates to the United States Army Corps of Engineers (USACE) the authority and appropriations for projects through the Water Resources and Development Act (WRDA). Projects eligible for funding include the following: disaster response, water supply, shore protection, navigation, facilities design & construction, installation support, hydropower, recreation, flood damage reduction, environmental infrastructure, ecosystem restoration, master planning, regulatory projects, and the rehabilitation of flood control structures

b. State Funding:

- 1) *Section 208 Snagging and Clearing for Flood Control: United States Corps of Engineers:* Corps of Engineers designs and constructs the project. Each project must be engineering feasible, complete within itself, and economically justified. The nonfederal sponsor must provide all lands, easements, and rights of way. Non-Federal sponsor pays all project costs in excess of the Federal limit of \$500,000. Sponsor agrees to maintain the project.

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- 2) *Volunteer Labor Force (G): Illinois Department of Corrections:* Prisoners can be used to sandbag, construct levees and flood fight. Prisoners are also occasionally used to clean streams of brush and debris or clean up following a flood disaster.
- 3) *Community Development Assistance Program (Community Development Block Grant): Illinois Department of Commerce and Community Affairs:* Eligible projects must include activities that improve community welfare, specifically in moderate or low-income areas. Conservation related projects can possibly include the acquisition of real property (e.g., flood-prone areas), construction of water or sewer facilities, and initiatives for energy conservation. Funding competition is intense. Application deadlines vary; no match required.
- 4) *Hazard Mitigation Assistance Program: IEMA Agency:* Governments must be enrolled and in good standing with the NFIP. Eligible initiatives are eligible for projects that include acquisition of insured structures and underlying real property for open space use. Provides up to 75% of project costs, 25% match required.
- 5) *Greenways and Trails Planning Assistance Program: Illinois Department of Natural Resources:* IDNR provides community-wide or individual assistance and training to communities trying to regulate floodplain development activities and reduce existing flood problems. Can provide communities with training manuals, model floodplain and storm water ordinances, technical assistance, risk assessment, and floodplain mapping.
- 6) *Open Space Lands Acquisition and Development (OSLAD) Program and Open Lands Trust Program: Illinois Department of Natural Resources:* Eligible products include money for acquisition and development of public parks for passive recreation/open spaces. Application deadlines vary. Conservation easement required with both programs. Funding is reimbursable up to 50% of project costs, reimbursable up to \$2 million for the Trust Grant.

There are several sources of available funding for hazard mitigation projects. Those identified here, while they are significant, do not comprise all potential sources of funding. It should be noted that new programs can become available while existing programs can be modified or dropped. Many funds available are leveraged with "local" matching funds at various contribution percentages. Should any of the above funding sources be utilized, a detailed cost-benefit analysis should be completed prior to application. Diligence in keeping abreast of changes in funding opportunities will be necessary to institute hazard mitigation projects that take advantage of non-local funds.

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Plan Maintenance
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Iroquois County and its jurisdictions are well positioned to perform successful implementation of the activities identified within the Plan. As a result, the communities are better prepared to achieve their identified goals for mitigating local risk to natural hazards throughout the region.

5.0 Plan Maintenance

Plan Maintenance is the process in which the Plan will be monitored, evaluated, and updated within a five-year cycle. When updated, the plan will be reviewed, revised, and resubmitted to the State/IEMA within five years of the plan for approval by FEMA Region V. As appropriate, the plan will also be evaluated after a disaster, or after unexpected changes in land use or demographics in or near hazard areas. The Planning Committee also will be kept apprised of a change in federal regulations, programs and policies, such as a change in the allocation of FEMA's funding for mitigation grant programs. These evaluations will be addressed in the annual progress report for the plan and may affect the Action Plan for Mitigation goals and activities.

5.1 MONITORING, EVALUATING, AND UPDATING THE PLAN

Monitoring. The Community Representatives will continue to monitor the status and track the progress of the plan elements on an annual basis. The Community Representatives will oversee the progress made on the implementation of the identified actions and update the plan as needed to reflect changing conditions. Representatives will also meet annually to evaluate plan progress and recommend updates. The County Emergency Service Disaster Agency and the County Planning Department will share the responsibility for maintaining the plan.

Evaluating. Evaluation of the plan will not only include checking the implementation status of mitigation actions, but also assessing their degree of effectiveness and assessing whether other natural hazards need to be addressed and added to the plan. This will be accomplished by reviewing the benefits (or avoided losses) of the mitigation activities that were in place within each jurisdiction and county. These will be compared to the goals the Plan has set to achieve. The team will also evaluate whether mitigation actions need to be discontinued or modified in light of new developments or changes within the community. Public comment on the plan and achievement of goals and objectives will also be solicited annually during the evaluation by the committee. The process will be documented by the Community Representatives and submitted to the Iroquois County Emergency Services and Disaster Agency and the Department of Planning and Zoning for review who will then update the Iroquois County website with any review updates.

IROQUOIS COUNTYWIDE MULTI- HAZARD MITIGATION PLAN

Additional State Requirements
August 5, 2010

Updating. As required by part 201.6(c)(4)(i) of the Local Hazard Mitigation Plan Review Crosswalk, this plan will be updated within 5 years of the date of the Federal Emergency Management Agency's (FEMA) approval of the plan. The plan may be updated earlier, at the discretion of the Planning Committee and its jurisdictions. Also, the Committee's ability to update the mitigation process by adding new data and incorporating it into the mitigation plan, will allow for the efficient use of available resources, staff, and programs. Any changes in the Plan will be documented and appended in a section titled "Amendments". The Action Plan will be maintained as an Appendix so it can remain a living document.

5.2 IMPLEMENTATION THROUGH EXISTING PROGRAMS

The identified action projects address reducing the effects of hazards on new buildings and infrastructure as well as existing buildings and infrastructure. Activities also incorporate mitigation activities into other planning mechanisms and recommends mitigation projects that can be integrated into Master Plans, Flood Mitigation Plans, Capital Improvement Plans, Land Use Plans, Emergency Management Plans, Zoning Ordinances, Building Codes, and Post-Disaster Mitigation Policies and Procedures where appropriate. In addition, projects will be implemented through existing or ongoing programs.

5.3 CONTINUED PUBLIC PARTICIPATION

In order to have continued public support of the mitigation process, it is important that the public be involved not only in the preparation of the initial plan, but also in any modifications or updates to the plan. To ensure that public support is maintained, the following actions may be taken by the Community Representatives or Project Administrator:

Develop informational mailings to be distributed to the public about mitigation efforts in the County and updates made to the Plan.

Develop mitigation flyers or mailings that contain mitigation activities and actions that promote reducing damages and risks of natural hazards.

Develop a survey following a Presidential, Emergency, or State Declaration to solicit public input about current or possible future mitigation activities, and place it on the County website.

Hold a public meeting prior to plan update/re-adoption every five (5) years, to allow for public comment on the plan.

6.0 Additional State Requirements

Illinois has additional requirements for local plans as identified within the Illinois Natural Hazards Mitigation Plan. The State plan requests that local plans include the following tables and worksheets for each jurisdiction represented by the plan:

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Additional State Requirements

August 5, 2010

- a. Worksheet 3A. Critical Facilities, Structures, and Population Information.
- b. Potential Structure Losses for Floods.
- c. Potential Structure Losses for Earthquakes.

The tables provided in **Appendix J** satisfy Illinois requirements and may be used to augment future natural hazard planning practices and risk mitigation approaches

Appendix A

Adoption Resolutions and Executive Orders

Appendix B

Meeting Documentation

**First Meeting
April 13, 2009**

| Name | Representing Jurisdiction |
|--------------------|---------------------------------|
| Arnold Hess | Village of Danforth |
| Bill Kelch | Milks Grove Township |
| Bob Froominckx | Village of Clifton |
| Carl Gerdovich | ESDA Coordinator |
| Cathy Meltzer | State Rep Lisa Dugan |
| Charles Alt | County Board |
| Charles Garfield | Personal |
| Cory Birch | Milford |
| Dale Schultz | Chebanse Township |
| Damon Schuldt | Martinton |
| Daniel Smith | IEMA |
| Dave Grant | Beaver Township |
| Dave Mayotte | Watseka |
| Delmer Schoolman | Clifton |
| Denise Delong | Stockland Township |
| Dennis Higgins | Ford Co. OEM |
| Don Deany | Regional Planning |
| Don Wauthier | Clifton |
| Doug Benner | Belmont Township |
| Everett Davison | Watseka |
| Frank Hines | Milford Fire |
| Gary Barnlund | Beaver Township |
| Gary Luhman | Village of Cissna Park |
| Gloria Schleef | Iroquois County Zoning |
| Harold Loy | Iroquois County |
| Harriett Mowrey | Stockland Township |
| James Yana | Sheldon Township |
| Jared Owen | IEMA-State of Illinois |
| Jean Davison | City of Watseka |
| Jean Hiles | County Board |
| Jerry Henrichs | Crescent Township |
| Jim Gilvin | Plan |
| Jim Schwan | Village of Clifton |
| Jim Sorensen | Crescent City |
| Joel Nasers | Watseka Building Official |
| John Anderson | Watseka |
| John Bell | Personal |
| Josh Clyden | IMH Ambulance |
| Ken Barragree | |
| Kenneth Lafond | Village President |
| Larry Decker | Village of Danforth - Fire Dept |
| Larry Elliott | Loda |
| Larry Mahoney | Clifton |
| Linda Hancock | Stockland Township |
| Lori Yates | Iroquois Memorial Hospital |
| LouWonna Snodgrass | Village of Donovan |
| Mark Bramstedt | Watseka |
| Marleen Purdin | Village of Woodland |

| | |
|------------------|------------------------|
| Marti Bramstedt | City of Watseka |
| Marvin DeLahr | City of Watseka |
| Michael Johnson | Iroquois County |
| Michael Marcier | City of Watseka |
| Mike Kiefer | Personal |
| Mike Moran | Woodworth |
| Norman Anderson | Milford Township |
| Osborne Storm | Iroquois |
| Paul Heideman | Village of Ashkum |
| Paul McTaggart | Belmont Township |
| Rich Wilken | Clifton |
| Rick Baier | Cissna Park Fire |
| Rod Copas | Douglas Township |
| Roger Ritzma | Douglas Township Road |
| Russell Bills | Iroquois County Dist 2 |
| Russell Williams | Woodland |
| Ryan Brault | Municipal-Clifton |
| Sam Ripple | Iroquois ESDA |
| Scott Anderson | |
| Sherry Garrelts | IMH |
| Steve Marquis | Artesia Township |
| Steve Yana | SDFD/IMH EHS |
| Ted Horner | City of Watseka |
| Troy Cailteux | Chebance Township Fire |
| Vern Grohler | Beaverville Fire |
| Warren Butzow | Woodland |
| Wayne Link | Village of Buckley |
| William Weakley | Municipal |

**Second Meeting
September 17, 2009**

| Name | Representing Jurisdiction |
|--------------------|---------------------------------|
| Daniel F. Smith | IEMA |
| Everett Davison | Watseka |
| Noona Davison | Watseka |
| Ted Horner | Watseka |
| Mike McGehee | Gilman |
| Marvin Delahr | Watseka |
| Carl Gerdovich | ESDA |
| Bob Harwood | Watseka |
| Marleen Purdie | Woodland |
| Donny Crow | Iroquois County |
| Richard J. Sygulb | Sheldon |
| Mike Marcier | Watseka |
| John Anderson | Watseka |
| Sam Ripple | ESDA |
| LouWonna Snodgrass | Donovan |
| Gloria Schleef | Iroquois County Zoning |
| Richard Matthews | Sheldon |
| Kenneth R. Lofond | Beaverville |
| Don Wantheis | Iroquois County Zoning |
| Norman Anderson | Milford |
| Gary Luhman | Cissna Park |
| Warren B | Woodland |
| Russell Bills | Iroquois County |
| Mary Ann Kiefer | Watseka |
| Mike Kiefer | Watseka |
| Cory Bird | Milford |
| Linda Hancock | Stockland (Iroquois County) |
| Joel Nasers | Watseka |
| Mark Lemevatter | Clifton |
| Michael Johnson | Sheldon |
| Frank Hines | Milford |
| Rick Baier | Cissna Park |
| Pam Anderson | Donovan |
| Roger Ritzina | Douglas Twp. (Iroquois County) |
| Kim Nakaerts | Chebanse Twp. (Iroquois County) |
| Lori Yates | Watseka |
| Dilman Schoolman | Clifton |

**Third Meeting
May 5, 2010**

| Name | Representing Jurisdiction |
|--------------------|----------------------------------|
| Carl Gerdovich | Iroquois County |
| Michael Johnson | Iroquois County |
| Dick Mabbitt | Sheldon |
| Bob Harwood | Watseka |
| Jean Davison | Watseka |
| Eve Davison | Watseka |
| Stanley Sratten | Onarga |
| Marvin DeLahr | Watseka |
| Joel Nasers | Watseka |
| Bill Weakley | Crescent City |
| Jim Sorensen | Crescent City |
| Russell Williams | Woodland |
| Gary Barkland | Donovan |
| Steve King | Sheldon |
| Jim Devine | Watseka |
| Rolt Geddes | Wellington |
| Don Deany | Watseka |
| Paul Heideman | Ashkum |
| Gloria Schleef | Iroquois County |
| Delmar Schoolman | Clifton |
| Nancy Voyles | Wellington |
| Penelope Kent | Wellington |
| Richard Sygulla | Sheldon |
| Kim Wakaerts | Chebanse |
| Gary Lukman | Cissna Park |
| Justin Horn | Cissna Park |
| Kenneth Lafond | Beaverville |
| Virginia Lafond | Beaverville |
| Sam Ripple | Watseka |
| Ted Horner | Watseka |
| Warren Butlow | Woodland |
| Dave Grant | Beaver Township |
| LouWonna Snodgrass | Donovan |
| Cory Birch | Milford |
| JoAnn Butzow | Wellington |
| Penny Keith | Wellington |

Iroquois Countywide Multi-Hazard Mitigation Plan
 Stakeholder Meeting
 April 13, 2009
 Iroquois Regional Health Center

Presenters: Carl Gerdovich, Iroquois County Emergency Services and Disaster Agency Coordinator; Jared Owen, Illinois Emergency Management Agency Hazard Mitigation Planner; Mike Anderson, Stantec; Kristen Dunaway, Stantec; Jared Edwards, Stantec

Attendees: See attached list.

Jurisdictions Represented:

| Jurisdiction | Representative Present |
|------------------|------------------------|
| Ashkum | Y |
| Beaverville | Y |
| Buckley | Y |
| Cissna Park | Y |
| Chebanse | Y |
| Clifton | Y |
| Crescent City | Y |
| Danforth | Y |
| Donovan | Y |
| Gilman | Y |
| Iroquois Village | N |
| Iroquois County | Y |
| Loda | Y |
| Martinton | N |
| Milford | N |
| Onarga | N |
| Papineau | N |
| Sheldon | Y |
| Thawville | N |
| Watseka | Y |
| Wellington | N |
| Woodland | Y |

The meeting was called to order by Carl Gerdovich. Jared Owen from IEMA and the Stantec team were introduced.

Carl discussed:

- The purpose of the plan.
 - To develop an understanding of the hazards the County is exposed to.
 - Become eligible for FEMA funding to mitigate risks.
- The purpose of the meeting.
 - Explain the purpose of the plan and the process to the stakeholders and public officials responsible for implementation.
 - Gain buy-in from stakeholders.
 - Obtain input on problem areas.

Jared Owen next talked about:

- The role of IEMA. Mitigation in Illinois began in 1993. Since that time IEMA/FEMA has spent over \$100 million on various projects, including the purchase of 3,500 homes. IEMA has successfully reduced the risk exposure to several counties through application of funding.
- Iroquois County more heavily impacted by tornado damage than by flooding. In any given year there is a 58% probability of a tornado impacting the County.
- Mitigation is intended to provide sustainable solutions, which require minimal maintenance that permanently eliminate or minimize exposure to risk.

Mike Anderson presented the following:

- Iroquois County has been awarded a Hazard Mitigation Grant Program (HMGP) planning grant.
- What should a countywide mitigation plan do?
 - Reduce or eliminate long-term risk to human life and property.
 - Give a community a 'comprehensive' guide for future mitigation efforts.
 - Include representation from every community in the county.
- What should a mitigation plan not do?
 - It will not replace your Emergency Operation Plan
- What can a hazard mitigation plan do?
 - Identify and assess risk.
 - Develop strategies for reducing risk.
 - Improve communication between agencies.
 - Enhance existing programs.
 - Provide eligibility for future mitigation program funding.
- Planning Goals:
 - Create a Countywide HMP to:
 - § Protect lives, property, economic viability and quality of life,
 - § Become more hazard resistant, especially flooding,
 - § Compliment existing efforts
 - § Organize future mitigation efforts.
- Project Overview:
 - Planning Process
 - § Meetings, stakeholder input, data gathering
 - Risk Assessment (Hazard Identification and Vulnerability)
 - § Analyze past occurrences, probabilities, documents, and maps
 - § Stakeholders were asked to provide records of past events (i.e. newspaper clippings, damage records, photographs)
 - § Stakeholders were also asked to provide documents related to how hazards are currently regulated (i.e. zoning regulations, building codes, etc.)
 - Mitigation Strategies
 - § Determine strategies to reduce risk (preventative, protection, projects, education, etc)
 - Plan Review, Approval, and Adoption
 - § Public review, IEMA and FEMA preliminary approval and council adoption
 - Plan Maintenance Process
 - § Periodic plan monitoring, evaluating and updating through annual reviews.
- Plan Schedule and Important Dates:

1. Planning Process [throughout]
2. Risk Assessment (Hazard Identification and Vulnerability), [now – mid June]
3. Mitigation Strategy, [mid June – mid July]
4. Flood Mitigation Plan Review, Approval and Adoption, [mid July – early October]

Miscellaneous Notes

- Flooding was perceived as the primary hazard by the majority of stakeholders present
- Tornadoes was perceived as a major risk by some
- Some discussion focused on the potential for disasters from the rail lines or highways through the county
 - Jared Owen responded:
 - § FEMA does not currently fund mitigation activities for man-made disasters; however, they may in the future
 - § Also, if RR, highway, or other man-made disasters are perceived as important, they should be included in plan
 - § In the end, this is a natural HMP, so the majority of the effort should focus on natural hazards, not man-made

List of Attendees

| Name | Jurisdiction Represented |
|--------------------|---------------------------------|
| Osborne Storm | Ashkum |
| Paul Heideman | Ashkum |
| Dave Grant | Beaverville |
| Wayne Link | Buckley |
| Wayne Link | Buckley |
| Steve Marquis | Buckley |
| Dale Schultz | Chebanse |
| Rick Baier | Cissna Park |
| Gary Luhman | Cissna Park |
| Larry Mahoney | Clifton |
| Delmer Schoolman | Clifton |
| Rich Wilken | Clifton |
| Ryan Brault | Clifton |
| Jim Schwan | Clifton |
| Troy Cailteux | Clifton |
| Bob Frooninckx | Clifton |
| Don Wauthier | Clifton |
| Jerry Henrichs | Crescent City |
| Larry Decker | Danforth |
| Arnold Hess | Danforth |
| LouWonna Snodgrass | Donovan |
| Gary Barnlund | Donovan |
| Roger Ritzma | Gilman |

| Name | Jurisdiction Represented |
|------------------|---------------------------------|
| Jim Gilvin | Gilman |
| Rod Copas | Gilman |
| Daniel Smith | IEMA |
| Mike Moran | Iroquois County |
| Carl Gerdovich | Iroquois County |
| Sam Ripple | Iroquois County |
| Gloria Schleef | Iroquois County |
| Larry Elliott | Loda |
| Dennis Higgins | Paxton |
| James Yana | Sheldon |
| Michael Johnson | Sheldon |
| Mark Bramstedt | Watseka |
| Dave Mayotte | Watseka |
| William Weakley | Watseka |
| Ted Horner | Watseka |
| John Anderson | Watseka |
| Michael Marcier | Watseka |
| Scott Anderson | Watseka |
| Jean Davison | Watseka |
| Everett Davison | Watseka |
| Marvin DeLahr | Watseka |
| Marti Bramstedt | Watseka |
| Russell Bills | Watseka |
| Joel Nasers | Watseka |
| Mike Kiefer | Watseka |
| Paul McTaggart | Woodland |
| Marleen Purdin | Woodland |
| Russell Williams | Woodland |
| Warren Butzow | Woodland |
| Doug Benner | Woodland |
| John Bell | Unknown |

Iroquois Countywide Multi-Hazard Mitigation Plan
 Public Meeting
 April 13, 2009
 Iroquois Regional Health Center

Presenters: Carl Gerdovich, Iroquois County Emergency Services and Disaster Agency Coordinator; Jared Owen, Illinois Emergency Management Agency Hazard Mitigation Planner; Mike Anderson, Stantec

Attendees:

| Name | Jurisdiction Represented |
|------------------|---------------------------------|
| Vern Grohler | Beaverville |
| Kenneth Lafond | Beaverville |
| Harold Loy | Beaverville |
| Charles Alt | Cissna Park |
| Bill Kelch | Clifton |
| Jim Sorensen | Crescent City |
| Harriett Mowrey | Iroquois County |
| Denise Delong | Iroquois County |
| Linda Hancock | Iroquois County |
| Cathy Meltzer | Kankakee |
| Damon Schuldt | Martinton |
| Norman Anderson | Milford |
| Cory Birch | Milford |
| Frank Hines | Milford |
| Steve Yana | Sheldon |
| Sherry Garrelts | Watseka |
| Ken Barragree | Watseka |
| Lori Yates | Watseka |
| Don Deany | Watseka |
| Charles Garfield | Watseka |
| Jean Hiles | Watseka |
| Josh Clyden | Unknown |

The meeting was called to order by Carl Gerdovich and Jared Owens and the Stantec team was introduced.

Carl discussed:

- The purpose of the plan.
 - To develop an understanding of the hazards the County is exposed to.
 - Become eligible for FEMA funding to mitigate risks.
- The purpose of the meeting.
 - Explain the purpose of the plan and the process to the stakeholders and public officials responsible for implementation.
 - Obtain input on problem areas.

Jared Owen next talked about:

- The role of IEMA. Mitigation in Illinois began in 1993. Since that time IEMA/FEMA has spent over \$100 million on various projects, including the purchase of 3,500 homes. IEMA has successfully reduced the risk exposure to several counties through application of funding.
- Iroquois County more heavily impacted by tornado damage than by flooding. Over \$90 million has been paid by FEMA for tornado damages. In any given year there is a 58% probability of a tornado impacting the County.
- Mitigation is intended to provide sustainable solutions, which require minimal maintenance that permanently eliminate or minimize exposure to risk.

Mike Anderson presented the following:

- Iroquois County has been awarded a Hazard Mitigation Grant Program (HMGP) planning grant.
- What should a countywide mitigation plan do?
 - Reduce or eliminate long-term risk to human life and property.
 - Give a community a 'comprehensive' guide for future mitigation efforts.
 - Include representation from every community in the county.
- What should a mitigation plan not do?
 - It will not replace your Emergency Operation Plan
- What can a hazard mitigation plan do?
 - Identify and assess risk.
 - Develop strategies for reducing risk.
 - Improve communication between agencies.
 - Enhance existing programs.
 - Provide eligibility for future mitigation program funding.
- Planning Goals:
 - Create a Countywide HMP to:
 - § Protect lives, property, economic viability and quality of life,
 - § Become more hazard resistant, especially flooding,
 - § Compliment existing efforts
 - § Organize future mitigation efforts.
- Project Overview:
 - Planning Process
 - § Meetings, stakeholder input, data gathering
 - Risk Assessment (Hazard Identification and Vulnerability)
 - § Analyze past occurrences, probabilities, documents, and maps
 - Mitigation Strategies
 - § Determine strategies to reduce risk (preventative, protection, projects, education, etc)
 - Plan Review, Approval, and Adoption
 - § Public review, IEMA and FEMA preliminary approval and council adoption
 - Plan Maintenance Process
 - § Periodic plan monitoring, evaluating and updating through annual reviews.
- Plan Schedule and Important Dates:
 - Risk assessment summary and discussion meeting in 6-8 weeks.
 - Final approval in approximately 6 months.

Miscellaneous Notes:

- Flooding was perceived as the primary hazard by the majority of stakeholders present.

Iroquois Countywide Multi-Hazard Mitigation Plan
 Public Meeting
 September 17, 2009
 Iroquois County Administrative Offices

Presenters: Carl Gerdovich, Iroquois County Emergency Services and Disaster Agency Coordinator; Mike Anderson, Stantec; Kristen Dunaway, Stantec; Jared Edwards, Stantec

Attendees: See attached list.

Jurisdictions Represented:

| Jurisdiction | Representative Present |
|------------------|------------------------|
| Ashkum | N |
| Beaverville | Y |
| Buckley | N |
| Cissna Park | Y |
| Chebanse | N |
| Clifton | Y |
| Crescent City | N |
| Danforth | N |
| Donovan | Y |
| Gilman | Y |
| Iroquois Village | N |
| Iroquois County | Y |
| Loda | N |
| Martinton | N |
| Milford | Y |
| Onarga | N |
| Papineau | N |
| Sheldon | Y |
| Thawville | N |
| Watseka | Y |
| Wellington | N |
| Woodland | Y |

The meeting was called to order by Carl Gerdovich. Mr. Gerdovich gave a summary of the reasons for the meeting and the history of the planning effort. He also discussed the importance of developing a hazard mitigation plan and the benefits associated with the plan.

Mike Anderson discussed the procedure used to collect the data, do the research, and develop the plan. Mr. Anderson urged communities which had not submitted hazard data and critical facilities list to do so as quickly as possible, in order to make the plan more accurately represent the hazards impacting each jurisdiction. Mr. Anderson then discussed the results of the preliminary hazard assessment. Several members of the audience had questions or comments which were discussed by the Stantec group. After all of the concerns were discussed, Mr. Anderson introduced the ultimate goal of the meeting, which was to develop mitigation activities for each jurisdiction.

Jared Edwards then discussed the worksheet developed by Stantec to assist in the development of mitigation activities and went through an example activity. Following the discussion of potential activities, each of the jurisdictions was given maps and worksheets to develop their own goals. The jurisdictions were divided into groups and Mike Anderson, Kristen Dunaway, and Jared Edwards facilitated discussions and answered questions about the results of the hazard assessment and mitigation activity goals.

Once a jurisdiction had completed their worksheets the meeting was ended. A goal was set to complete the plan and have a draft ready for participant review around January, 2010, depending on the data and submittals from the various jurisdictions.

List of Attendees:

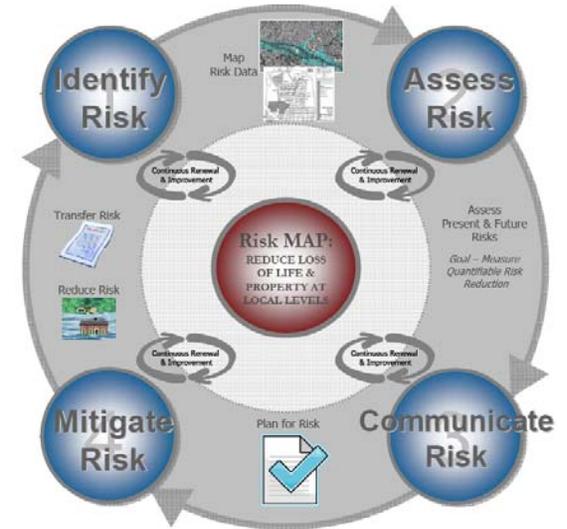
| Name | Representing Jurisdiction |
|--------------------|----------------------------------|
| Daniel F. Smith | IEMA |
| Everett Davison | Watseka |
| Noona Davison | Watseka |
| Ted Horner | Watseka |
| Mike McGehee | Gilman |
| Marvin Delahr | Watseka |
| Carl Gerdovich | ESDA |
| Bob Harwood | Watseka |
| Marleen Purdie | Woodland |
| Donny Crow | Iroquois County |
| Richard J. Sygulb | Sheldon |
| Mike Marcier | Watseka |
| John Anderson | Watseka |
| Sam Ripple | ESDA |
| LouWonna Snodgrass | Donovan |
| Gloria Schleef | Iroquois County Zoning |
| Richard Matthews | Sheldon |
| Kenneth R. Lofond | Beaverville |
| Don Wantheis | Iroquois County Zoning |
| Norman Anderson | Milford |
| Gary Luhman | Cissna Park |
| Warren B | Woodland |
| Russell Bills | Iroquois County |
| Mary Ann Kiefer | Watseka |
| Mike Kiefer | Watseka |
| Cory Bird | Milford |
| Linda Hancock | Stockland (Iroquois County) |
| Joel Nasers | Watseka |
| Mark Lemevatter | Clifton |
| Michael Johnson | Sheldon |
| Frank Hines | Milford |
| Rick Baier | Cissna Park |

| | |
|------------------|---------------------------------|
| Pam Anderson | Donovan |
| Roger Ritzina | Douglas Twp. (Iroquois County) |
| Kim Nakaerts | Chebanse Twp. (Iroquois County) |
| Lori Yates | Watseka |
| Dilman Schoolman | Clifton |



Mike Anderson, CFM
Mitigation Planning Manager
mike.anderson@stantec.com
(859) 422-3000

Carl Gerdovich
Iroquois Co ESDA Coordinator
cgesda@co.iroquois.il.us
carl@wgsfaradio.com
(815) 867-6667

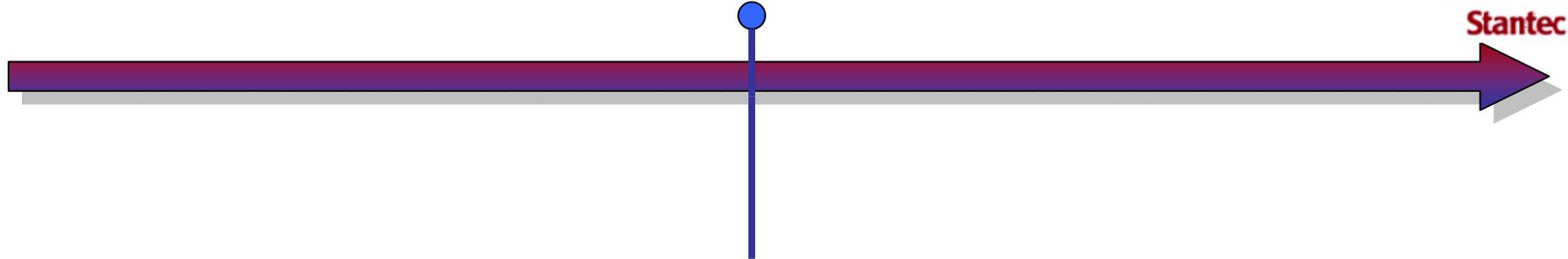


**Hazard Mitigation Plan
Kick-off Meetings
Monday April 13, 2009**

**Iroquois Regional Health
Center
200 Laird Lane,
Watseka, IL 60970**



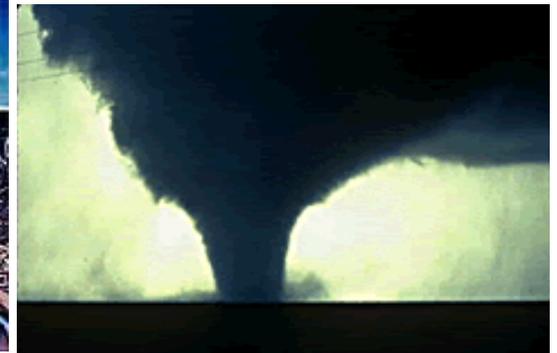
DEVELOP
HAZ-PLAN



Project Goal?

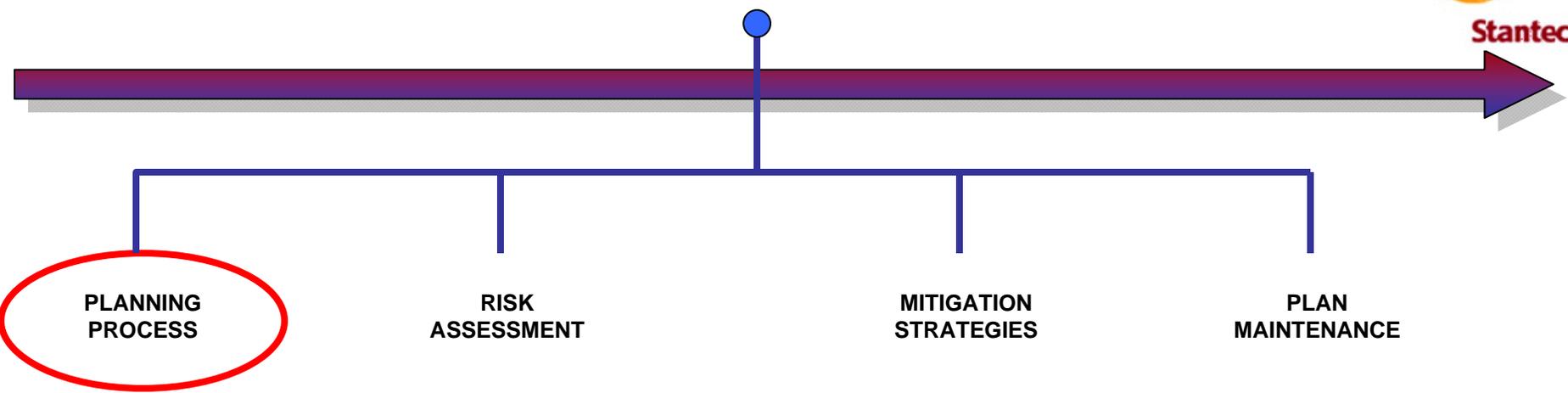
Create a Local Multi-Hazard Mitigation Plan to:

- Protect lives, property, economic viability and quality of life,
- Become more disaster-resistant,
- Compliment existing efforts,
- Organize future mitigation efforts.

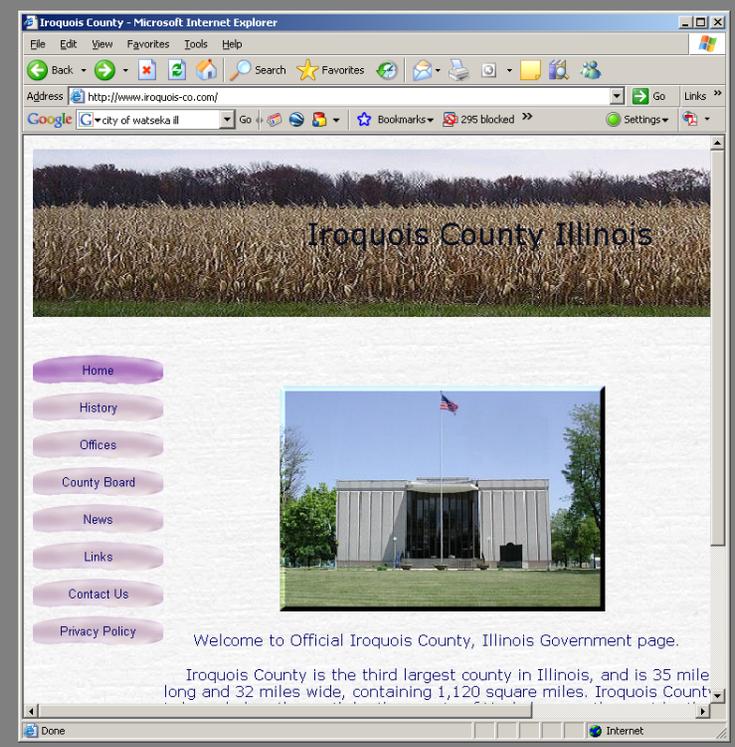




DEVELOP
HAZ-PLAN



Three Coordination Meetings
(including public meeting)
Website and Community Promotion
Public and Stakeholder Involvement



DEVELOP
HAZ-PLAN



Why Are You Here?

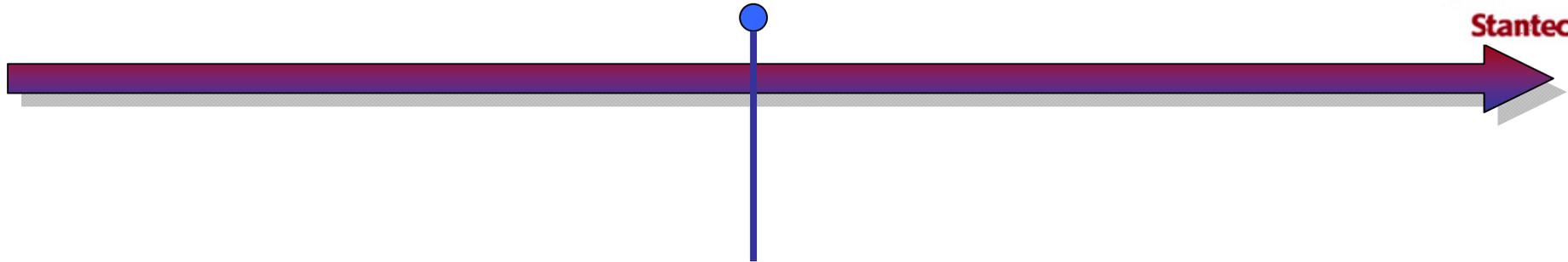
You are the Core Group (Planning Team)

- Awareness of the process,
- Information gathering,
- Utilize your expertise,
- Provide documents and data,
- Perform draft plan reviews, and
- Offer feedback.

Primary Points of Contact

- Key representatives,
- Coordination roles, etc.
- Illinois EMA
- FEMA Region V

DEVELOP
HAZ-PLAN



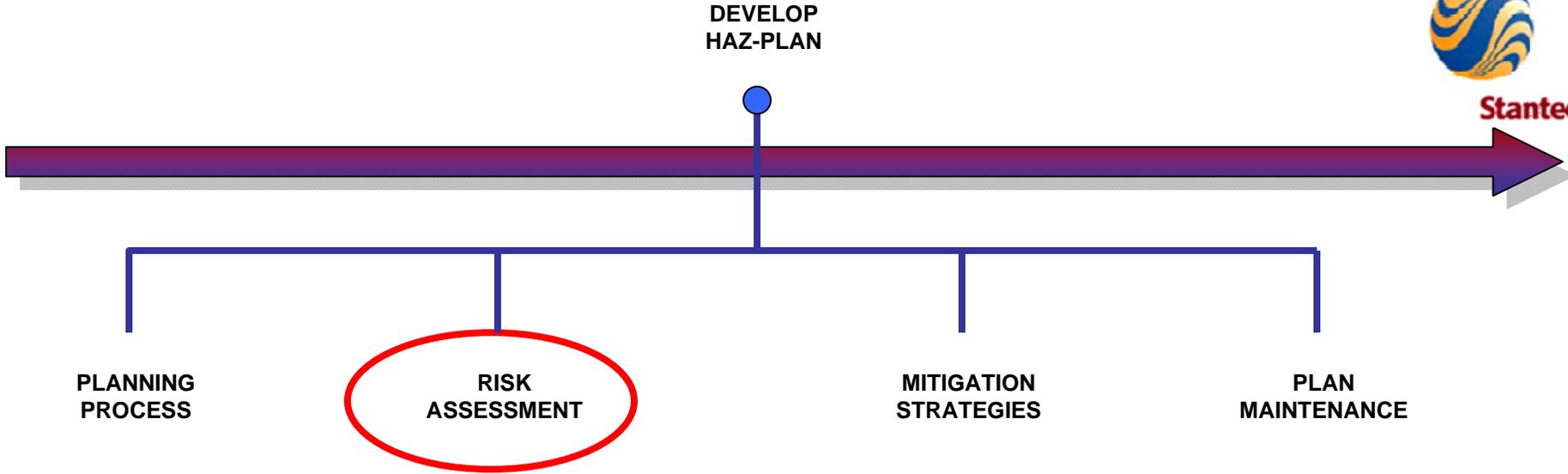
PLANNING PROCESS

1. Discuss Natural Hazards
2. Define Critical Facility
3. Discuss Timeline
4. Hand Out Press Release
5. Establish Remaining Meetings
6. Identify Relevant Documents
7. Organize and Schedule Interviews

PUBLIC INVOLVMENT

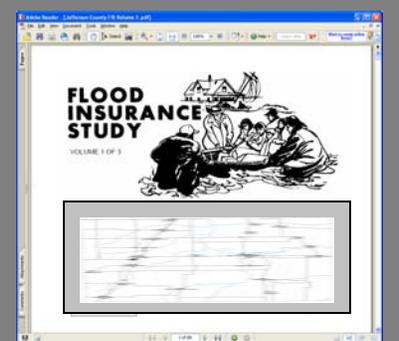
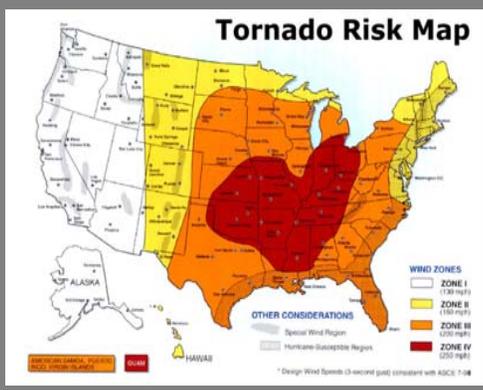
1. Present Plan Process
2. Confirm Schedules
3. Discuss Prioritized Hazards



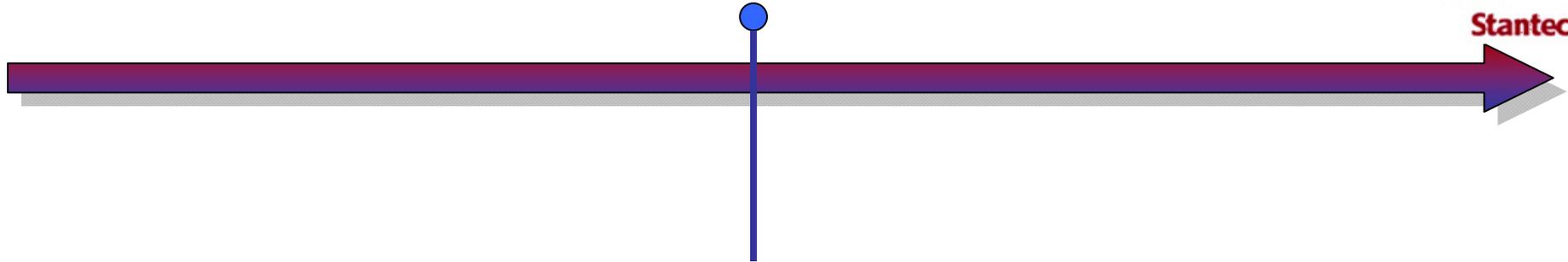


Identify Regional Hazards
 Review History of Occurrences
 Assess Vulnerabilities Based On:

- Population
- Critical Facilities
- Value of Assets



DEVELOP
HAZ-PLAN



RISK ASSESSMENT

1. Data Gathering
2. Existing Plan Check-List
3. Existing Regulations
4. Local Mapping – GIS Base Data
5. Critical Facilities
6. Property Value Information
7. GAP Analysis and Data Augmentation
8. Discuss Assessment Techniques
9. Determine Vulnerability
10. IEMA - Coordination

PUBLIC INVOLVEMENT

1. Awareness





Iroquois County NFIP Information

| Community | Flood Policies | Past Claims Number / Total | Repetitive Loss Buildings |
|---------------------------------|-----------------------|-----------------------------------|----------------------------------|
| <i>Ashkum Village</i> | 2 | 0 / \$0 | 0 |
| <i>Village of Chebanese</i> | 0 | 0 / \$0 | 0 |
| <i>Village of Cissna Park</i> | 32 | 13 / \$86,415.22 | 1 |
| <i>Village of Crescent City</i> | 4 | 1 / \$3,473 | 0 |
| <i>City of Gilman</i> | 8 | 1 / \$942.69 | 0 |
| <i>Iroquois County</i> | 82 | 41 / \$691,280.94 | 2 |
| <i>Village of Iroquois</i> | 0 | 1 / \$421.50 | 0 |
| <i>Village of Milford</i> | 3 | 0 / \$0 | 0 |
| <i>Village of Onarga</i> | 1 | 0 / \$0 | 0 |
| <i>Village of Thawville</i> | 1 | 0 / \$0 | 0 |
| <i>City of Watseka</i> | 535 | 264 / \$5,047,253.88 | 34 |
| <i>Village of Woodland</i> | 40 | 9 / \$63,014.24 | 1 |



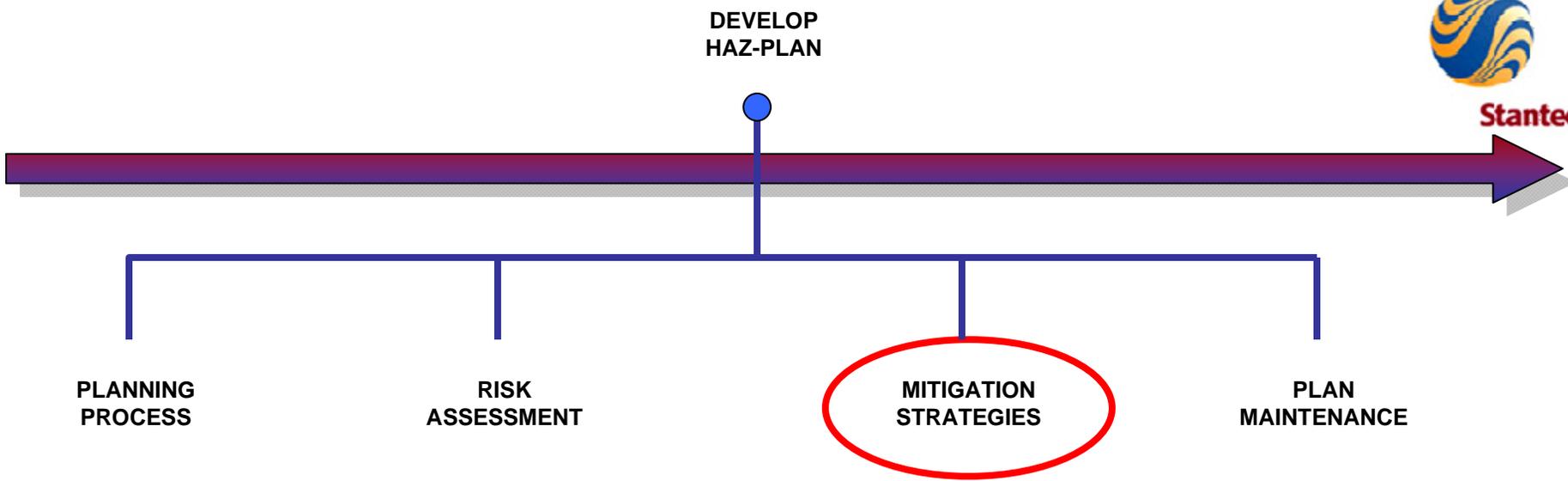
Presidential Disasters Declared for Iroquois County

| Event Type | Year | Damages |
|-----------------------------------|------|--------------|
| <i>Severe Ice Storm</i> | 1990 | \$9,297,012 |
| <i>Severe Storms and Flooding</i> | 1994 | \$30,399,236 |
| <i>Severe Storms and Flooding</i> | 2008 | \$8,744,102 |



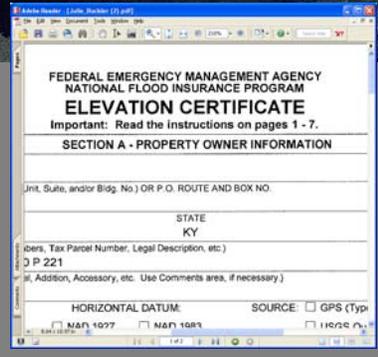
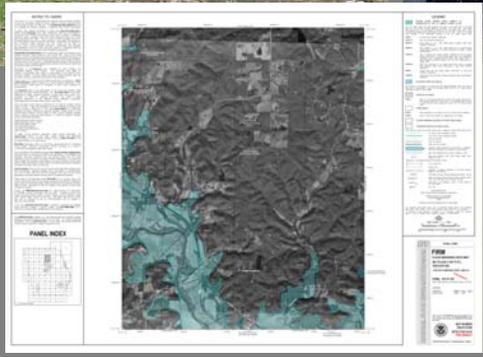
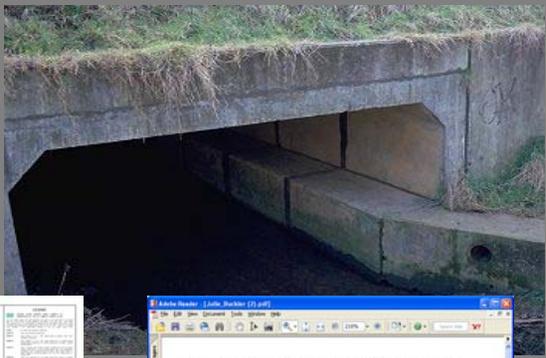
Reported Storm Events

| Event Type | Number of Events | Deaths | Injuries | Damages |
|----------------------|-------------------------|---------------|-----------------|---------------------|
| <i>Droughts</i> | 1 | 0 | 0 | 0 |
| <i>Floods</i> | 27 | 0 | 1 | \$5,065,000 |
| <i>Hail</i> | 45 | 0 | 0 | \$300,000 |
| <i>Snow/Ice</i> | 17 | 6 | 0 | \$0 |
| <i>Thunderstorms</i> | 129 | 8 | 13 | \$1,444,000 |
| <i>Tornados</i> | 36 | 0 | 11 | \$9,036,000 |
| Totals | 255 | 14 | 25 | \$15,845,000 |



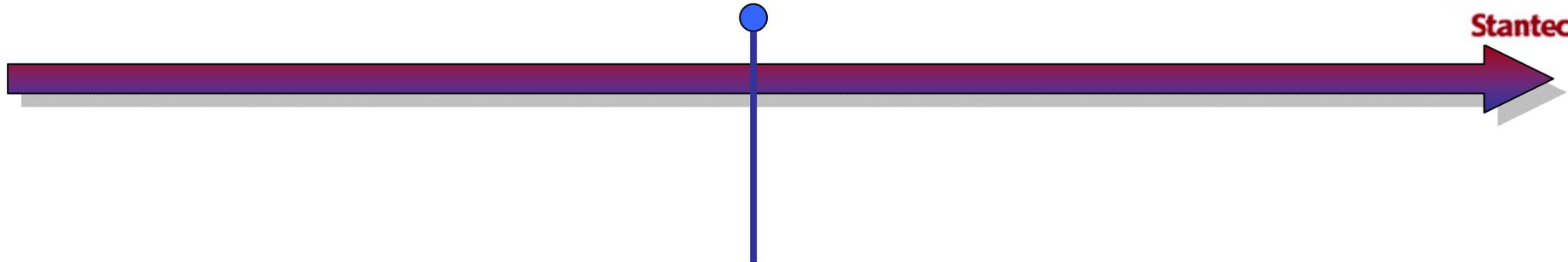
Developing S M A R T goals and activities.

Specific
Measurable
Attainable
Relevant
Time-Phased





DEVELOP
HAZ-PLAN



MITIGATION STRATEGIES

1. Develop Goals and Objectives
2. Develop Alternatives, Costs
3. Create Evaluation Criteria
4. Prioritization Matrix

PUBLIC PORTION

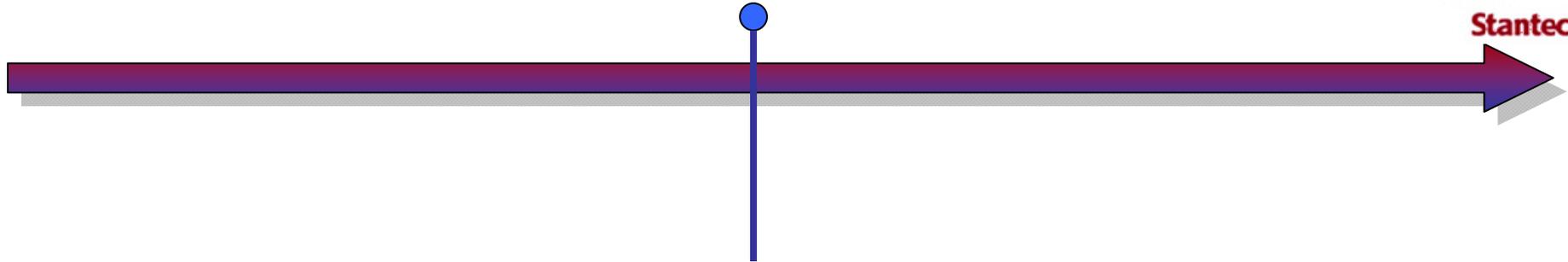
1. Awareness
2. Feedback

PLAN MAINTENANCE

1. Capability Assessment
2. Incorporation into Existing Planning
3. Plan Revisions and Five-Year Updates
4. Public Involvement and Outreach

| Licking County All Natural Hazard Mitigation Plan | Emergency Preparedness | Public Education | Severe Storms Mitigation | Emergency Response | Public Awareness | Plan Update |
|---|---------------------------|---------------------|-----------------------------|-----------------------|---------------------|----------------|
| Flooding | | | | | | |
| No Action | 2 | 3 | 2 | 2 | 2 | 5 |
| Educate residents in high-risk areas of "warning signs" of flash floods. | 4 | 4 | 4 | 5 | 5 | 5 |
| Increase service area and early warning detection for residents. | 3 | 3 | 4 | 5 | 4 | 5 |
| Evaluate the potential for a County Emergency Announcement system (EAS; "Severe Ops"). | 3 | 4 | 4 | 4 | 3 | 5 |
| Increase the number of rain gauges and tracking capabilities in Licking County. | 4 | 5 | 4 | 4 | 4 | 5 |
| Evaluate critical development standards and management of floodplains with countywide coordination. | 4 | 4 | 4 | 5 | 3 | 5 |
| Generate new floodplain maps that can be updated easier and that can help Licking County better manage their floodplains. | 4 | 4 | 4 | 4 | 4 | 5 |
| Target existing structures - create buy-outs, retrofit existing structures and/or uplift. | 3 | 3 | 3 | 4 | 3 | 5 |
| Create County program (continuous) for stream maintenance. | 3 | 4 | 4 | 4 | 3 | 5 |
| Educate landowners as to their responsibility with stream maintenance. | 4 | 4 | 4 | 4 | 3 | 5 |
| Lock into techniques to prevent driving through high water. | 2 | 2 | 2 | 3 | 3 | 5 |
| Increase public awareness of flooding - "credibility" important. | 4 | 5 | 4 | 5 | 4 | 5 |
| Determine areas of concern in regard to infrastructure that is continually being damaged or destroyed during a flood event. | 4 | 4 | 4 | 4 | 4 | 5 |
| Lock into "vulnerable" programs for mitigating before and after an event. | 4 | 3 | 3 | 4 | 3 | 5 |
| Severe Storms | | | | | | |
| No Action | 1 | 2 | 1 | 1 | 1 | 4 |
| Innovative PSA - not just the facts! Clarify what severe weather is and whether or not a resident should be concerned. | 4 | 5 | 4 | 5 | 5 | 4 |
| Evaluate other communities and how they respond to severe storms, and make the public aware of the hazard. | 3 | 4 | 3 | 4 | 3 | 4 |
| Earthquakes | | | | | | |
| No Action | 2 | 2 | 2 | 2 | 2 | 1 |
| Increase awareness and damaging effects of earthquakes. | 3 | 4 | 4 | 5 | 3 | 1 |
| Provide residents and builders with examples of how to build for "earthquakes". | 3 | 4 | 3 | 4 | 3 | 1 |

DEVELOP
HAZ-PLAN

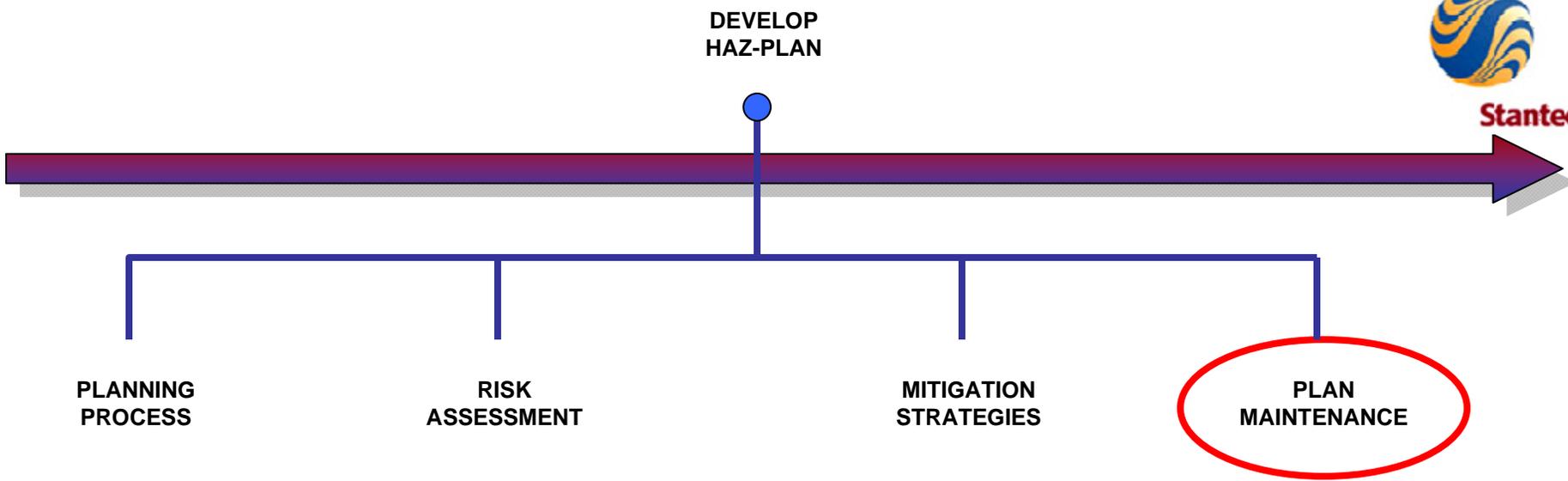


REVIEW, APPROVAL, ADOPTION

1. Draft Review
2. Incorporate Comments
3. Submit
4. Incorporate Comments
5. Finalize and Submit
6. Adoption by local municipalities Upon FEMA Approval

PUBLIC INVOLVMENT

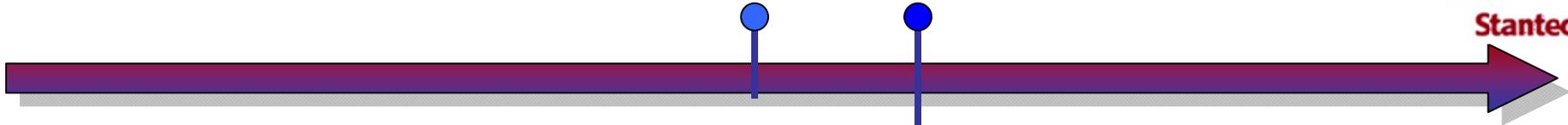
1. Awareness
2. Draft Review



- Annual Meetings
- Five-Year Plan Update
- Assess Risks
- Identify Mitigation Projects



DEVELOP HAZ-PLAN PROJECT APPLICATIONS



Community Specific
Can require engineering assessment / study
Benefit Cost Analysis



| Select | Application Section | Action |
|-------------------------------------|---------------------------------|----------------------|
| <input type="checkbox"/> | Mitigation Activity Information | View |
| <input type="checkbox"/> | Mitigation Activity Information | View |
| <input checked="" type="checkbox"/> | Hazard Information | View |
| <input type="checkbox"/> | Scope of Work | View |
| <input type="checkbox"/> | Cost Estimate | View |
| <input type="checkbox"/> | Match Sources | View |
| <input type="checkbox"/> | Cost Effectiveness Information | View |
| <input checked="" type="checkbox"/> | Evaluation Information | View |
| <input type="checkbox"/> | Comments and Attachments | View |
| <input checked="" type="checkbox"/> | Assurances and Certifications | View |
| <input checked="" type="checkbox"/> | Standard Form 424 | View |
| <input checked="" type="checkbox"/> | Comments for FEMA | View |
| <input type="checkbox"/> | Entire Application | View |

OMB Approval No. 0348-0433

| APPLICATION FOR FEDERAL ASSISTANCE | | 2. DATE SUBMITTED | Applic: |
|--|--|--|---------|
| 1. TYPE OF SUBMISSION | | | N/A |
| Application <input type="checkbox"/> Preapplication <input type="checkbox"/> | | 3. DATE RECEIVE BY STATE | State / |
| <input type="checkbox"/> Construction <input type="checkbox"/> Construction | | N/A | N/A |
| <input checked="" type="checkbox"/> Non-construction <input type="checkbox"/> Non-construction | | 4. DATE RECEIVE BY FEDERAL AGENCY | Feder: |
| | | N/A | N/A |
| 5. APPLICANT INFORMATION | | | |
| Legal Name | | Organizational Unit | |
| Address (give city, county, state, and zip code): | | Name and Telephone Number of this Application (give area code) | |

PROJECT
APPLICATIONS

PROJECT
IMPLEMENTATION



Stantec



Preventative Activities
Property Protection
Emergency Services
Structural Projects
Public Information





Each Jurisdiction must participate in the Planning Process through...

- *Representation during at least two planning meetings*
- *Submit inventory of plans, data, and reports relevant to hazard mitigation planning*
 - *GIS datasets*
 - *Capitol Improvement Plans*
 - *Growth Management Plans*
 - *Floodplain Management Plans*
 - *Zoning Ordinances*
 - *Elevation Certificates*
- *Update website by adding Mitigation Plan link*
- *Identify critical 'at risk' structures and facilities*
- *Submit a targeted list of mitigation actions*
- *Review and comment on draft plan*
- *Incorporate plan in existing planning efforts*
- *Formally adopt final plan*
- *Participate in plan maintenance*

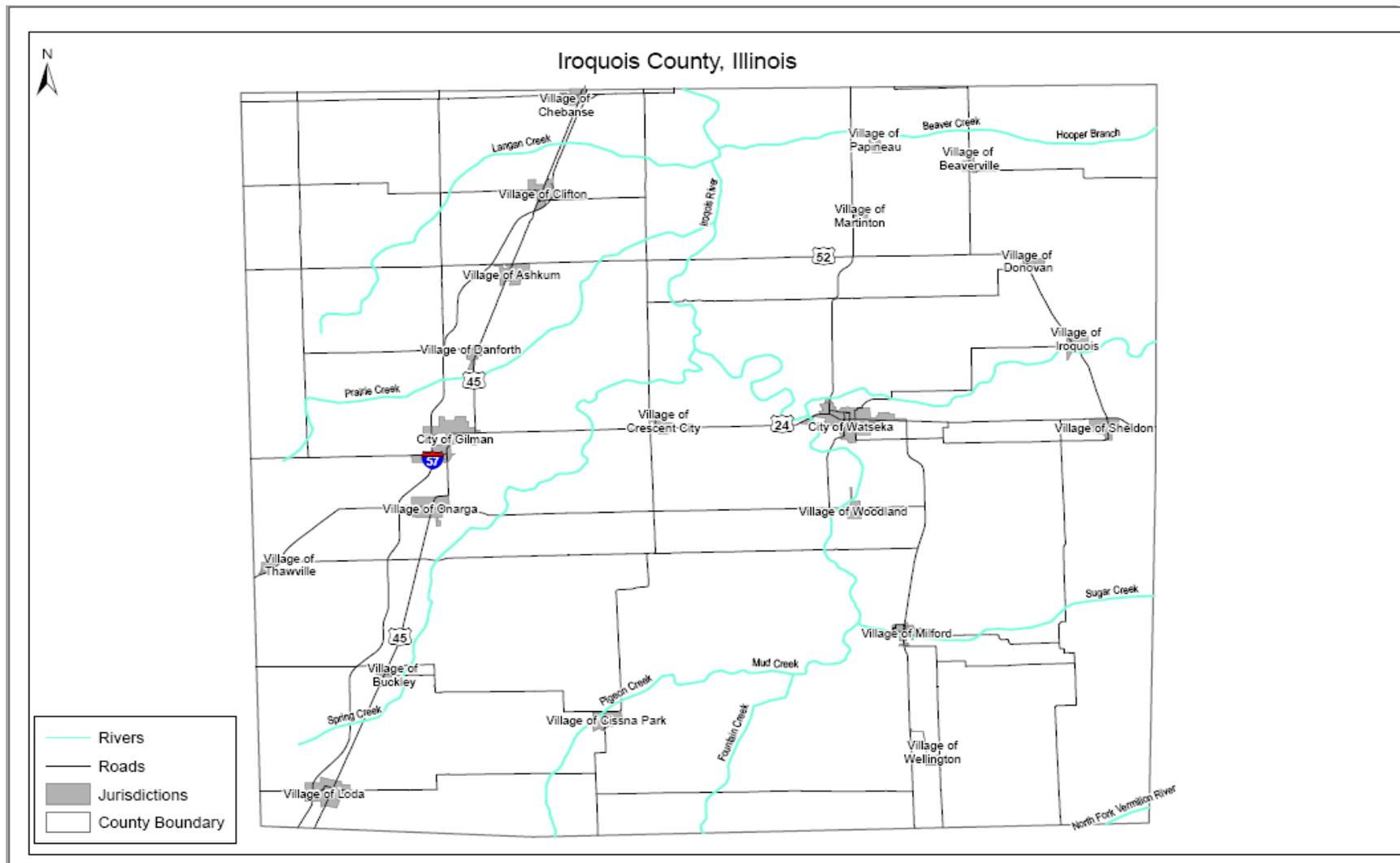
Next steps...

www.iqesda.com





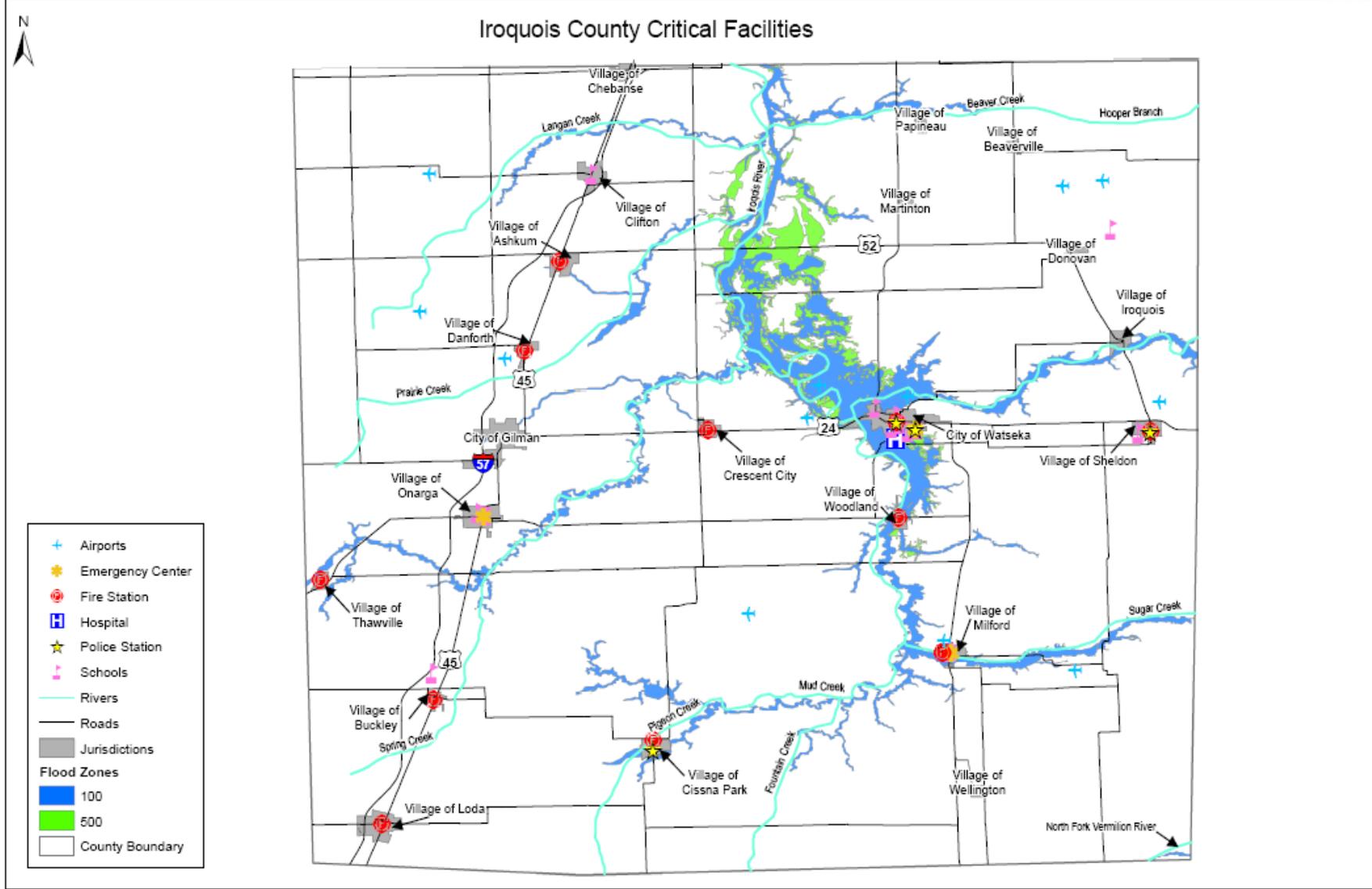
Stantec





Stantec

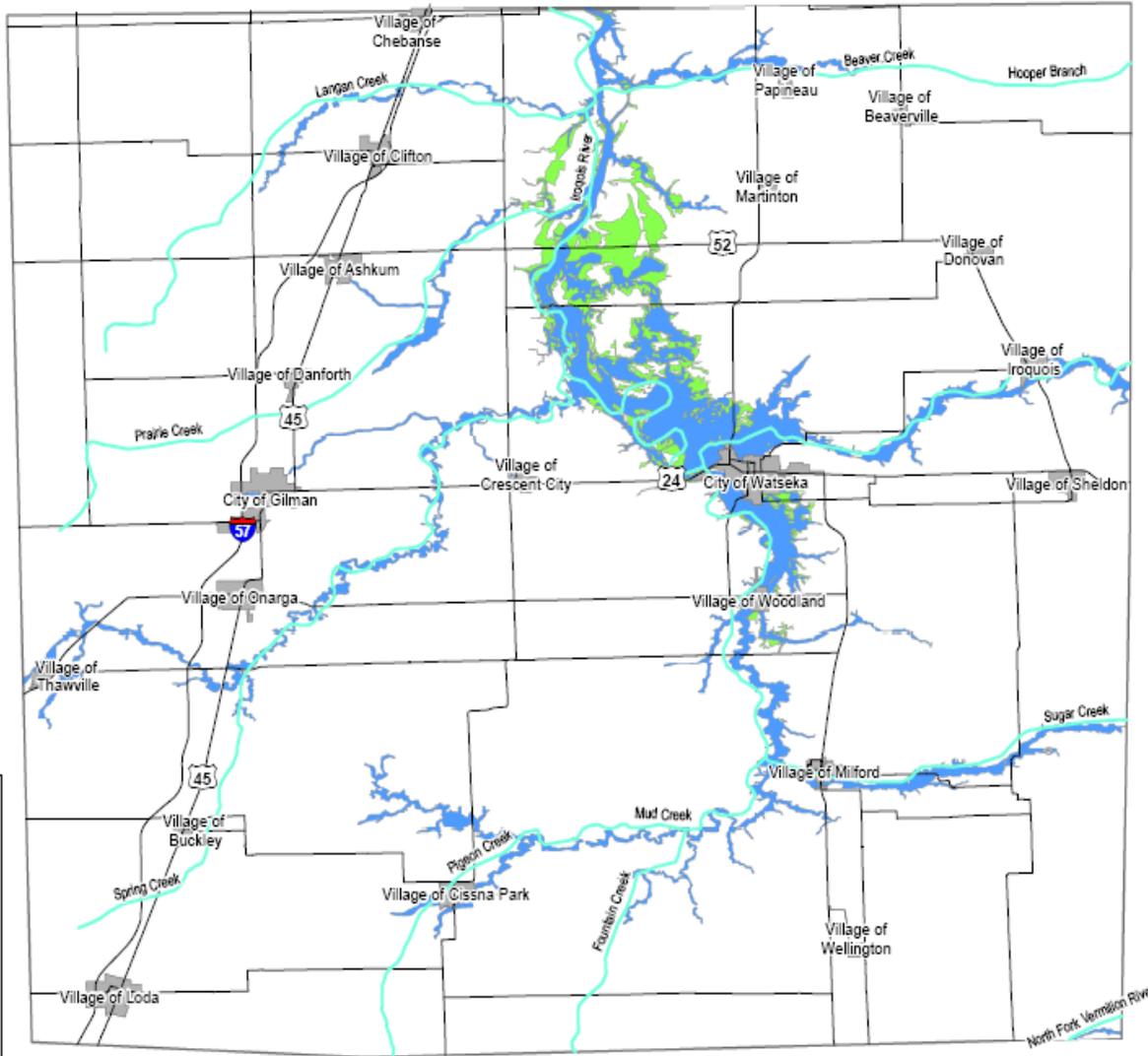
Iroquois County Critical Facilities





Stantec

Iroquois County Flood Zones



| | |
|--------------------|-----------------|
| | Rivers |
| | Roads |
| | Jurisdictions |
| Flood Zones | |
| | 100 |
| | 500 |
| | County Boundary |



Iroquois Countywide Multi- Hazard Mitigation Plan Meeting #2
Thursday, September 17, 2009, 6:00 p.m.
County Board Room at the Administrative Center
Watseka, IL 60970



Mission Statement

To protect life, property and the environment through coordination and cooperation among stakeholders, which will reduce risk and loss, and enhance the quality of life for the people of Iroquois County



Thursday, September 17, 2009





It was no trouble to walk from the roof of Don Wynn's garage to the roof of Charles Verblers house next door. More pictures on the inside pages.



Project Overview

1. Planning Process,
 - Meetings, stakeholder input, data gathering
2. Risk Assessment (Hazard Identification and Vulnerability),
 - Analyze past occurrences, probabilities, document and map.
3. Multiple Hazard Mitigation Strategy,
 - Determine strategies to reduce risk (preventative, protection, projects, education, etc)
4. Hazard Mitigation Plan Maintenance Process
 - Periodic plan monitoring, evaluating and update. Annual reviews. 5-yr updates.
5. Hazard Mitigation Plan Review, Approval and Adoption
 - Planning team, public review and council adoption.

Today's Activities

1. Share Survey Results
2. Hazard Profile Results
3. Vulnerability Assessment Results
4. Develop Mitigation Goals
5. Develop Mitigation Actions
 - New Structures / Infrastructure
 - Existing Structures / Infrastructure
6. Plan Maintenance Responsibilities
7. Review Schedule



Why Are You Here?

You are the Planning Team.

- Awareness of the process,
- Information gathering,
- Utilize your expertise,
- Local jurisdiction representation,



Planning Team Objectives:

- Provide documents
- Offer feedback
- Perform reviews
- Obtain official committee recognition,
- Understand plan process and maintenance,
- Contribute to mitigation goals,
- Update plan every 5-years.



November 5, 2019



Share Survey Results

Iroquois Countywide Multi-Hazard Mitigation Plan Survey Results

1. Please indicate where you live in Iroquois County:

| Answer Options | Response Frequency | Response Count |
|------------------------|--------------------|----------------|
| Ashkum | 1.7% | 1 |
| Beaverville | 5.2% | 3 |
| Buckley | 1.7% | 1 |
| Chebanse | 1.7% | 1 |
| Cisna Park | 3.4% | 2 |
| Clifton | 13.8% | 8 |
| Crescent City | 3.4% | 2 |
| Danforth | 1.7% | 1 |
| Donovan | 5.2% | 3 |
| Gilman | 5.2% | 3 |
| Village of Iroquois | 0.0% | 0 |
| Iroquois County | 13.8% | 8 |
| Loda | 1.7% | 1 |
| Martinton | 1.7% | 1 |
| Millford | 6.9% | 4 |
| Onarga | 0.0% | 0 |
| Papineau | 0.0% | 0 |
| Sheldon | 1.7% | 1 |
| Thriville | 0.0% | 0 |
| Watseka | 22.4% | 13 |
| Wellington | 0.0% | 0 |
| Woodland | 8.6% | 5 |
| Other (please specify) | 0.0% | 0 |
| answered question | | 58 |
| skipped question | | 1 |

November 5, 2019



One Team. Infinite Solutions.

Iroquois Countywide Multi-Hazard Mitigation Plan

... WILL PROTECT LIFE, PROPERTY AND THE ENVIRONMENT THROUGH COORDINATION AND COOPERATION AMONG STAKEHOLDERS, REDUCE RISK AND LOSS, AND ENHANCE THE QUALITY OF LIFE FOR THE PEOPLE OF IROQUOIS COUNTY.

[Kick-off Meeting](#)
[Mitigation Planning Meeting](#)
[Information Request](#)

Iroquois County continues to proactively pursue hazard mitigation activities. The County is actively coordinating with several agencies to develop a Countywide Multi-Hazard Mitigation Plan.

The Multi-Hazard Mitigation Plan will serve to identify and assess areas at risk to flooding, tornadoes, drought, earthquakes and other severe storms including ice and snow. This effort is administered by the County's Emergency Services Department and is steered by a representative committee consisting of local and state emergency managers, first responders, planning officials and other public and private business management professionals. These stakeholders will help assess local vulnerability to natural hazards while prioritizing alternatives and future projects for mitigating these risks. The public will have multiple opportunities to contribute to this effort thus making the plan that much better.

The plan will cover the entire County and incorporated jurisdictions. The County will assess all natural hazards identified in the State's Hazard Mitigation Plan in addition to transportation corridor analysis to be performed along major interstates and railroads. Historically, flooding has proven to be of major concern throughout the County and particularly, within the City of Watseka. The Iroquois River and Sugar Creek are very flood prone and regularly produce flood damage, most recently the source of Iroquois County's flood disaster declaration. The plan's intent is to assess flooding and other sources of hazards in relationship to the County's assets, critical infrastructure and population. The result will enable each community to better identify its relative risk and identify the mitigation activities that will ultimately reduce exposure to this risk.

This multi-hazard mitigation plan is a major step toward recognizing and reducing risk throughout the County. It is also a requirement to qualify for federal hazard mitigation funding. These funds may be used to help pay for projects intended to reduce local exposure to loss of life or damage of property. Examples of projects that qualify for federal funding include structure acquisition, flood proofing and more.

A brief survey has been developed to collect information from the community. By completing this survey you will be providing vital information and a local perspective about the county. These data will help tailor the plan to meet the specific needs of the county. [Take the survey](#)

For Additional Information Please Contact:
 Chad Orendovich, Plan Coordinator
orendov@iroquois.il.us (312) 422-6997
 350 South 10th Street

Survey Location:
<http://www.iqesda.com/>

Hazard Profile Results

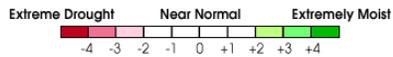
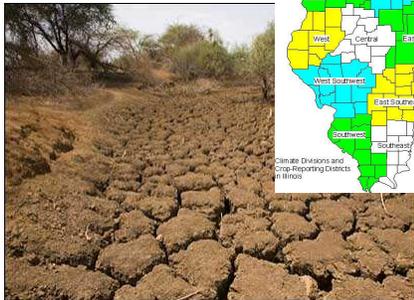
DROUGHT
EARTHQUAKE
EXTREME HEAT
FLOODING
SEVERE STORMS
SEVERE WINTER STORMS
TORNADOS
RAILROAD CORRIDORS

Researched:

National Climatic Data Center
 National Weather Service
 FEMA Map Service Center
 Illinois State Water Survey
 Illinois State Climatology Center
 Illinois State Hazard Mitigation Plan
 Local and Regional Newspapers
 Data Submitted by Residents

Hazard Profile Results

DROUGHT

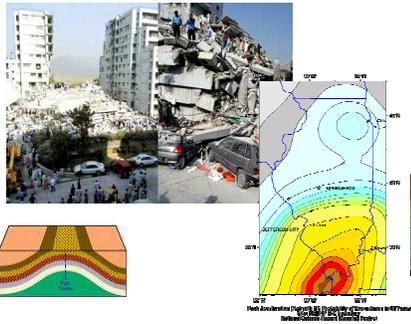


Summary of Drought Risk Factors

| | |
|--|--|
| Period of occurrence | Generally during summer months or extended periods of no precipitation. |
| Number of Events to date 1950-2009 (NCDC) | 1 |
| Annual Chance Probability | 2% |
| Warning time | Weeks |
| Potential Impact(s) | Activities that rely heavily on high water usage may be impacted significantly, including agriculture, tourism, wildlife protection, municipal water usage, commerce, recreation, and electric power generation. Droughts can lead to economic losses such as unemployment, decreased land values, and agronomic losses. Minimal risk of damage or cracking to structural foundations, due to soils. |
| Injury or Death | None Reported |
| Potential Facility Shutdown | Only facilities requiring significant water resources would be shutdown, such as water wells, water treatment plants and wastewater treatment plants. The duration would be less than the duration of the drought as it should take an extended or severe drought to impact water infrastructure. |

Hazard Profile Results

EARTHQUAKE



Summary of Earthquake Risk Factors

| | |
|---|---|
| Period of occurrence | Year round |
| Number of Events to date 1950-2009 (NCDC) | 0 |
| Annual Chance Probability | Minimal |
| Warning time | None |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can cause severe transportation problems and make travel extremely dangerous. May trigger landslides, releases of hazardous materials, and/or dam and levee failure and flooding. |
| Injury or Death | None Reported |
| Potential Facility Shutdown | Facility down time would vary depending on the severity of the earthquake and the age of the infrastructure. Duration could be minimal or several months. |

October, November 3, 2007



Hazard Profile Results

EXTREME HEAT



Summary of Extreme Heat Risk Factors

| | |
|---|--|
| Period of occurrence | Summer |
| Number of Events to-date 1950-2009 (NCDC) | 1 |
| Annual Chance Probability | 2% |
| Warning time | Several days of high temperatures hovering over 90 degrees. |
| Potential Impact(s) | Public health and safety, especially the elderly. Heavy use of water and electrical facilities due to air conditioners, fans, etc. |
| Injury or Death | 583 reported injuries throughout Northeastern Illinois. |
| Potential Facility Shutdown | No facilities are likely to require a shutdown due to extreme heat. |

October, November 3, 2007



Hazard Profile Results

FLOODING



Summary of Flood Risk Factors

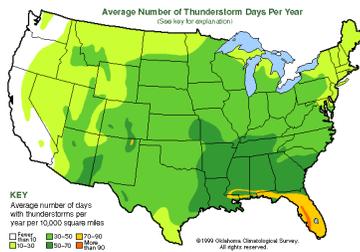
| | |
|---|--|
| Period of occurrence | Anytime, but primarily during spring/summer rains. |
| Number of Events to-date 1950-2009 (NCDC) | 23 |
| Annual Chance Probability Ratio | 39% |
| Warning time | River flooding: 3-5 days Flash flooding: minutes to hours |
| Potential Impact(s) | Potential for loss of life. Floodwaters are a public safety issue due to contaminants and pollutants. Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can lead to economic losses such as unemployment, decreased land values, and agronomic losses. |
| Injury or Death | One reported injury. |
| Potential Facility Shutdown | Weeks to months |

November 3, 2009



Hazard Profile Results

SEVERE STORMS



Summary of Severe Storms Risk Factor

| | |
|---|--|
| Period of occurrence | Spring, Summer, and Fall |
| Number of Events to-date 1950-2009 (NCDC) | Total: 128 Lightning: 3 Hail: 34 Wind: 91 |
| Annual Chance Probability | 217% |
| Warning time | Minutes to hours |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Impacts human life, health, and public safety. |
| Injury or Death | Six deaths and fourteen injuries reported. |
| Potential Facility Shutdown | Days to weeks |

November 3, 2009



Hazard Profile Results

SEVERE WINTER STORMS



Severe Winter Storms Risk Factors

| | |
|---|---|
| Period of occurrence | Winter |
| Number of Events to-date 1950-2009 (NCDC) | Total: 22 Extreme Cold/Wind Chill: 4 Heavy Snow: 6 Winter Storm: 12 |
| Annual Chance Probability | 37% |
| Warning time | Days to hours |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. May cause transportation problems and make travel extremely dangerous. Power outages, which results in loss of electrical power and potentially loss of heat, and human life. Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and prolonged exposure to cold resulting in frostbite. |
| Injury or Death | Eleven reported deaths. |
| Potential Facility Shutdown | Days |

Updated: November 3, 2009



Hazard Profile Results

TORNADOS



Summary of Tornado Risk Factors

| | |
|---|---|
| Period of occurrence | Year-round, primarily during March through August |
| Number of Events to-date 1950-2007 (NCDC) | 36 |
| Annual Chance Probability | 61% |
| Warning time | Minutes to hours. Over 80% of all tornadoes strike between noon and midnight. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. Impacts human life, health, and public safety. |
| Injury or death | Eleven injuries reported. |
| Potential facilities shutdown | Several days to several weeks. |

Updated: November 3, 2009



RISK ASSESSMENT

1. Data Gathering
2. Existing Plan Check-List
3. Existing Regulations
4. Local Mapping – GIS Base Data
5. Critical Facilities
6. Property Value Information
7. GAP Analysis and Data Augmentation
8. Discuss Assessment Techniques
9. Determine Vulnerability
10. IEMA - Coordination



Stantec November 3, 2017

Stantec

Vulnerability Assessment (concept)

Risk = Probability x Consequences.

Probability

- Past Occurrences
- Geographic Considerations

Consequences

- Structure Value
- Population
- Critical Facilities

Stantec November 3, 2017

Stantec

Iroquois County Vulnerability Ranking

| Community | Population | Hazard Risk Ranking | | | | | | | |
|--------------------------|------------|---------------------|------------|--------------|-------|---------------|----------------------|---------|-------------|
| | | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | RR Incident |
| Village of Ashkum | 724 | 7 | 7 | 6 | 4 | 9 | 8 | 9 | 7 |
| Village of Beaverville | 391 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 5 |
| Village of Buckley | 595 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 6 |
| Village of Chebanse | 689* | 8 | 6 | 5 | 4 | 8 | 7 | 7 | 6 |
| Village of Cissna Park | 812 | 7 | 7 | 6 | 4 | 9 | 8 | 9 | 8 |
| Village of Clifton | 1,317 | 8 | 8 | 7 | 4 | 10 | 9 | 10 | 10 |
| Village of Crescent City | 631 | 8 | 8 | 6 | 5 | 10 | 9 | 10 | 8 |
| Village of Danforth | 587 | 6 | 6 | 6 | 4 | 8 | 7 | 8 | 6 |
| Village of Donovan | 351 | 6 | 6 | 6 | 4 | 8 | 7 | 8 | 4 |
| City of Gilman | 1,793 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 8 |
| Village of Iroquois | 207 | 8 | 8 | 7 | 7 | 10 | 9 | 10 | 10 |
| Iroquois County (Uninc.) | 12,387 | 7 | 7 | 6 | 9 | 9 | 8 | 9 | 5 |
| Village of Loda | 419 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 5 |
| Village of Martinton | 375 | 6 | 6 | 4 | 4 | 8 | 7 | 7 | 5 |
| Village of Milford | 1,369 | 8 | 8 | 6 | 4 | 10 | 9 | 10 | 10 |
| Village of Onarga | 1,438 | 7 | 7 | 5 | 4 | 9 | 7 | 9 | 8 |
| Village of Papineau | 196 | 6 | 6 | 4 | 4 | 8 | 7 | 8 | 4 |
| Village of Sheldon | 1,232 | 6 | 6 | 4 | 4 | 8 | 7 | 8 | 8 |
| Village of Thawville | 258 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 4 |
| City of Watseka | 5,670 | 8 | 8 | 7 | 10 | 10 | 9 | 10 | 10 |
| Village of Wellington | 263 | 6 | 6 | 5 | 4 | 8 | 7 | 8 | 4 |
| Village of Woodland | 319 | 6 | 6 | 5 | 9 | 8 | 7 | 8 | 4 |



Vulnerability Assessment

Historical Consequences & Future Probability

| |
|--|
| 0 to 6 events in last 57 years = 1 |
| 7 to 27 events in last 57 years = 2 |
| 28 or more events in last 57 years = 3 |

Exposed Assets

| |
|---|
| Less than \$1 million exposed = 1 |
| Between \$1 and \$5 million exposed = 2 |
| More than \$5 million exposed = 3 |

Critical Facilities

| |
|---|
| 0 to 3 critical facilities exposed = 1 |
| 4 to 6 critical facilities exposed = 2 |
| 7 or more critical facilities exposed = 3 |

Community Population

| |
|---------------------------------------|
| 0% to 10% of population exposed = 1 |
| 10% to 25% of population exposed = 2 |
| 25% or more of population exposed = 3 |

Rating

| |
|-------------------|
| <5 = Low |
| 5 to 6 = Guarded |
| 7 to 8 = Elevated |
| 9 to 10 = High |
| 11 to 12 = Severe |



Table 18. Iroquois County Event Probability Weighting

| Jurisdiction | Hazard Risk Ranking | | | | | | | |
|--------------------------|---------------------|------------|--------------|--------|---------------|----------------------|---------|-------------|
| | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | RR Incident |
| Village of Ashkum | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Beaverville* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Buckley* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Chebanse* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Cissna Park | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Clifton* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Crescent City | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Danforth* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Donovan* | Low | Low | Low | Low | High | Medium | High | Low |
| City of Gilman | Low | Low | Low | Low | High | Medium | High | Low |
| Iroquois County (Uninc.) | Low | Low | Low | Medium | High | Medium | High | Low |
| Village of Iroquois | Low | Low | Low | Medium | High | Medium | High | Low |
| Village of Loda* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Martinton* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Milford | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Onarga* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Papineau* | Low | Low | Low | Low | High | Medium | High | Low |
| Village of Sheldon* | Low | Low | Low | Low | High | Medium | High | Low |

0 to 6 events in last 57 years = 1
 7 to 27 events in last 57 years = 2
 28 or more events in last 57 years = 3



Table 19. Jurisdictional Fiscal Vulnerability by Hazard

| Jurisdiction | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|------------|--------------|--------|---------------|---------------------|---------|-------------|
| Village of Ashkum | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Beaverville* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Buckley* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Chebanse* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Cissna Park | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Clifton* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Crescent City | Low | Low | Low | Medium | Low | Low | Low | Medium |
| Village of Danforth* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Donovan* | Low | Low | Low | Low | Low | Low | Low | Medium |
| City of Gilman | Low | Low | Low | Low | Low | Low | Low | Medium |
| Iroquois County (Uninc.) | Low | Low | Low | Medium | Low | Low | Low | High |
| Village of Iroquois | Low | Low | Low | High | Low | Low | Low | Low |
| Village of Loda* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Martinton* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Milford | Low | Low | Low | Low | Low | Low | Low | High |
| Village of Onarga* | Low | Low | Low | Low | Low | Low | Low | Medium |
| Village of Papineau* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Sheldon* | Low | Low | Low | Low | Low | Low | Low | High |
| Village of Thawville* | Low | Low | Low | Low | Low | Low | Low | Low |
| City of Watseka | Low | Low | Low | High | Low | Low | Low | High |
| Village of Wellington* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of | Low | Low | Low | High | Low | Low | Low | Medium |

Less than \$1 million exposed = 1
 Between \$1 and \$5 million exposed = 2
 More than \$5 million exposed = 3



Table 30. Critical Infrastructure Exposure by Hazard and Jurisdiction

| Jurisdiction | Drought | Earth-quake | Extreme Heat | Flood | Severe Storm | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|-------------|--------------|--------|--------------|---------------------|---------|-------------|
| Village of Ashkum | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Beaverville* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Buckley* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Chebanse* | High | High | High | Low | High | High | High | High |
| Village of Cissna Park | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Clifton* | High | High | High | Low | High | High | High | High |
| Village of Crescent City | High | High | High | Low | High | High | High | High |
| Village of Danforth* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Donovan* | Low | Low | Low | Low | Low | Low | Low | Low |
| City of Gilman | Low | Low | Low | Low | Low | Low | Low | Low |
| Iroquois County (Uninc.) | High | High | High | Medium | High | High | High | High |
| Village of Iroquois | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Loda* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Martinton* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Milford | High | High | High | Low | High | High | High | High |
| Village of Onarga* | Medium | Medium | Medium | Low | Medium | Medium | Medium | Medium |
| Village of Papineau* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Sheldon* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Thawville* | Low | Low | Low | Low | Low | Low | Low | Low |
| City of Watseka | High | High | High | High | High | High | High | High |
| Village of Wellington* | Low | Low | Low | Low | Low | Low | Low | Low |
| Village of Woodland | Low | Low | Low | Low | Low | Low | Low | Low |

0 to 3 critical facilities exposed = 1

4 to 6 critical facilities exposed = 2

7 or more critical facilities exposed = 3



Table 31. Population Exposure by Hazard and Jurisdiction

| Jurisdiction | Drought | Earth-quake | Extreme Heat | Flood | Severe Storm | Severe Winter Storm | Tornado | RR Incident |
|--------------------------|---------|-------------|--------------|--------|--------------|---------------------|---------|-------------|
| Village of Ashkum | High | High | Medium | Low | High | High | High | Medium |
| Village of Beaverville* | High | High | Medium | Low | High | High | High | Low |
| Village of Buckley* | High | High | Medium | Low | High | High | High | Medium |
| Village of Chebanse* | High | High | Medium | Low | High | High | High | Medium |
| Village of Cissna Park | High | High | Medium | Low | High | High | High | Medium |
| Village of Clifton* | High | High | Medium | Low | High | High | High | High |
| Village of Crescent City | High | High | Low | Low | High | High | High | Medium |
| Village of Danforth* | High | High | High | Low | High | High | High | Medium |
| Village of Donovan* | High | High | High | Low | High | High | High | Low |
| City of Gilman | High | High | Medium | Low | High | High | High | High |
| Iroquois County (Uninc.) | High | High | Medium | High | High | High | High | High |
| Village of Iroquois | High | High | Medium | Low | High | High | High | Low |
| Village of Loda* | High | High | Medium | Low | High | High | High | Low |
| Village of Martinton* | High | High | Low | Low | High | High | High | Low |
| Village of Milford | High | High | Low | Low | High | High | High | High |
| Village of Onarga* | High | High | Low | Low | High | High | High | High |
| Village of Papineau* | High | High | Low | Low | High | High | High | Low |
| Village of Sheldon* | High | High | Low | Low | High | High | High | High |
| Village of Thawville* | High | High | Medium | Low | High | High | High | Low |
| City of Watseka | High | High | Medium | High | High | High | High | High |
| Village of Wellington* | High | High | Medium | Low | High | High | High | Low |
| Village of Woodland | High | High | Medium | Medium | High | High | High | High |

0% to 10% of population exposed = 1

10% to 25% of population exposed = 2

25% or more of population exposed = 3



Develop Mitigation Actions

Specific actions that are measurable and promote goals.

Consider existing actions previously developed. Site plan or ordinance.

Consider new proposed actions.

Mitigation Goals:

1.Preventative Activities. Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.

2.Property Protection. Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofiting.

3.Emergency Services. Reduce impacts through response and recovery activities that are implemented during a disaster.

4.Structural Projects. Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.

5.Public Information. Assist residents to prepare for risks and protective measures to better protect themselves and their property.

Community Name: _____ Contact Name: _____ Contact Phone No: _____

Mitigation Goals:

- Preventative Activities.** Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.
- Property Protection.** Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofiting.
- Emergency Services.** Reduce impacts through response and recovery activities that are implemented during a disaster.
- Structural Projects.** Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.
- Public Information.** Assist residents to prepare for risks and protective measures to better protect themselves and their property.

Other: _____

| Item Number | Goal Number | Mitigation Action | Responsible Agency & Contact Person | Funding Source | Timeline | Estimated Benefits† | Estimated Costs† |
|-------------|-------------|--|---|----------------------|----------|---------------------|------------------|
| Example | 2 | Purchase homes in the 100 year floodplain and convert the space to a park or greenspace to reduce flood impacts. | County Planning Department - Ed Jones, Director | General funds or TBD | 5 years | Medium | Medium |
| 1. | 4 | Update infrastructure | St. Hwy | TBD | 5 years | High | High |

† Benefits and Costs estimates should be based on these categories:
 \$0-\$100,000 = Low
 \$100,000 - \$500,000 = Medium
 More than \$500,000 = High

Worksheet

- Preventative Activities.** Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.
- Property Protection.** Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofiting.
- Emergency Services.** Reduce impacts through response and recovery activities that are implemented during a disaster.
- Structural Projects.** Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.
- Public Information.** Assist residents to prepare for risks and protective measures to better protect themselves and their property.

| Item Number | Goal Number | Mitigation Action | Responsible Agency & Contact Person | Funding Source | Timeline | Estimated Benefits† | Estimated Costs† |
|-------------|-------------|--|-------------------------------------|----------------------|----------|---------------------|------------------|
| Example | 2 | Purchase homes in the 100 year floodplain and convert the space to a park or greenspace to reduce flood impacts. | County Planning Department Director | General funds or TBD | 5 years | Medium | Medium |
| 1. | 4 | Update infrastructure | St. Hwy | TBD | 5 years | High | High |

Less than \$100,000 = Low
 \$100,000 - \$500,000 = Medium
 More than \$500,000 = High

Plan Maintenance Responsibilities

1. Schedule for Monitoring Plan
 - Planning committee meets annually.
2. Plan is Updated Every 5 Years
 - Planning committee coordinates
 - Contractor supported
 - FEMA funded.



Documents and Resources



The screenshot shows the Iroquois County ESDA website. The header includes the title "Iroquois County ESDA" and the subtitle "THE OFFICIAL IROQUOIS COUNTY EMERGENCY SERVICES WEB SITE". A navigation menu contains links for HOME, ABOUT ESDA, CONTACT US, EVENTS, FLOOD RESOURCES, and MITIGATION PLAN. The main content area features a green banner for "Iroquois County Mitigation Meeting September 17th", posted by Carl Gerdevich on September 15, 2009. The text of the article invites community leaders and the public to a meeting on Thursday, September 17th, at 6 pm in the County Board Room at the Administrative Center in Watseka. It mentions that a FEMA-APPROVED hazard mitigation plan will be discussed, and that Stantec, the consulting firm hired for the plan, will discuss results of the risk analysis and mitigation strategies. Contact information for the ESDA and Zoning Office is provided at the bottom of the article.

<http://www.iqesda.com/>



Iroquois County Countywide Multi-Hazard Mitigation Plan

Meeting #3

Wednesday, May 5, 2010 6:30 p.m.

County Board Room at the Administrative Center

Watseka, IL 60970

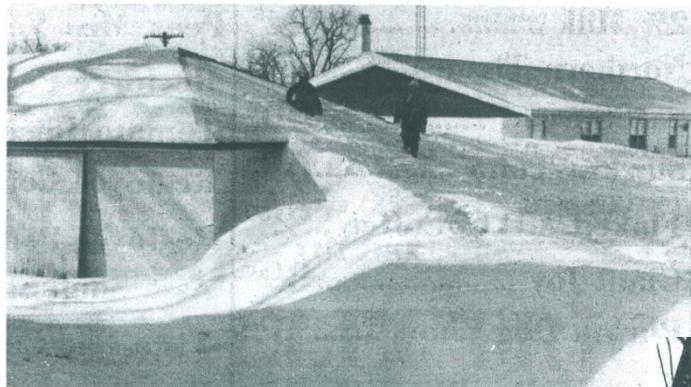


Mission Statement

To protect life, property and the environment through coordination and cooperation among stakeholders, which will reduce risk and loss, and enhance the quality of life for the people of Iroquois County



Project Overview



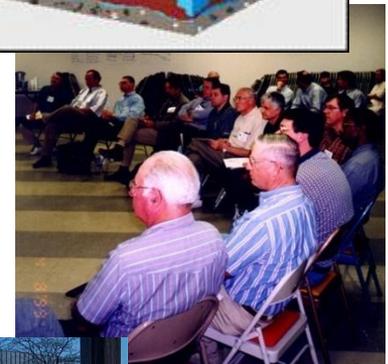
It was no trouble to walk from the roof of Don Wyss's garage to the roof of Charles Verlders house door. More pictures on the inside pages.

1. Planning Process,
 - Meetings, stakeholder input, data gathering
2. Risk Assessment (Hazard Identification and Vulnerability),
 - Analyze past occurrences, probabilities, document and map.
3. Multiple Hazard Mitigation Strategy,
 - Determine strategies to reduce risk (preventative, protection, projects, education, etc)
4. Hazard Mitigation Plan Maintenance Process
 - Periodic plan monitoring, evaluating and update. Annual reviews. 5-yr updates.
5. Hazard Mitigation Plan Review, Approval and Adoption
 - Committee, advisory group, public review and council adoption.



Today's Activities

1. Review Risk Assessment
Hazard Profiles
Vulnerability Assessment
2. Mitigation Actions
3. Adoption Process
4. Grant Funding/Projects
5. Plan Maintenance Responsibilities



Vulnerability Assessment

Historical Consequences and Future Probability

| |
|--|
| 0 to 6 events in last 57 years = 1 |
| 7 to 27 events in last 57 years = 2 |
| 28 or more events in last 57 years = 3 |

Exposed Assets

| |
|---|
| Less than \$1 million exposed = 1 |
| Between \$1 and \$5 million exposed = 2 |
| More than \$5 million exposed = 3 |

Critical Facilities

| |
|---|
| 0 to 3 critical facilities exposed = 1 |
| 4 to 6 critical facilities exposed = 2 |
| 7 or more critical facilities exposed = 3 |

Population

| |
|---|
| 0% to 10% of community population exposed = 1 |
| 10% to 25% of community population exposed = 2 |
| 25% or more of community population exposed = 3 |

Rating

| |
|-------------------|
| <5 = Low |
| 5 to 6 = Guarded |
| 7 to 8 = Elevated |
| 9 to 10 = High |
| 11 to 12 = Severe |

Iroquois County Vulnerability Ranking

| Community | Population | Hazard Risk Ranking | | | | | | | |
|--------------------------|------------|---------------------|------------|--------------|-------|---------------|----------------------|---------|-------------|
| | | Drought | Earthquake | Extreme Heat | Flood | Severe Storms | Severe Winter Storms | Tornado | RR Incident |
| Village of Ashkum | 724 | 7 | 7 | 7 | 6 | 8 | 10 | 11 | 8 |
| Village of Beaverville | 391 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Buckley | 595 | 7 | 7 | 7 | 4 | 11 | 10 | 11 | 8 |
| Village of Chebanse | 689* | 8 | 8 | 8 | 4 | 12 | 11 | 12 | 9 |
| Village of Cissna Park | 812 | 7 | 7 | 7 | 6 | 11 | 10 | 11 | 9 |
| Village of Clifton | 1,317 | 9 | 8 | 9 | 4 | 12 | 11 | 12 | 10 |
| Village of Crescent City | 631 | 7 | 7 | 7 | 6 | 11 | 10 | 11 | 8 |
| Village of Danforth | 587 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Donovan | 351 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 6 |
| City of Gilman | 1,793 | 8 | 7 | 8 | 7 | 11 | 10 | 11 | 9 |
| Village of Iroquois | 207 | 6 | 6 | 6 | 5 | 10 | 8 | 9 | 6 |
| Iroquois County (Uninc.) | 12,387 | 10 | 8 | 10 | 10 | 12 | 11 | 12 | 9 |
| Village of Loda | 419 | 6 | 6 | 6 | 4 | 10 | 9 | 10 | 7 |
| Village of Martinton | 375 | 6 | 6 | 6 | 4 | 10 | 8 | 10 | 7 |
| Village of Milford | 1,369 | 7 | 7 | 7 | 5 | 11 | 10 | 11 | 9 |
| Village of Onarga | 1,438 | 7 | 7 | 7 | 4 | 11 | 10 | 11 | 8 |
| Village of Papineau | 196 | 6 | 6 | 6 | 4 | 10 | 8 | 9 | 6 |
| Village of Sheldon | 1,232 | 7 | 7 | 7 | 5 | 11 | 10 | 11 | 9 |
| Village of Thawville | 258 | 6 | 6 | 6 | 4 | 10 | 8 | 9 | 6 |
| City of Watseka | 5,670 | 9 | 8 | 9 | 11 | 12 | 11 | 12 | 10 |
| Village of Wellington | 263 | 8 | 8 | 8 | 4 | 12 | 10 | 11 | 8 |
| Village of Woodland | 319 | 6 | 6 | 6 | 10 | 10 | 8 | 9 | 7 |

Develop Mitigation Actions

Specific actions that are measurable and promote goals.

Consider new proposed actions.

Mitigation Goals:

1.Preventative Activities. Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.

2.Property Protection. Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofitting.

3.Emergency Services. Reduce impacts through response and recovery activities that are implemented during a disaster.

4.Structural Projects. Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.

5.Public Information. Assist residents to prepare for risks and protective measures to better protect themselves and their property.

Community Name: _____ Contact Name: _____ Contact Phone No.: _____

Mitigation Goals:

1. **Preventative Activities.** Reduce risks through regulations including building codes, development outside of hazardous areas, and local planning or capital improvement projects.
2. **Property Protection.** Reduce exposure to hazards through building or parcel specific activities such as flood proofing, structure acquisition, or retrofitting.
3. **Emergency Services.** Reduce impacts through response and recovery activities that are implemented during a disaster.
4. **Structural Projects.** Minimize impacts through projects, such as detention basins, tornado shelters, tornado sirens, etc.
5. **Public Information.** Assist residents to prepare for risks and protective measures to better protect themselves and their property.
6. **Other** _____
7. **Other** _____

| Item Number | Goal Number | Mitigation Action | Responsible Agency & Contact Person | Funding Source | Implementation Timeline | Estimated Benefits ¹ | Estimated Costs ¹ |
|-------------|-------------|--|--|---|-------------------------|---------------------------------|------------------------------|
| Example | 2 | Purchase homes in the 100 year floodplain and convert the space to a park or greenspace to reduce flood impacts. | County Planning Department - Bob Jones, Director | Hazard Mitigation Grant Program & General Funds | 5 years | Medium | Medium |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |

¹ Benefits and Costs estimates should be based on these categories:
 Less than \$100,000 = Low
 \$100,000 - \$500,000 = Medium
 More than \$500,000 = High

Submitted Mitigation Actions

- Improve weather siren system
- Upgrade emergency service equipment
- **Remove abandoned/unused buildings**
- Create central locations with power and emergency supplies
- **Educate residents regarding emergency preparedness**
- Improve the storm water drainage system
- Build an overpass over railroad tracks
- Raise the road grade in flood hazard areas
- Separate storm and sanitary sewers
- **Purchase flood-prone properties and remove the buildings**
- **Build a retention basin**
- Provide citizens with weather alert radios

Approval and Adoption Process

- Submittal to IEMA for review and comments - June 1
 - Incorporate comments, as necessary
- IEMA recommends approval by FEMA and forwards the plan to FEMA Region V
- FEMA review and comment
 - Incorporate comments, as necessary
- FEMA conditionally accepts plan, pending community adoption - September 1
- Each community adopts a resolution recognizing the plan and incorporating it into future planning efforts - November 1



FEMA

Plan Maintenance Responsibilities

1. Schedule for Monitoring Plan
 - Planning committee meets annually.
2. Plan is Updated Every 5 Years
 - Planning committee coordinates
 - Contractor supported
 - FEMA funded.



Mitigation Activity Funding Programs

| Eligible Activities | HMGP | PDM | FMA | RFC | SRL |
|--|------|-----|-----|-----|-----|
| 1. Mitigation Projects | √ | √ | √ | √ | √ |
| Property Acquisition and Structure Demolition | √ | √ | √ | √ | √ |
| Property Acquisition and Structure Relocation | √ | √ | √ | √ | √ |
| Structure Elevation | √ | √ | √ | √ | √ |
| Mitigation Reconstruction | | | | | √ |
| Dry Floodproofing of Historic Residential Structures | √ | √ | √ | √ | √ |
| Dry Floodproofing of Non-residential Structures | √ | √ | √ | √ | |
| Minor Localized Flood Reduction Projects | √ | √ | √ | √ | √ |
| Structural Retrofitting of Existing Buildings | √ | √ | | | |
| Non-structural Retrofitting of Existing Buildings and Facilities | √ | √ | | | |
| Safe Room Construction | √ | √ | | | |
| Infrastructure Retrofit | √ | √ | | | |
| Soil Stabilization | √ | √ | | | |
| Wildfire Mitigation | √ | √ | | | |
| Post-Disaster Code Enforcement | √ | | | | |
| 5% Initiative Projects | √ | | | | |
| 2. Hazard Mitigation Planning | √ | √ | √ | | |
| 3. Management Costs | √ | √ | √ | √ | √ |

Hazard Mitigation Grant Program

- Purpose:
 - Cost effective and long-term mitigation measures following a **major disaster declaration (funding competitive within State)**
- Requirements:
 - Must be in good standing with NFIP.
 - Have an approved all-hazard mitigation plan.
- The amount of funding is based on a percentage of the total disaster costs and varies from disaster to disaster.
- A project does not have to be in a declared county to be eligible for HMGP funding. Projects must be environmentally sound, cost-effective, solve a problem and prevent future disaster damages.
- Projects can protect public or private property.
- Cost share: 75% Federal, 25% Local

IEMA Mitigation Activity Prioritization

- Priority is given to communities:
 - With approved hazard mitigation plans.
 - Participating in NFIP and are unsanctioned.
 - With the highest vulnerability.
 - Participating in a multi-jurisdictional planning effort.
 - With an approved hazard mitigation plan.
 - With access to GIS and planning resources.
 - Which will conduct a planning process.
- Priority is given to projects that:
 - Mitigate against the loss of human life over property loss.
 - Mitigate critical facilities, which are substantially at-risk.
 - Provide the highest benefit/cost ratio.
 - Utilize the STAPLEE process (Social, Technical, Administrative, Political, Legal, Economic, Environmental)

Pre-Disaster Mitigation Program

- Purpose:
 - Implement cost-effective hazard mitigation activities that complement a comprehensive mitigation program.
- Requirements:
 - Must have an approved all hazards plan
 - Must participate in NFIP and have Special Flood Hazard Area (Flood Hazard Boundary Map (FHBM) or Flood Insurance Rate Map (FIRM) has been issued.
 - Must not be suspended or on probation from the NFIP.
- Funding can be awarded for the development of all-hazards mitigation plan or for cost effective hazard mitigation project.
- Cost share: 75% Federal, 25% Local

Flood Mitigation Assistance Program

- Purpose:
 - Implementation of Flood Mitigation Projects
- Requirements:
 - Must belong to the National Flood Insurance Program (NFIP)
- Typically these grants are used for acquisition and demolition of repetitively flooded structures.
 - A repetitive loss property is any insured structure that has two or more flood insurance claims of at least \$1,000 each.
- Cost share: 75% Federal, 25% Local

Repetitive Flood Claims Program

- Purpose:
 - Reduce or eliminate the long-term risk of flooding damage to repetitive loss structures insured under the NFIP.
- Requirements:
 - Property has received one or more NFIP payment.
 - Property must be NFIP-insured and must maintain insurance through completion of the activity.
- Cost share: 100% Federal
 - Applicant must explain why the local match is unavailable.

Severe Repetitive Loss Program

- Purpose:
 - Reduce or eliminate the long-term risk of flooding damage to severe repetitive loss (SRL) structures insured under the NFIP.
- Requirements:
 - Property is residential and is insured under the NFIP and has either:
 - At least four NFIP claims (building and contents) over \$5,000 each, with the cumulative amount greater than \$20,000; or
 - At least two separate claims payments (building payments only), with the cumulative amount exceeding the market value of the building.
- SRL payments will assist in the conversion of the property to open space, the elevation of the property above the BFE, and dry floodproofing for historic structures.
- Cost share: 90% Federal, 10% Local

Other State Agency Funding Opportunities

Community Development Block Grants

Funding and Administration:

- Department of Commerce and Economic Opportunity
- Housing and Urban Development

Eligible Activities:

- New or expanding water or sewer systems

Ineligible Activities:

- Design engineering costs of water storage tanks/towers.
- Construction of buildings, or portions used predominantly for the general conduct of government.
- General government expenses.
- Costs of operating and maintaining public facilities and services (mowing parks, replacing street light bulbs).
- Servicing or refinancing of existing debt.

Other Federal Funding Opportunities

Economic Development Administration

Programs:

Public Works and Economic Development

Economic Adjustment and Assistance Program

Community Trade Adjustment Assistance

Planning Program

Trade Adjustment Assistance for Firm Program

Local Technical Assistance

Documents and Resources

The screenshot shows the Iroquois County ESDA website. The header is blue with the text "Iroquois County ESDA" and "THE OFFICIAL IROQUOIS COUNTY EMERGENCY SERVICES WEB SITE". A search bar is in the top right. Below the header is a navigation menu with orange buttons for "HOME", "ABOUT ESDA", "CONTACT US", "EVENTS", "FLOOD RESOURCES", and "MITIGATION PLAN". The main content area has a green banner for "Iroquois County Mitigation Meeting September 17th". Below the banner, it says "Posted by Carl Gerdovich" and "September 15, 2009". The article text reads: "Community leaders, township officials and the public are invited to Iroquois County's Mitigation Planning Meeting *Thursday, September 17th*. The *6 pm* meeting is being held in the County Board Room at the Administrative Center in Watseka. Stakeholders who attended the mitigation plan kick-off meeting in April will learn about the next steps in advancing toward a FEMA-APPROVED hazard mitigation plan. Stantec, the consulting firm hired to direct efforts in the plan, will discuss results of the risk analysis and mitigation strategies to minimize exposure of the identified hazards. These strategies will ultimately serve as the action plan to reduce or avoid long-term vulnerabilities to hazards identified throughout the county. Community input remains vital to ensure all vulnerable areas and potential county hazards are identified. Questions can be directed to the office of Emergency Services and Disaster Agency (ESDA) 815-432-6997 or the Iroquois County Zoning Office 815-432-6995." On the right side, there is a vertical list of links: "Equi Vacc Trus", "Spyn Free Rate", "Imm 4 Co Prov", "Get Safe or St Nature", and "Popula".

Iroquois County ESDA
THE OFFICIAL IROQUOIS COUNTY EMERGENCY SERVICES WEB SITE

HOME ABOUT ESDA CONTACT US EVENTS FLOOD RESOURCES MITIGATION PLAN

Iroquois County Mitigation Meeting September 17th

Posted by **Carl Gerdovich** September 15, 2009

Community leaders, township officials and the public are invited to Iroquois County's Mitigation Planning Meeting *Thursday, September 17th*. The *6 pm* meeting is being held in the County Board Room at the Administrative Center in Watseka. Stakeholders who attended the mitigation plan kick-off meeting in April will learn about the next steps in advancing toward a FEMA-APPROVED hazard mitigation plan.

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Community input remains vital to ensure all vulnerable areas and potential county hazards are identified. Questions can be directed to the office of Emergency Services and Disaster Agency (ESDA) 815-432-6997 or the Iroquois County Zoning Office 815-432-6995.

Equi Vacc Trus
Spyn Free Rate
Imm 4 Co Prov
Get Safe or St Nature
Popula

<http://www.iqesda.com/>

IEMA Hazard Mitigation Website

www.state.il.us/iema

Pat Quinn, Governor

HOME ABOUT CONTACT

Quick Nav: « Select Location »

Select Language

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Mitigation

What is hazard mitigation? Plainly stated, hazard mitigation is any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.

The mission of the Illinois Mitigation Program is to identify hazards that affect Illinois, assess how vulnerable Illinois is to each hazard, and then implement a strategy for mitigating the effects of the hazard.

The program is intended to:

- Provide the framework for hazard mitigation not only during the recovery and reconstruction process, but also on a year-round basis.
- Identify mitigation projects that will reduce the potential for future losses and decrease the cost to taxpayers.
- Provide education to the public on mitigation methods and offer assistance to local jurisdictions that are eligible for mitigation projects.
- Assist all Illinois jurisdictions in completing a Disaster Mitigation Act of 2000 compliant plan.

This website is not only an introduction to hazard mitigation in Illinois, but also a planning tool for those communities that wish to implement a program in their jurisdiction.

[Mitigation Planning](#)

[Mitigation Programs](#)

[Hazard Information](#)

[Mitigation Links](#)

Questions or Comments? Public involvement is encouraged and your input is greatly appreciated. If you would like to send us a comment, please contact [Ron Davis](#) by email or phone (217-782-8719).

Now accepting Pre-Applications. For more information please [click here](#).

The Illinois Emergency Management Agency is currently updating the Illinois Natural Hazard Mitigation Plan. This is the State's plan to reduce the harm natural disasters cause individuals and property. Comments and input on the plan from the general public are always welcome, especially during updates, and can be submitted to the State Hazard Mitigation Officer at Ron.Davis@illinois.gov.

The 2007 Hazard Mitigation Plan can be viewed by [clicking here](#) (22M).

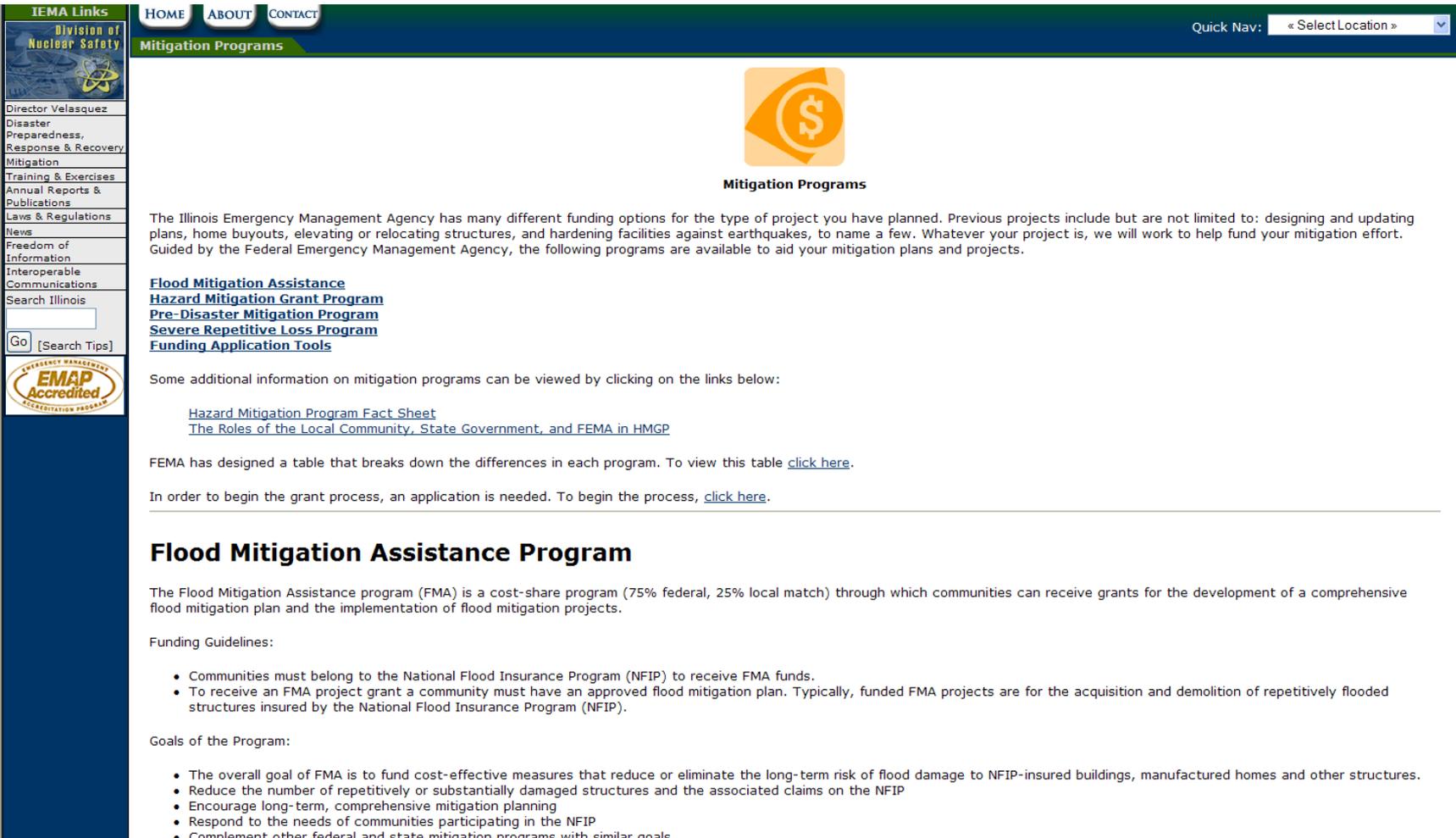
The next State Hazard Mitigation Plan Meeting will be held on March 18th. [Click here](#) for the Agenda.

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<http://www.state.il.us/iema/planning/planning.htm>

IEMA Mitigation Program Webpage



The screenshot shows the IEMA Mitigation Program Webpage. At the top, there is a navigation bar with 'HOME', 'ABOUT', and 'CONTACT' links. Below this is a 'Quick Nav' dropdown menu set to '« Select Location »'. The main content area features a large orange icon of a dollar sign inside a circle, with the text 'Mitigation Programs' below it. The text describes various funding options for mitigation projects, including designing and updating plans, home buyouts, and hardening facilities. A list of links is provided: Flood Mitigation Assistance, Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Severe Repetitive Loss Program, and Funding Application Tools. Below the links, there is a section for additional information, including a link to a 'Hazard Mitigation Program Fact Sheet' and a table of differences between programs. The page also includes a search bar, a sidebar with 'IEMA Links' and 'EMAP Accredited' logo, and a right sidebar with various logos and social media links.

IEMA Links
Division of Nuclear Safety
Director Velasquez
Disaster Preparedness, Response & Recovery
Mitigation
Training & Exercises
Annual Reports & Publications
Laws & Regulations
News
Freedom of Information
Interoperable Communications
Search Illinois
Go [Search Tips]

EMAP Accredited
EMERGENCY MANAGEMENT ACCREDITATION PROGRAM

HOME ABOUT CONTACT
Mitigation Programs

Quick Nav: « Select Location »

Select Language

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Mitigation
Mitigation Planning
Mitigation Programs
Hazard Information
Mitigation Links

Illinois Terrorism Task Force
State of Illinois READY ILLINOIS
From The U.S. Department of Homeland Security
READY.GOV
Homeland Security
NIMS
Find IEMA on Facebook

Mitigation Programs

The Illinois Emergency Management Agency has many different funding options for the type of project you have planned. Previous projects include but are not limited to: designing and updating plans, home buyouts, elevating or relocating structures, and hardening facilities against earthquakes, to name a few. Whatever your project is, we will work to help fund your mitigation effort. Guided by the Federal Emergency Management Agency, the following programs are available to aid your mitigation plans and projects.

[Flood Mitigation Assistance](#)
[Hazard Mitigation Grant Program](#)
[Pre-Disaster Mitigation Program](#)
[Severe Repetitive Loss Program](#)
[Funding Application Tools](#)

Some additional information on mitigation programs can be viewed by clicking on the links below:

[Hazard Mitigation Program Fact Sheet](#)
[The Roles of the Local Community, State Government, and FEMA in HMGP](#)

FEMA has designed a table that breaks down the differences in each program. To view this table [click here](#).

In order to begin the grant process, an application is needed. To begin the process, [click here](#).

Flood Mitigation Assistance Program

The Flood Mitigation Assistance program (FMA) is a cost-share program (75% federal, 25% local match) through which communities can receive grants for the development of a comprehensive flood mitigation plan and the implementation of flood mitigation projects.

Funding Guidelines:

- Communities must belong to the National Flood Insurance Program (NFIP) to receive FMA funds.
- To receive an FMA project grant a community must have an approved flood mitigation plan. Typically, funded FMA projects are for the acquisition and demolition of repetitively flooded structures insured by the National Flood Insurance Program (NFIP).

Goals of the Program:

- The overall goal of FMA is to fund cost-effective measures that reduce or eliminate the long-term risk of flood damage to NFIP-insured buildings, manufactured homes and other structures.
- Reduce the number of repetitively or substantially damaged structures and the associated claims on the NFIP
- Encourage long-term, comprehensive mitigation planning
- Respond to the needs of communities participating in the NFIP
- Complement other federal and state mitigation programs with similar goals

<http://www.state.il.us/iema/planning/MitigationPrograms.asp>

IEMA Hazard Information Webpage

HOME ABOUT CONTACT

Quick Nav: « Select Location »

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Hazard Information



Hazard Information

This page is designed to give planners as well as site visitors a way to find useful information regarding the hazards that Illinois faces. While the [2007 Illinois Natural Hazard Mitigation Plan](#) goes into greater detail about all of Illinois' hazards, this page looks at those that pose the biggest threat.

[Floods](#) [Severe Storms](#) [Earthquakes](#) [Technological](#) [Winter Storms](#) [Drought](#)

Floods

Except for fire, the most common hazard in the United States is flooding, with thousands occurring each year from oceans, rivers, lakes, small streams, gullies, creeks, culverts, dry streambeds or low-lying ground. 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 1981, 99 of Illinois' 102 counties have been declared by the President as major disaster areas due to flooding. Ten counties were declared in both the 1993 and 1995 floods. Calhoun County, less than 10 miles wide and approximately 42 miles from north to south and located between the Mississippi and Illinois rivers, has had 10 major flood declarations since 1981.

If you would like to know how many Federal Declarations your county has had, [click here](#).
-For more information on Illinois' disaster history, please visit: http://www.fema.gov/news/disasters_state.fema?id=17#diz.

Useful Information Related to Floods:

-  [DNR Floodplain Guide](#) (3.5M)
-  [Illinois Flood Fact Sheet](#) (58K)

Flood Gauges

- [USGS Flood Gauges](#)
- [NOAA Flood Gauges](#)

Select Language

Mitigation

- Mitigation Planning
- Mitigation Programs
- Hazard Information
- Mitigation Links

Illinois Terrorism Task Force

State of Illinois READY ILLINOIS

From The U.S. Department of Homeland Security

READY.GOV

Homeland Security

NIMS

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<http://www.state.il.us/iema/planning/HazardInfo.asp>

IEMA Mitigation Planning Webpage

www.state.il.us/iema

Pat Quinn, Governor

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Mitigation Planning

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:

1. organizing resources
2. assessing risks
3. developing a mitigation plan
4. implementing the plan and monitoring progress.

This page focuses on developing a document that will address what each community needs for a Disaster Mitigation Act of 2000 (DMA2K) compliant plan. Since federal aid for mitigation projects is only distributed to those communities that have a FEMA-approved mitigation plan, it is a great idea for jurisdictions that don't have a plan to complete this process. If you would like to find out if your community has a plan, please [click here](#).

If your community does not have a plan, the tools below will aid in developing the right plan for your community.

Disaster Mitigation Act of 2000

On October 30, 2000, the President of the United States signed into law the [Disaster Mitigation Act of 2000](#) (DMA2K) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988.

The most significant changes for state and local governments are the amendments to Sections 203 (Pre-Disaster Hazard Mitigation) and 322 (Mitigation Planning) of the Stafford Act.

Section 203 establishes a "National Pre-Disaster Mitigation Fund" in order to carry out a program that will:

- Provide technical and financial assistance to States and local governments to assist in the implementation of pre-disaster hazard mitigation measures that are cost-effective and designed to reduce injuries, loss of life, and damage and destruction of property, including damage to critical services and facilities under the jurisdiction of the States or local governments.

Section 322 provides a new and revitalized approach to mitigation planning by specifically doing the following:

- Establishes a new requirement for local and tribal mitigation plans;
- Authorizes up to 7 percent of the Hazard Mitigation Grant Program (HMGP) funds available to a state to be used for development of state, local and tribal mitigation plans; and
- Provides for states to receive an increased percentage of HMGP funds (from 15 percent to 20 percent) if, at the time of the declaration of a major disaster, they have in effect an approved

<http://www.state.il.us/iema/planning/MitigationPlanning.asp>

FEMA Grant Application Website

The screenshot shows the FEMA website's navigation menu with options like Home, About FEMA, Disaster Information, Plan & Prepare, Recover & Rebuild, Apply for Assistance, and FEMA for You. The main content area is titled 'Mitigation eGrants System' and includes an 'Overview' section with a list of links: Overview, Background, Application Process, Blank Applications, Technical Assistance, and eGrants Training. Below this is a 'Background' section explaining the system's purpose. On the right side, there are sections for 'References', 'Online Tools', and 'Training' with various links.

<http://www.fema.gov/government/grant/egrants.shtm>

grant life cycle from submission of an application to grant closeout.

[▲ Back To Top](#)

Application Process

Grant Applicants

Eligible applicants (states, Federally-recognized Indian tribal governments that wish to apply directly to FEMA, and territories) may:

1. Enter paper planning and project sub-applications, if any, on behalf of their local/tribal sub-applicants using the Paper Intake function under the Sub-grant Applications section of the Grantee Homepage in eGrants;
2. Review and approve their paper and electronic sub-applicants' planning and project sub-applications using the Review Submitted Sub-applications link under the Sub-grant Applications section of the Grantee Homepage in eGrants;
3. Create planning, project, and management costs sub-applications, if any, on behalf of the grant applicant's agency under the Grant Applicant Acting As Subgrant Applicant section of the Grantee Homepage in eGrants;
4. Create grant applications using the Create New Grant Application link under the Grant Applications section of the Grantee Homepage in eGrants and attach approved planning, project, and management costs sub-applications;
5. Submit grant applications to FEMA.

FEMA has developed an [eGrants Fact Sheet for Indian Tribal Governments](#) that provides eGrants information specific to Federally-recognized Indian tribal governments.

Sub-Applicants

Eligible sub-applicants (Federally-recognized Indian tribal governments that choose to apply to their state, state-recognized Indian tribes, authorized Indian tribal organizations, Alaska Native villages, and local governments) may submit planning and/or project sub-application(s) to their state/Tribe/territory for review and consideration for inclusion in a grant application to FEMA. Sub-applicants should consult the [State Hazard Mitigation Officer](#) in their state/Tribe/territory for more information regarding the application process.

[▲ Back To Top](#)

Blank Applications

Blank planning, project, and management costs sub-applications as well as grant applications for [Flood Mitigation Assistance \(FMA\)](#), [Pre-Disaster Mitigation \(PDM\)](#), [Severe Repetitive Loss \(SRL\)](#), and [Repetitive Flood Claims \(RFC\)](#) that follow the eGrants format are available from the [Print Blank Applications](#) link on the eGrants Homepage: portal.fema.gov as well as from the FEMA Library:

- [Planning sub-application](#) (for applicants and sub-applicants)
- [Project pre-application](#) (for sub-applicants only, if required by applicant)
- [Project sub-application](#) (for applicants and sub-applicants)

FEMA Documentation

Hazard Mitigation Assistance Unified Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program,
Flood Mitigation Assistance Program, Repetitive Flood Claims
Program, Severe Repetitive Loss Program

June 1, 2009



Federal Emergency Management Agency
Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472

<http://www.fema.gov/library/>

IEMA Professionals

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217-782-8719

Appendix C

Public Notifications

Times-Republic

r.timesrepublic.info

One world, One focus, Your community

Vol. 139, Issue 45

75 cents

Mitigation grant



Photo by Wendy Davis
the Iroquois County Judicial and Public Safety
meeting yesterday, Betty Busick and Donna Crow
look over claims.

County awarded \$99,500 grant

By WENDY DAVIS, Reporter
reporter@intranix.com

The mitigation grant has been awarded to Iroquois County.

The grant was submitted to the Federal Emergency Management Agency (FEMA) in June.

The award of \$99,500 will be used to set up a mitigation plan for the county and its municipalities. After last year's floods it was deemed necessary in order to receive future disaster money that the county have a course of action when an emergency happens.

Iroquois County ESDA Director Carl Gerdovich and officials at the county and municipal levels will be working with Mike Anderson with Stantec in Louisville,

Please see **GRANT**, page 5

E.R.H. to replace water main

By CARLA WATERS, Managing Editor
cwaters@intranix.com

E.R.H. Enterprises will replace a section of a water main at Newell Street in Watseka.

John McBride, owner and operator of the company, said at last night's Watseka City Council Contract Committee meeting

that a major water main break occurred Saturday night and affected a large section of town through Sunday.

McBride said the water main break disrupted not only the homeowners in the



Photo by Carla Waters
John McBride showed this piece of broken pipe to Watseka aldermen last night.

updates to Illinois residents through various media outlets and the internet.

He said the program offers two daily weather updates during the winter months and three updates during the summer.

Morris said the Community Collaborative Rain Hail and Snow Network, affectionately known as CoCoRaHS, a non-profit, community-based program is made up of volunteers from around Illinois who make weather reports and measure rainfall and snowfall twice a day.

He said this information is then relayed

CoCoRaHS program, the NWS is able to report on these precipitation patterns.

Morris said the Ford-Iroquois area needs more volunteers to become involved in the CoCoRaHS program since, at the present time, it only has a few people reporting weather conditions.

He said Ford County has four or five volunteers, while Iroquois County only has two.

Morris said even though the NWS relies on computers to make its weather forecasts and databases, the human element, especially volunteers from around

>>Grant, from page 1

Ky.

"We will have an open meeting. Municipalities who are not active participants will not be included (in the plan)," he said.

He said a review committee meeting was conducted Monday with himself, Illinois Emergency Management Agency (IEMA) personnel and zoning administrator Gloria Schleaf.

He said the cost of working with Stantec will be \$74,500. The rest of the money will be used as "in kind services". The county's participation will be voluntary. He said the time of the stakeholder, mileage, postage and other costs of working on the plan will be documented but the county will not have to pay for the work.

Stantec will send a bill once a month, which the county will pay but the money will be reimbursed by IEMA.

"Everything we do is reimbursable," Gerdovich said.

He said he hopes offi-

cials from the county's towns and townships will be working on their own to bring their intentions to full meetings.

Regarding to the generators recently purchased by the county clerk for election day emergencies, Committeeman Donna Crow asked if a generator could be left at the courthouse for Emergency Operations Center (EOC) use.

She said during the last ice storm the center was

only able to run its lights.

A generator is in the basement of the jail to keep it powered, said Gerdovich. It also has the courthouse's lights connected to it.

Committeeman Lowell Schmidt said it was a good idea.

"One should be available. Belmont Township shouldn't have a problem with it," he said. "We have control over our own generators."

Dissatisfied?



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Iroquois Countywide Multi-Hazard Mitigation Plan Survey

Posted by [Carl Gerdovich](#)
March 25, 2009

THE IROQUOIS COUNTYWIDE MULTI-HAZARD MITIGATION PLAN WILL PROTECT LIFE, PROPERTY AND THE ENVIROMENT THROUGH COORDINATION AND COOPERATION AMONG STAKEHOLDERS, REDUCE RISK AND LOSS, AND ENHANCE THE QUALITY OF LIFE FOR THE PEOPLE OF IROQUOIS COUNTY.

Take the survey by clicking the following link...

http://www.surveymonkey.com/s.aspx?sm=NyKpeSdmuJF8WMXNUxmGg_3d_3d

Iroquois County continues to proactively pursue hazard mitigation activities. The County is actively coordinating with several agencies to develop a Countywide Multi-Hazard Mitigation Plan.

The Multi-Hazard Mitigation Plan will serve to identify and assess areas at risk to flooding, tornados, drought, earthquakes and other severe storms including ice and snow. This effort is administered by the County's Emergency Services Department and is steered by a representative committee consisting of local and state emergency managers, first responders, planning officials and other public and private business management professionals. These stakeholders will help assess local vulnerability to natural hazards while prioritizing alternatives and future projects for mitigating these risks. The public will have multiple opportunities to contribute to this effort thus making the plan that much better.

The plan will cover the entire County and incorporated jurisdictions. The County will assess all natural hazards identified in the State's Hazard Mitigation Plan in addition to transportation corridor analysis to be performed along major interstates and railroads. Historically, flooding has proven to be of major concern throughout the County and particularly, within the City of Watseka. The Iroquois River and Sugar Creek are very flood prone and regularly produce flood damage, most recently the source of Iroquois County's flood disaster declaration. The plan's intent is to assess flooding and other sources of hazards in relationship to the County's assets, critical infrastructure and population. The result will enable each community to better identify its relative risk and identify the mitigation activities that will ultimately reduce exposure to this risk.

This multi-hazard mitigation plan is a major step toward recognizing and reducing risk throughout the County. It is also a requirement to qualify for federal hazard mitigation funding. These funds may be used to help pay for projects intended to reduce local exposure to loss of life or damage of property. Examples of projects that qualify for federal funding include structure acquisition, flood proofing and more.

A brief survey has been developed to collect information from the community. By completeing this survey you will be providing vital information and a local perspective about the county. These data will help tailor the plan to meet the specific needs of the county.

Take the survey by clicking the following link...

http://www.surveymonkey.com/s.aspx?sm=NyKpeSdmTuJF8WMXNUxmGg_3d_3d

For Additional Information Please Contact:

Carl Gerdovich, Plan Coordinator

[cgesda \[at\] co \[dot\] iroquois \[dot\] il \[dot\] us](mailto:cgesda@co.iroquois.il.us) (815) 432-6997

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[Iroquois County ESDA](#)

The Official Iroquois County Emergency Services Web Site

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Iroquois County Mitigation Plan Kick-off Meeting April 13th

Posted by [Carl Gerdovich](#)

April 6, 2009

The public kick-off meeting for the Iroquois County Hazard Mitigation Plan will be held Monday, April 13th from 7:30 – 8:30 pm at the Iroquois Regional Health Center, 200 Laird Lane, Watseka.

The meeting will identify the plan's purpose and approach for assessing and mitigating natural hazard risks throughout the county. Hazards assessed will include flooding, severe storms, tornadoes, drought and more. Once the plan is completed over several months and gains approval from FEMA, participating communities are eligible to pursue federal grant funding to implement identified mitigation projects. Attendance and participation is welcome and encouraged.

For additional information, contact Carl Gerdovich, Iroquois County Emergency Services and Disaster Agency Coordinator at 815-432-6997.

###

[ESDA News](#)

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**IROQUOIS COUNTY
EMERGENCY SERVICES DISASTER AGENCY**

550 South 10th Street, Watseka, IL 60970

www.iqesda.com iqesda@iqesda.com Phone (815) 432-6997

June 22, 2009

Dear Iroquois County Mitigation Stakeholder:

Stantec is interested in scheduling another Mitigation Meeting for all interested County Stakeholders. The Plan is now in a holding position because Stantac has not received any information from the Iroquois County Mitigation Stakeholders. Without the vital information regarding mitigation needs in **your area** the plan cannot move forward. The **lack of response** from our municipalities and townships has halted the process at this point. If your community does not submit information, the plan may not include data of events that may have significantly affected your citizens. The intent for the mitigation plan is to have an overall plan for **all of Iroquois County**.

All municipalities and townships must submit their information to get the Mitigation Plan completed. It is important that stakeholders submit information and attend the planning meetings to be included in the Mitigation Plan and better positioned to obtain grants for mitigation projects.

In an effort to move forward efficiently and develop a multi-hazard mitigation plan that incorporates the concerns in your community and township it is important the following information is submitted:

- Event details:
 - The date and type of event, and an estimate of the impact.
 - The location of the event and the extent of damages in terms of dollars, loss of economic function, displacement, etc.
 - Any records detailing the event, which could include eye-witness accounts, newspaper articles, photographs, or recovery efforts.
- Critical facilities in your jurisdiction:
 - A critical facility is something which, if disrupted, will impact the health and/or safety of residents and respondents.
 - Critical facilities include high-pressure gas lines, electricity transmission facilities, hospitals, emergency response services, etc.
 - If possible, please provide the latitude and longitude of these sites, along with property value estimates. At a minimum, please provide an address and a description of the services rendered by the facility.
- Any regulatory or planning documents impacting land use planning, such as zoning or subdivision ordinances or flood mitigation plans or ordinances.
- Anything else you may feel would be beneficial for us to know.

This information is vital to developing a plan that makes sense for your community. Please send this information to Mike.Anderson@stantec.com or send information to Carl Gerdovich, 550 South 10th Street, Watseka, IL 60970. If you have any questions, you may contact Carl Gerdovich at (815)432-6997 or cgesda@co.iroquois.il.us or Mike Anderson may be contacted at Mike.Anderson@stantec.com. This important information for your jurisdiction should be submitted to either Carl or Mike by July 6, 2009. After all the information is received, another meeting date will be set.

Thank you for your prompt response with this vital information.

Sincerely,

Carl Gerdovich

Carl Gerdovich
ESDA Director

Sincerely,

Gloria Schleef

Gloria Schleef
Zoning Administrator

**IROQUOIS COUNTY
EMERGENCY SERVICES DISASTER AGENCY**

550 South 10th Street, Watseka, IL 60970

www.iqesda.com iqesda@iqesda.com Phone (815) 432-6997

October 6, 2009

Dear Stakeholder:

We would like to thank the communities who attended the Mitigation Meeting for the Iroquois County Natural Hazard Mitigation Plan on September 17, 2009. As you may recall, Stantec Consulting Services Inc. (Stantec), the firm assisting with the Natural Hazard Mitigation Plan, discussed the risk analysis and the meeting participants identified mitigation activities for each community attending the meeting.

For the communities who did not attend the meeting or those communities who would like to submit additional mitigation activities, please find enclosed a village map and worksheet from the Mitigation Planning meeting September 17, 2009. These maps were used to identify two mitigation actions for your village. In addition, we ask that you verify the accuracy of the enclosed map so that it can be included in the natural hazard mitigation plan. If submitted, this map will be used to document the locations of the potential project areas for mitigation activities in your community.

In order to be included in the Mitigation Plan and to be considered for funding from the Federal Emergency Management Agency (FEMA) and Illinois Emergency Management (IEMA), the community must participate in these mitigation meetings and submit information for natural hazards. If the community chooses not to participate in the plan and attend at least two meetings, the community will not be able to apply for certain FEMA grant opportunities.

If there are any additions, corrections, or changes for mitigation goals, please send the information to:

Iroquois County Planning and Zoning
1001 E. Grant
Watska, IL 60970

Information regarding this mitigation plan must be received by Iroquois County **no later than October 23, 2009**. ESDA and Iroquois County are strongly encouraging all of the communities to be included in the mitigation plan. Should you have any questions, please feel free to contact Carl Gerdovich at 815-867-6667. Thank you for your assistance with this very important project.

Sincerely,
Carl Gerdovich
ESDA Director

Sincerely,
Gloria Schleef
Zoning Administrator

Where the press is free, and every man able to read, all is safe.
— Thomas Jefferson

Viewpoint

...were it left to me to decide whether we should have a government without newspapers or newspapers without a government, I should not hesitate a moment to prefer the latter.
— Thomas Jefferson

Our Opinion

Participation needed for mitigation plan

Iroquois County has been awarded \$99,500 for a mitigation grant.

The Federal Emergency Management Agency awarded the money to the county, which will be used to set up a mitigation plan for the county and municipalities. To receive disaster money in the future, the county and towns must have the plan in place. Those that do not participate in the planning process will not be included in the plan and therefore will not be able to receive

funds should the time come, according to Iroquois County Emergency Services and Disaster Agency Director Carl Gerdovich.

Therefore, participation by all communities is important.

Gerdovich is hoping that communities within the county will assess their situations and take those efforts to meetings regarding the plan.

All communities within the county are urged to partic-

ipate in the process. The plan will deal with more than just flood disaster. Any kind of disaster that could happen in the county is going to be of focus. Ideas will need to come from all over the county to get the most comprehensive evaluation of what should be done.

By working together the county and its communities can make the best plan possible that will help the most people.

Write to us

The *Times-Republic* welcomes letters of opinion from its readers, and encourages readers to participate in an active forum of debate and discussion.

Letters are preferred typed and double-spaced, though letters legibly handwritten will be accepted. Letters should be signed by the author, with phone number included for verification purposes only, and mailed to "Letters to the Editor" in care of the *Times-Republic*, 1492 E. Walnut, Watseka, Ill., 60970, or brought to our office at that location.

The newspaper reserves the right not to publish any letter. The author's name will be printed with the letter.



**IROQUOIS COUNTY
EMERGENCY SERVICES DISASTER AGENCY**

550 South 10th Street, Watseka, IL 60970

www.igesda.com igesda@igesda.com Phone (815) 432-6997

Dear Iroquois County Stakeholder:

We want to again express our thanks for your attendance at the kickoff meeting and for submitting data for the risk assessment for the Iroquois County Mitigation Plan. The next meeting for the Plan will be held Thursday, September 17, 2009 at 6:00 p.m. in the Iroquois County Administrative Center Board Room, 1001 E. Grant, Watseka, IL.

As you may recall, risk is estimated as the probability and consequences of an event. As part of the risk analysis, we combined your data with other sources to estimate the consequences of each hazard impacting your community. The risk and vulnerability assessment process developed a description and prioritization of the natural hazards that have occurred within each community. The hazards we are assessing as part of this Plan are: droughts, earthquakes, extreme heat, floods, hail, winter storms, severe storms, tornadoes, and transportation corridor vulnerability.

During this next meeting we will discuss the results of the risk analysis and mitigation strategies to minimize your exposure for the identified hazards. These strategies will ultimately serve as the action plan to reduce or avoid long-term vulnerabilities to the hazards identified throughout the County. The strategies will consist of specifications and projects that reduce the effects of each hazard with particular emphasis on buildings and infrastructure.

Specifically the mitigation strategies will account for ongoing or proposed future activities planned throughout the County. These and other recommended activities will be organized into the five general categories:

- **Preventative Activities** that keep problems from becoming exacerbated through regulations including building codes, development of hazardous areas and local planning or capital improvement projects.
- **Property Protection Activities** that are building or parcel specific such as flood proofing, acquisition or retrofitting.
- **Emergency Services** measures implemented during a disaster to minimize associated impacts.
- **Structural Projects** that control flooding, drainage, and other hazards.
- **Public Information Initiatives** that educate residents to local hazards and the protective measures they can perform to better protect themselves and their property.

If there is any additional information you would like included in the plan that has not yet been submitted, please mail them to Carl Gerdovich, at 550 South 10th Street, Watseka, IL 60970. Should you have any questions, you may contact Carl at (815)432-6997 or at cgesda@co.iroquois.il.us or you may contact Mike Anderson at (630)792-1680 or at Mike.Anderson@stantec.com.

Please plan to attend this extremely important meeting, Thursday, September 17, 2009, at 6:00 p.m. in the Iroquois County Administrative Center Board Room, 1001 E. Grant, Watseka, IL 60970.

Sincerely,

Carl Gerdovich
ESDA Director

Gloria Schleef, CFM
Zoning Administrator

By Carl Gerdovich, on September 15, 2009, 7:49 pm

Iroquois County Mitigation Meeting September 17th

Community leaders, township officials and the public are invited to Iroquois County's Mitigation Planning Meeting **Thursday, September 17th**. The **6 pm** meeting is being held in the County Board Room at the Administrative Center in Watseka. Stakeholders who attended the mitigation plan kick-off meeting in April will learn about the next steps in advancing toward a FEMA-APPROVED hazard mitigation plan.

Stantec, the consulting firm hired to direct efforts in the plan, will discuss results of the risk analysis and mitigation strategies to minimize exposure of the identified hazards. These strategies will ultimately serve as the action plan to reduce or avoid long-term vulnerabilities to hazards identified throughout the county.

Community input remains vital to ensure all vulnerable areas and potential county hazards are identified. Questions can be directed to the office of Emergency Services and Disaster Agency (ESDA) 815-432-6997 or the Iroquois County Zoning Office 815-432-6995.

Category: [Uncategorized](#) | [Leave a comment](#)          0 views

By Webmaster, on September 14, 2009, 10:16 am

Special Finance Committee Meeting

James Meyer, Chairman for the Iroquois County Finance committee, has called for a special Finance Committee meeting to be held on September 16th at 2:00pm in the County Board room of the Clifford Bury Admin Center.

Category: [Board Meetings](#), [Budget](#) | [Comments are closed](#)         10 views

By Carl Gerdovich, on September 13, 2009, 10:32 am

RIVERS CLEAN-UP SET for SEPTEMBER 19

Volunteers are welcome for the annual Kankakee and Iroquois Rivers Clean-Up next weekend. The 26th annual clean-up is Saturday, September 19th. Eight check-in stations have been arranged for volunteers. The clean-up effort runs from 8 am 'til 1 pm. Additional information is available by contacting organizer Barb Thomas 815-939-2675 or at 815-932-3663.

Check-in stations are at Island Park in Momence, Shamrock Golf Course on Route 17, Aroma Park boat launch, Beckman park boat launch, Bird Park boat launch, Bradley-Bourbonnais Sportsman Club, Kankakee Sportsman Club, Kankakee River State Park concession stand, and at Deselm Road at 4751 W and 7000 N Roads in Kankakee County.

Category: [Uncategorized](#) | [Comments are closed](#)         9 views

By Carl Gerdovich, on September 3, 2009, 11:30 am

RED CROSS FUNDRAISER SEPT. 12th in WATSEKA

The Iroquois County Chapter of the Red Cross welcomes the public to its Pancake & Sausage Breakfast Saturday, Sept 12th at the Masonic Lodge in Watseka. Serving from 7 – 11 am, this is a fundraiser for the local chapter. "Your chance to say 'Thanks' to dedicated volunteers. Tickets are available in advance from Red Cross board members or at the door.

> If there's one thing Iroquois County Red Cross Board Chairman Dan Raymer wants the public to know, it's that the Red Cross is still here.

- o October 2008
- o September 2008
- o July 2008
- o April 2008
- o March 2008
- o February 2008
- o January 2008

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September 15, 2009

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Uncategorized
No Comments

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The Iroquois County Chapter struggled through some tough times over the last several months. Forced to abandon their popular site, where the Red Cross shingle was obvious on Walnut Street in Watseka, the chapter office re-located to N. 4th Street in Watseka. That home was short-lived however. Financial matters forced that office to close too.

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[[edit](#)]

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IROQUOIS COUNTY HAZARD MITIGATION PLAN CLOSE TO BEING FINAL

Posted by **Carl Gerdovich**
March 26, 2010

..... *HAZARD MITIGATION PLAN UPDATE*

MARCH 26, 2010

Iroquois County's Multi-Jurisdictional Hazard Mitigation Plan is nearing its end. A final meeting is scheduled for **Wednesday, May 5, 2010 at 6:30 pm** in the County Board Room at the Administrative Center in Watseka.

A "Draft" of the Plan, produced by Stantec with valuable input from many local/area stakeholders, is now available for review by those concerned. The "Draft" is online on the www.iqesda.com website. Follow directions to download the "Draft" for your review; read online or print your own hard copy.

{Directions: log on to the site www.iqesda.com then locate "Links" in the right side column, scroll down to "Mitigation Plan." Click on 'Mitigation Plan' }

Letters have been mailed to Stakeholders explaining your role to review the Plan, make any necessary corrections, overlooked data input, etc and submit any comments/revisions to Gloria Schleef in the Iroquois County Zoning Office or Carl Gerdovich in the ESDA Office. All such info must be submitted on or before **April 9, 2010**.

Stantec will provide a final copy of the Mitigation Plan for all concerned.

Questions ? Contact Carl at ESDA 815-432-6997 or Gloria in Zoning at 815-432-6995.

iqesda.com

Appendix D
Iroquois Survey

Iroquois Co Multi-Hazard Questionnaire

Natural Hazard Information

* 1. Please indicate where you live in Iroquois County:

Ashkum

Loda

Beaverville

Martinton

Chebanse

Milford

Cissna Park

Onarga

Clifton

Papineau

Crescent City

Sheldon

Danforth

Thawville

Donovan

Watseka

Gilman

Wellington

Iroquois County (unincorporated)

Woodford

Other (please specify)

* 2. In the past 10 years, have you or someone in your household experienced a natural disaster within Iroquois County such as: severe storms, floods, winter storms, extreme heat, tornadoes, drought, earthquakes, or other natural disaster?

Yes

No

2a. If yes to question #2,

Which of the following types of natural hazard events have you or someone in your household experienced? (Please check all that apply) If you answered no to question #2, please move on to question #3.

Severe Weather damage in excess of \$500

Floods

Winter Storms

Extreme Heat

Tornadoes

Drought

Earthquakes

Other (please specify)

Iroquois Co Multi-Hazard Questionnaire

* 3. Do you consider yourself prepared for the probable impacts from natural hazard events that may occur within your community and/or the greater Iroquois County?

Yes

No

3a. If yes to question #3,

Where did you learn about being prepared for a disaster? (Please check all that apply) * If you answered no to question #3, please move on to question #4

Emergency preparedness information from a government source (i.e. Federal, State, or Local emergency management)

Personal experience. Have experienced one or more natural hazard events

Locally provided news or other media information

Schools and other educational institutions

Meetings or trainings offered by volunteer organizations (Red Cross, etc)

Other (please specify)

3b. Please check, on a scale of 1 to 5, how prepared you feel and your household are for the probable impacts of natural hazard events likely to occur within Iroquois County.

1 Not at all prepared

2 Somewhat prepared

3 Adequately prepared

4 Well prepared

5 Very well prepared

3c. What steps, if any, have you or someone in your household taken to prepare for a natural disaster? (Check all that apply)

Food

Fire extinguisher

Water

Smoke detector on each level of the house

Flashlight(s)

Prepared a disaster supply kit

Batteries

Received First Aid/ CPR training

Battery-powered radio

Made a fire escape plan

Medical supplies (First Aid Kit)

Discussed utility shutoffs

Other (please specify)

Iroquois Co Multi-Hazard Questionnaire

* 4. How concerned are you about the following natural hazards impacting your community and or/ the greater Iroquois County area?

| | Not Concerned | Somewhat Concerned | Concerned | Very Concerned | Extremely Concerned |
|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Severe Storm (wind, lightning) | <input type="radio"/> |
| Flood | <input type="radio"/> |
| Winter Storms | <input type="radio"/> |
| Extreme Heat | <input type="radio"/> |
| Tornadoes | <input type="radio"/> |
| Drought | <input type="radio"/> |
| Earthquakes | <input type="radio"/> |

Other (please specify)

* 5. 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)

- Newspapers
- Television
- Radio
- Schools
- Books
- Mail
- Fire Department/Rescue
- Other (please specify)
- Internet
- Fact sheet/Brochure
- Chamber of Commerce
- Public workshops/Meetings
- Magazine
- University or research institution

* 6. To the best of your knowledge, is your property located in a designated floodplain?

- Yes
- No
- Not Sure

* 6a. To the best of your knowledge, is your property located in close proximity (< 1 mile) to an earthquake fault line?

- Yes
- No
- Not Sure

Iroquois Co Multi-Hazard Questionnaire

* 7. Do you have flood insurance?

Yes

No

* 8. Do you have earthquake insurance?

Yes

No

* 9. How vulnerable to damage is your infrastructure to:

| | Severely Vulnerable | Moderately Vulnerable | Minimally Vulnerable | Don't Know |
|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Severe Storm (wind/lightning) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Winter Storms | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Extreme Heat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tornadoes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Earthquakes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Other (please specify)

* 9a.) How vulnerable to damage are the critical facilities (i.e. police stations, fire stations, emergency operation centers, etc) within your jurisdiction to:

| | Severely Vulnerable | Moderately Vulnerable | Minimally Vulnerable | Don't Know |
|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Severe Storm (wind/lightning) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Winter Storms | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Extreme Heat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tornadoes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Earthquakes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Other (please specify)

Iroquois Co Multi-Hazard Questionnaire

Natural Hazard Mitigation

* 10. Did you consider the impact that the possible occurrence of a natural disaster would have on your home before you purchased or moved in?

Yes

No

* 11. Was the presence of a natural hazard risk zone (i.e. flood zone, fault zone, etc) disclosed to you by a Real Estate agent, Seller, or Landlord before you purchased/moved into your home?

Yes

No

* 12. Would the disclosure of this type of information influence your decision to purchase/move into a home?

Yes

No

* 13. Would you be willing to spend money to modify/retrofit your current home from the impacts of future natural disasters? (Examples of retrofitting are: Elevating a flood prone home, bolting a foundation for seismic impacts, or improving home exteriors to withstand higher winds) (If you answered No, please skip to #15)

Yes

No

Maybe

Iroquois Co Multi-Hazard Questionnaire

* 14. How much money would you be willing to spend to better protect your home from the impacts of natural disasters?

\$5,000 and above

\$2,500 to \$4,999

\$1,000 to \$2,499

\$500 to \$999

\$100 to \$499

Less than \$100

Nothing

Don't know

Other (please specify)

* 15. Which of the following incentives would help to encourage you to spend money to retrofit your home from the possible impacts of natural disasters (Please check all that apply)

Low interest rate loan

Insurance premium discount

Mortgage discount

Property tax break or incentive

Grant funding that requires a "Cost-Share"

None

Other (please specify)

* 16. If your property were located in a designated high hazard area or had received repetitive damages from a natural event, would you consider a buyout or relocation offered by a public agency?

Yes

No

Iroquois Co Multi-Hazard Questionnaire

General Household Information

* 17. Please indicate your age range:

18 to 29

30 to 39

40 to 49

50 to 59

60 or over

* 18. Gender:

Male

Female

* 19. Please indicate your highest level of education:

Grade school/no schooling

Some high school

High school graduate/GED

Some College/Trade school

College Degree

Post Graduate degree

Other (please specify)

* 20. How long have you lived in Iroquois County?

Less than 1 year

1 to 4 years

5 to 9 years

10 to 19 years

20 or more years

* 21. Do you have access to the Internet?

Yes

No

Iroquois Co Multi-Hazard Questionnaire

* 22. Do you own or rent your home?

Own

Rent

* 23. Do you own/rent a:

Single-family home

Duplex

Apartment (3-4 units in structure)

Apartment (5 or more units in structure)

Condominium/townhouse

Manufactured home

Other (please specify)

24. Other Comments:

Appendix E
Survey Results

Iroquois Countywide Multi-Hazard Mitigation Plan Survey Results

| 1. Please indicate where you live in Iroquois County: | | |
|--|---------------------------|-----------------------|
| Answer Options | Response Frequency | Response Count |
| Ashkum | 1.7% | 1 |
| Beaverville | 5.2% | 3 |
| Buckley | 1.7% | 1 |
| Chebanse | 1.7% | 1 |
| Cissna Park | 3.4% | 2 |
| Clifton | 13.8% | 8 |
| Crescent City | 3.4% | 2 |
| Danforth | 1.7% | 1 |
| Donovan | 5.2% | 3 |
| Gilman | 5.2% | 3 |
| Village of Iroquois | 0.0% | 0 |
| Iroquois County | 13.8% | 8 |
| Loda | 1.7% | 1 |
| Martinton | 1.7% | 1 |
| Milford | 6.9% | 4 |
| Onarga | 0.0% | 0 |
| Papineau | 0.0% | 0 |
| Sheldon | 1.7% | 1 |
| Thawville | 0.0% | 0 |
| Watseka | 22.4% | 13 |
| Wellington | 0.0% | 0 |
| Woodland | 8.6% | 5 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 58 |
| <i>skipped question</i> | | 1 |

| 2. In the past 10 years, have you or someone in your household experienced a natural disaster within Iroquois County such as: severe storms, floods, winter storms, extreme heat, tornadoes, drought, earthquakes, or other natural disaster? | | |
|--|---------------------------|-----------------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 82.8% | 48 |
| No | 17.2% | 10 |
| <i>answered question</i> | | 58 |
| <i>skipped question</i> | | 1 |

| 2a. If yes to question #2, Which of the following types of natural hazard events have you or someone in your household experienced? (Please check all that apply.) If you answered no to question #2, please move on to question #3. | | |
|---|---------------------------|-----------------------|
| Answer Options | Response Frequency | Response Count |
| Severe Weather damage in | 41.7% | 20 |
| Floods | 56.3% | 27 |
| Winter Storms | 72.9% | 35 |
| Extreme Heat | 8.3% | 4 |
| Tornadoes | 22.9% | 11 |
| Drought | 12.5% | 6 |
| Earthquakes | 8.3% | 4 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 48 |
| <i>skipped question</i> | | 11 |

3. Do you consider yourself prepared for the probable impacts from natural hazard events that may occur within your community and/or the greater Iroquois County?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 49.1% | 28 |
| No | 50.9% | 29 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

3a. If yes to question #3, Where did you learn about being prepared for a disaster? (Please check all that apply.) * If you answered no to question #3, please move on to question #4.

| Answer Options | Response Frequency | Response Count |
|----------------------------------|--------------------|----------------|
| Emergency preparedness | 81.5% | 22 |
| Personal experience. Have | 66.7% | 18 |
| Locally provided news or other | 55.6% | 15 |
| Schools and other educational | 11.1% | 3 |
| Meetings or trainings offered by | 25.9% | 7 |
| Other (please specify) | 7.4% | 2 |
| <i>answered question</i> | | 27 |
| <i>skipped question</i> | | 32 |

| Number | Other (please specify) |
|--------|------------------------------|
| 1 | Professional EMA training |
| 2 | no comment written on survey |

3b. Please check, on a scale of 1 to 5, how prepared you feel your household is for the probable impacts of natural hazard events likely to occur within Iroquois County.

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| 1 Not at all prepared | 8.2% | 4 |
| 2 Somewhat prepared | 46.9% | 23 |
| 3 Adequately prepared | 28.6% | 14 |
| 4 Well prepared | 12.2% | 6 |
| 5 Very well prepared | 4.1% | 2 |
| <i>answered question</i> | | 49 |
| <i>skipped question</i> | | 10 |

3c. What steps, if any, have you or someone in your household taken to prepare for a natural disaster? (Check all that apply)

| Answer Options | Response Frequency | Response Count |
|----------------------------------|--------------------|----------------|
| Food | 54.9% | 28 |
| Water | 52.9% | 27 |
| Flashlight(s) | 92.2% | 47 |
| Batteries | 86.3% | 44 |
| Battery-powered radio | 68.6% | 35 |
| Medical supplies (First Aid Kit) | 51.0% | 26 |
| Fire extinguisher | 74.5% | 38 |
| Smoke detector on each level | 86.3% | 44 |
| Prepared a disaster supply kit | 11.8% | 6 |
| Received First Aid/ CPR | 51.0% | 26 |
| Made a fire escape plan | 35.3% | 18 |
| Discussed utility shutoffs | 33.3% | 17 |
| Other (please specify) | 3.9% | 2 |
| <i>answered question</i> | | 51 |
| <i>skipped question</i> | | 8 |

| Number | Other (please specify) |
|--------|------------------------|
| 1 | 15 KW Generator |
| 2 | Generator |

4. How concerned are you about the following natural hazards impacting your community and/or the greater Iroquois County area?

| Answer Options | Not Concerned | Somewhat Concerned | Concerned | Very Concerned | Extremely Concerned | Response Count |
|--------------------------------|---------------|--------------------|-----------|----------------|---------------------|----------------|
| Severe Storm (wind, lightning) | 1 | 6 | 18 | 20 | 6 | 50 |
| Flood | 2 | 10 | 12 | 14 | 16 | 53 |
| Winter Storms | 2 | 8 | 18 | 25 | 1 | 53 |
| Extreme Heat | 10 | 20 | 12 | 4 | 1 | 46 |
| Tornadoes | 0 | 4 | 16 | 28 | 3 | 50 |
| Drought | 9 | 27 | 7 | 5 | 0 | 47 |
| Earthquakes | 20 | 19 | 6 | 1 | 1 | 46 |
| Other (please specify) | | | | | | 0 |
| <i>answered question</i> | | | | | | 57 |
| <i>skipped question</i> | | | | | | 2 |

5. 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.)

| Answer Options | Response Frequency | Response Count |
|---------------------------|--------------------|----------------|
| Newspapers | 59.6% | 34 |
| Television | 70.2% | 40 |
| Radio | 82.5% | 47 |
| Schools | 10.5% | 6 |
| Books | 5.3% | 3 |
| Mail | 35.1% | 20 |
| Fire Department/Rescue | 29.8% | 17 |
| Internet | 43.9% | 25 |
| Fact sheet/Brochure | 29.8% | 17 |
| Chamber of Commerce | 1.8% | 1 |
| Public workshops/Meetings | 28.1% | 16 |
| Magazine | 5.3% | 3 |
| University or research | 3.5% | 2 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 6. To the best of your knowledge, is your property located in a designated floodplain? | | |
|--|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 15.5% | 9 |
| No | 79.3% | 46 |
| Not Sure | 5.2% | 3 |
| <i>answered question</i> | | 58 |
| <i>skipped question</i> | | 1 |

| 6a. To the best of your knowledge, is your property located in close proximity (< 1 mile) to an earthquake fault line? | | |
|--|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 0.0% | 0 |
| No | 63.2% | 36 |
| Not Sure | 36.8% | 21 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 7. Do you have flood insurance? | | |
|---------------------------------|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 10.3% | 6 |
| No | 89.7% | 52 |
| <i>answered question</i> | | 58 |
| <i>skipped question</i> | | 1 |

| 8. Do you have earthquake insurance? | | |
|--------------------------------------|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 14.0% | 8 |
| No | 86.0% | 49 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 9. How vulnerable to damage is your infrastructure to: | | | | | |
|--|---------------------|-----------------------|----------------------|------------|----------------|
| Answer Options | Severely Vulnerable | Moderately Vulnerable | Minimally Vulnerable | Don't Know | Response Count |
| Severe Storm(wind/lightning) | 10 | 28 | 12 | 4 | 53 |
| Flood | 10 | 15 | 28 | 2 | 54 |
| Winter Storms | 7 | 28 | 16 | 3 | 53 |
| Extreme Heat | 1 | 12 | 32 | 4 | 48 |
| Tornadoes | 17 | 29 | 5 | 2 | 52 |
| Drought | 1 | 8 | 35 | 5 | 48 |
| Earthquakes | 3 | 12 | 30 | 6 | 50 |
| Other (please specify) | | | | | 0 |
| <i>answered question</i> | | | | | 58 |
| <i>skipped question</i> | | | | | 1 |

9a.) How vulnerable to damage are the critical facilities (i.e. police stations, fire stations, emergency operation centers, etc) within your jurisdiction to:

| Answer Options | Severely Vulnerable | Moderately Vulnerable | Minimally Vulnerable | Don't Know | Response Count |
|------------------------------|---------------------|-----------------------|----------------------|------------|----------------|
| Severe Storm(wind/lightning) | 13 | 27 | 14 | 0 | 53 |
| Flood | 6 | 10 | 37 | 3 | 55 |
| Winter Storms | 10 | 21 | 23 | 1 | 54 |
| Extreme Heat | 1 | 12 | 32 | 7 | 51 |
| Tornadoes | 18 | 24 | 11 | 1 | 53 |
| Drought | 1 | 5 | 39 | 7 | 51 |
| Earthquakes | 2 | 11 | 29 | 7 | 48 |
| Other (please specify) | | | | | 0 |
| <i>answered question</i> | | | | | 58 |
| <i>skipped question</i> | | | | | 1 |

10. Did you consider the impact that the possible occurrence of a natural disaster would have on your home before you purchased or moved in?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 36.8% | 21 |
| No | 63.2% | 36 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

11. Was the presence of a natural hazard risk zone (i.e. flood zone, fault zone, etc) disclosed to you by a Real Estate agent, Seller, or Landlord before you purchased/moved into your home?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 14.5% | 8 |
| No | 85.5% | 47 |
| <i>answered question</i> | | 55 |
| <i>skipped question</i> | | 4 |

12. Would the disclosure of this type of information influence your decision to purchase/move into a home?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 75.9% | 41 |
| No | 24.1% | 13 |
| <i>answered question</i> | | 54 |
| <i>skipped question</i> | | 5 |

13. Would you be willing to spend money to modify/retrofit your current home from the impacts of future natural disasters? (Examples of retrofitting are: Elevating a flood prone home, bolting a foundation for seismic impacts, or improving home exteriors to withstand higher winds.) (If you answered No, please skip to #15.)

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 29.8% | 17 |
| No | 38.6% | 22 |
| Maybe | 31.6% | 18 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

14. How much money would you be willing to spend to better protect your home from the impacts of natural disasters?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| \$5,000 and above | 16.3% | 8 |
| \$2,500 to \$4,999 | 10.2% | 5 |
| \$1,000 to \$2,499 | 18.4% | 9 |
| \$500 to \$999 | 4.1% | 2 |
| \$100 to \$499 | 0.0% | 0 |
| Less than \$100 | 0.0% | 0 |
| Nothing | 14.3% | 7 |
| Don't know | 36.7% | 18 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 49 |
| <i>skipped question</i> | | 10 |

15. Which of the following incentives would help to encourage you to spend money to retrofit your home from the possible impacts of natural disasters? (Please check all that apply.)

| Answer Options | Response Frequency | Response Count |
|---------------------------------|--------------------|----------------|
| Low interest rate loan | 38.9% | 21 |
| Insurance premium discount | 59.3% | 32 |
| Mortgage discount | 20.4% | 11 |
| Property tax break or incentive | 66.7% | 36 |
| Grant funding that requires a | 57.4% | 31 |
| None | 11.1% | 6 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 54 |
| <i>skipped question</i> | | 5 |

16. If your property were located in a designated high hazard area or had received repetitive damages from a natural event, would you consider a buyout or relocation offered by a public agency?

| Answer Options | Response Frequency | Response Count |
|--------------------------|--------------------|----------------|
| Yes | 83.6% | 46 |
| No | 16.4% | 9 |
| <i>answered question</i> | | 55 |
| <i>skipped question</i> | | 4 |

| 17. Please indicate your age range: | | |
|--|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| 18 to 29 | 1.8% | 1 |
| 30 to 39 | 3.5% | 2 |
| 40 to 49 | 12.3% | 7 |
| 50 to 59 | 29.8% | 17 |
| 60 or over | 52.6% | 30 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 18. Gender: | | |
|--------------------------|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Male | 85.5% | 47 |
| Female | 14.5% | 8 |
| <i>answered question</i> | | 55 |
| <i>skipped question</i> | | 4 |

| 19. Please indicate your highest level of education: | | |
|---|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Grade school/no schooling | 0.0% | 0 |
| Some high school | 1.8% | 1 |
| High school graduate/GED | 35.7% | 20 |
| Some College/Trade school | 37.5% | 21 |
| College Degree | 19.6% | 11 |
| Post Graduate degree | 5.4% | 3 |
| Other (please specify) | 0.0% | 0 |
| <i>answered question</i> | | 56 |
| <i>skipped question</i> | | 3 |

| 20. How long have you lived in Iroquois County? | | |
|--|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Less than 1 year | 0.0% | 0 |
| 1 to 4 years | 1.8% | 1 |
| 5 to 9 years | 3.5% | 2 |
| 10 to 19 years | 8.8% | 5 |
| 20 or more years | 86.0% | 49 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 21. Do you have access to the Internet? | | |
|---|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Yes | 80.7% | 46 |
| No | 19.3% | 11 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 22. Do you own or rent your home? | | |
|-----------------------------------|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Own | 100.0% | 57 |
| Rent | 0.0% | 0 |
| <i>answered question</i> | | 57 |
| <i>skipped question</i> | | 2 |

| 23. Do you own/rent a: | | |
|-------------------------------|--------------------|----------------|
| Answer Options | Response Frequency | Response Count |
| Single-family home | 92.6% | 50 |
| Duplex | 0.0% | 0 |
| Apartment (3-4 units in | 1.9% | 1 |
| Apartment (5 or more units in | 0.0% | 0 |
| Condominium/townhouse | 1.9% | 1 |
| Manufactured home | 1.9% | 1 |
| Other (please specify) | 1.9% | 1 |
| <i>answered question</i> | | 54 |
| <i>skipped question</i> | | 5 |

| Number | Other (please specify) |
|--------|--|
| 1 | Own both single family home and apartment (3-4 units in structure) |

| 24. Other Comments: | |
|--------------------------|----------------|
| Answer Options | Response Count |
| | 1 |
| <i>answered question</i> | 1 |
| <i>skipped question</i> | 58 |

| Number | Response Text |
|--------|--|
| 1 | We have an interstate and 3 major rail lines in Iroquois County. What can we do to address all the hazardous materials that are transported on them? |

Appendix F

Risk Tables

| Table 1. Hazard Risk Factor Table Key | |
|--|--|
| Period of Occurrence | The normal time of year when a hazard occurs. |
| Number of Events to Date | The number of past events reported to the National Climatic Data Center (NCDC) between 1950 and 2009. |
| Annual Chance Probability | The probability of future occurrences, based on the number of past events divided by the time of record. |
| Location of Impacts | The area most commonly impacted by a natural hazard. |
| Potential Impacts | Impacts typically associated with a particular natural hazard |
| Injury or Death | The number of injuries or deaths reported to the NCDC. |

Table 2. Summary of Drought Risk Factors

| | |
|--|--|
| Period of occurrence | Generally during summer months or extended periods of no precipitation. |
| Number of Events to date 1950-2009 (NCDC) | 2 |
| Annual Chance Probability | 3% |
| Location of Impacts | Droughts are not localized weather patterns, thus the entirety of Iroquois County is equally susceptible. |
| Potential Impact(s) | Activities that rely heavily on high water usage may be impacted significantly, including agriculture, tourism, wildlife protection, municipal water usage, commerce, recreation, and electric power generation. Droughts can lead to economic losses such as unemployment, decreased land values, and agronomic losses. Minimal risk of damage or cracking to structural foundations. |
| Injury or Death | None Reported |

Table 3. Summary of Earthquake Risk Factors

| | |
|--|---|
| Period of occurrence | Year round |
| Number of Events to date 1950-2009 (NCDC) | 0 |
| Annual Chance Probability | Minimal |
| Location of Impacts | The most damaging impacts from an earthquake would be associated with bridges, concrete or masonry structures, and towers. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can cause severe transportation problems and make travel extremely dangerous. May trigger landslides, releases of hazardous materials, and/or dam and levee failure and flooding. |
| Injury or Death | None Reported |

Table 4. Summary of Extreme Heat Risk Factors

| | |
|---|--|
| Period of occurrence | Summer |
| Number of Events to-date 1950-2009 (NCDC) | 1 |
| Annual Chance Probability | 2% |
| Location of Impacts | Extreme heat is a widespread event. Thus all areas of Iroquois County are equally at risk. |
| Potential Impact(s) | Public health and safety, especially the elderly. Heavy use of water and electrical facilities due to air conditioners, fans, etc. |
| Injury or Death | 583 reported injuries throughout Northeastern Illinois. |

Table 5. Summary of Flood Risk Factors

| | |
|---|--|
| Period of occurrence | Anytime, but primarily during spring/summer rains. |
| Number of Events to-date 1950–2009 (NCDC) | 23 |
| Annual Chance Probability Ratio | 39% |
| Location of Impacts | Proximity to streams or rivers is the largest indicator of the probability of an area being impacted by flooding. In some urban areas undersized storm sewers may also lead to localized flooding. |
| Potential Impact(s) | Potential for loss of life. Floodwaters are a public safety issue due to contaminants and pollutants. Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Can lead to economic losses such as unemployment, decreased land values, and agronomic losses. |
| Injury or Death | One reported injury. |

Table 6. Summary of Severe Storms Risk Factor

| | |
|---|--|
| Period of occurrence | Spring, Summer and Fall |
| Number of Events to-date 1950-2009 (NCDC) | Total: 128 Lightning: 3 Hail: 34 Wind: 91 |
| Annual Chance Probability | Total: 217% Lightning: 5% Hail: 58% Wind: 154% |
| Location of Impacts | All areas are equally at-risk to severe storm impacts; however, areas of impact are generally localized, rather than widespread. |
| Potential Impacts | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, fire, damaged or destroyed critical facilities, and hazardous material releases. Impacts human life, health, and public safety. |
| Injury or Death | Six deaths and fourteen injuries reported. |

Table 7. Severe Winter Storms Risk Factors

| | |
|---|--|
| Period of occurrence | Winter |
| Number of Events to-date 1950-2009 (NCDC) | Total: 22 Extreme Cold/Wind Chill: 4 Heavy Snow: 6 Winter Storm: 12 |
| Annual Chance Probability | Total: 37% Extreme Cold/Wind Chill: 7% Heavy Snow: 10% Winter Storm: 20% |
| Location of Impact | The entire county is susceptible to winter storms. Severe winter storms generally impact a large area, effectively isolating communities from assistance from nearby communities. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. May cause severe transportation problems and make travel extremely dangerous. Power outages, which results in loss of electrical power and heat and human life. Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and frostbite. |
| Injury or Death | Eleven reported deaths. |

Table 8. Severe Winter Storms Risk Factors

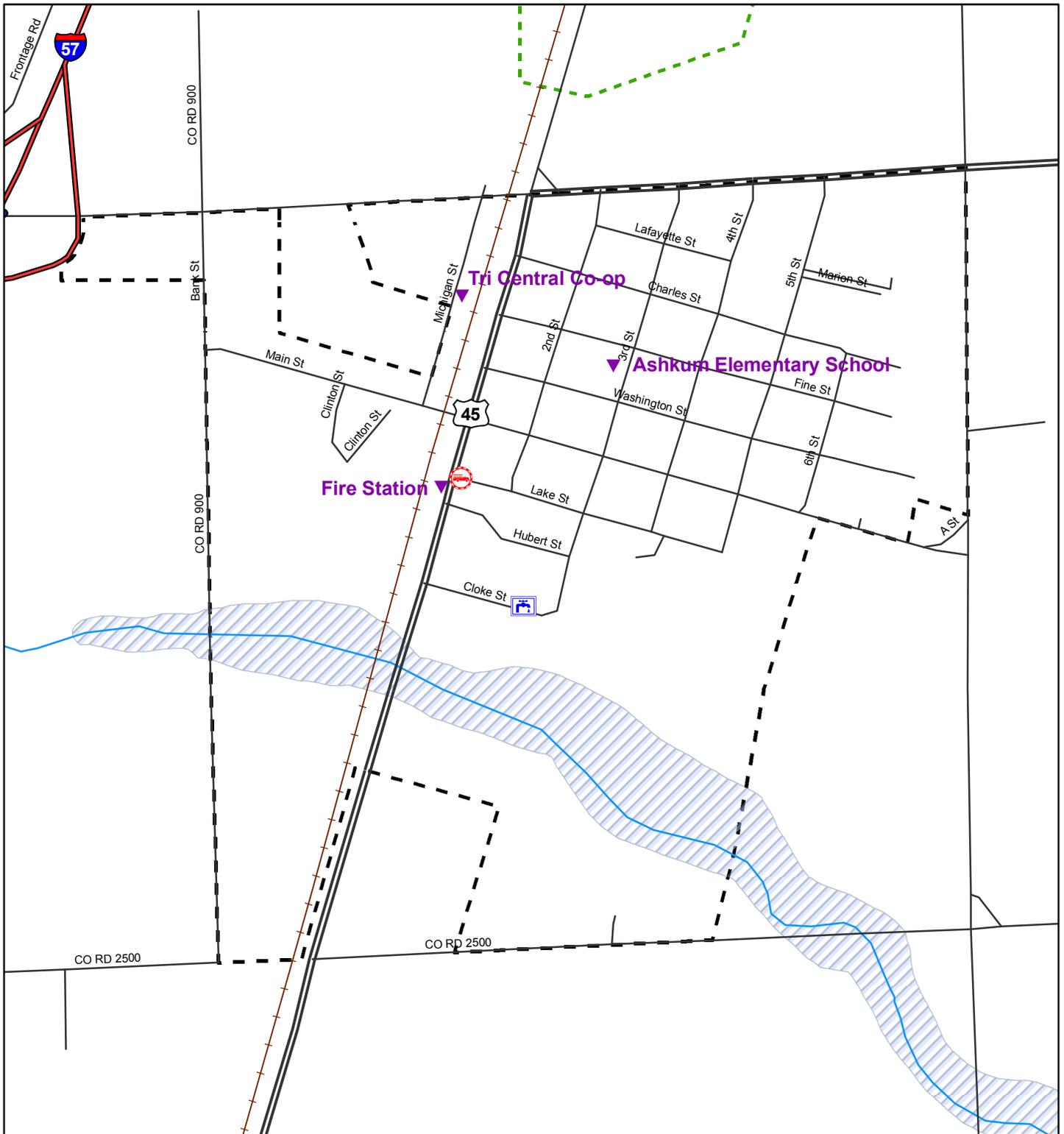
| | |
|---|---|
| Period of occurrence | Winter |
| Number of Events to-date 1950-2009 (NCDC) | Total: 22 Extreme Cold/Wind Chill: 4 Heavy Snow: 6 Winter Storm: 12 |
| Annual Chance Probability | Total: 37% Extreme Cold/Wind Chill: 7% Heavy Snow: 10% Winter Storm: 20% |
| Location of Impact | The entire county is susceptible to winter storms. Severe winter storms generally impact a large area, effectively isolating communities from assistance from nearby communities. |
| Potential Impact(s) | Utility damage and outages, infrastructure damage (transportation and communication systems), structural damage, and damaged or destroyed critical facilities. May cause severe transportation problems and make travel extremely dangerous. Power outages, which results in loss of electrical power and potentially loss of heat, and human life. Extreme cold temperatures may lead to frozen water mains and pipes, damaged car engines, and prolonged exposure to cold resulting in frostbite. |
| Injury or Death | Eleven reported deaths. |

Table 9. Railroad Corridor Incident Risk Factors

| | |
|--|--|
| Period of occurrence | Anytime |
| Number of Events to-date 1950-2009 (Local Records) | 2 |
| Annual Chance Probability | 3% |
| Location of Impact | Impacts are confined to areas in proximity to railroads. As distance from the rail line increases, the probability and severity of impacts decrease. |
| Potential Impact(s) | Impacts may be minor, such as temporary road blocks or crop loss or severe, including significant property damage and loss of life. |
| Injury or Death | More than 60 injuries reported. |

Appendix G

Maps



Iroquois County Multi-Hazard Mitigation Plan

Village of Ashkum Critical Facilities and Mitigation Action Map

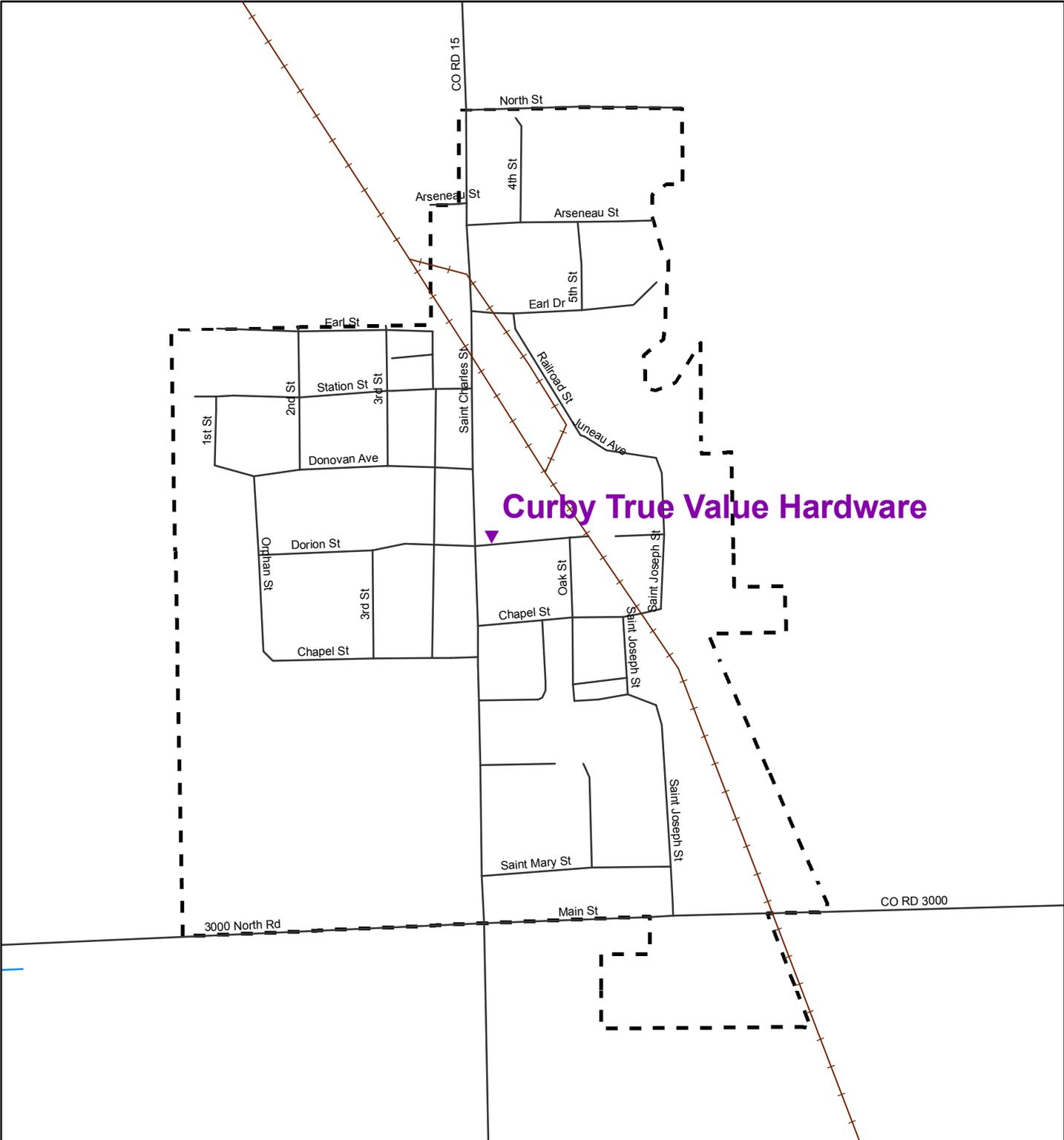


1 inch = 1,000 feet



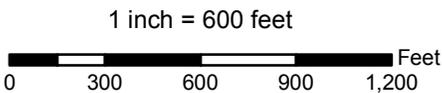
Legend

- | | |
|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Wastewater Treatment Plant | |
| Community Critical Facilities | |



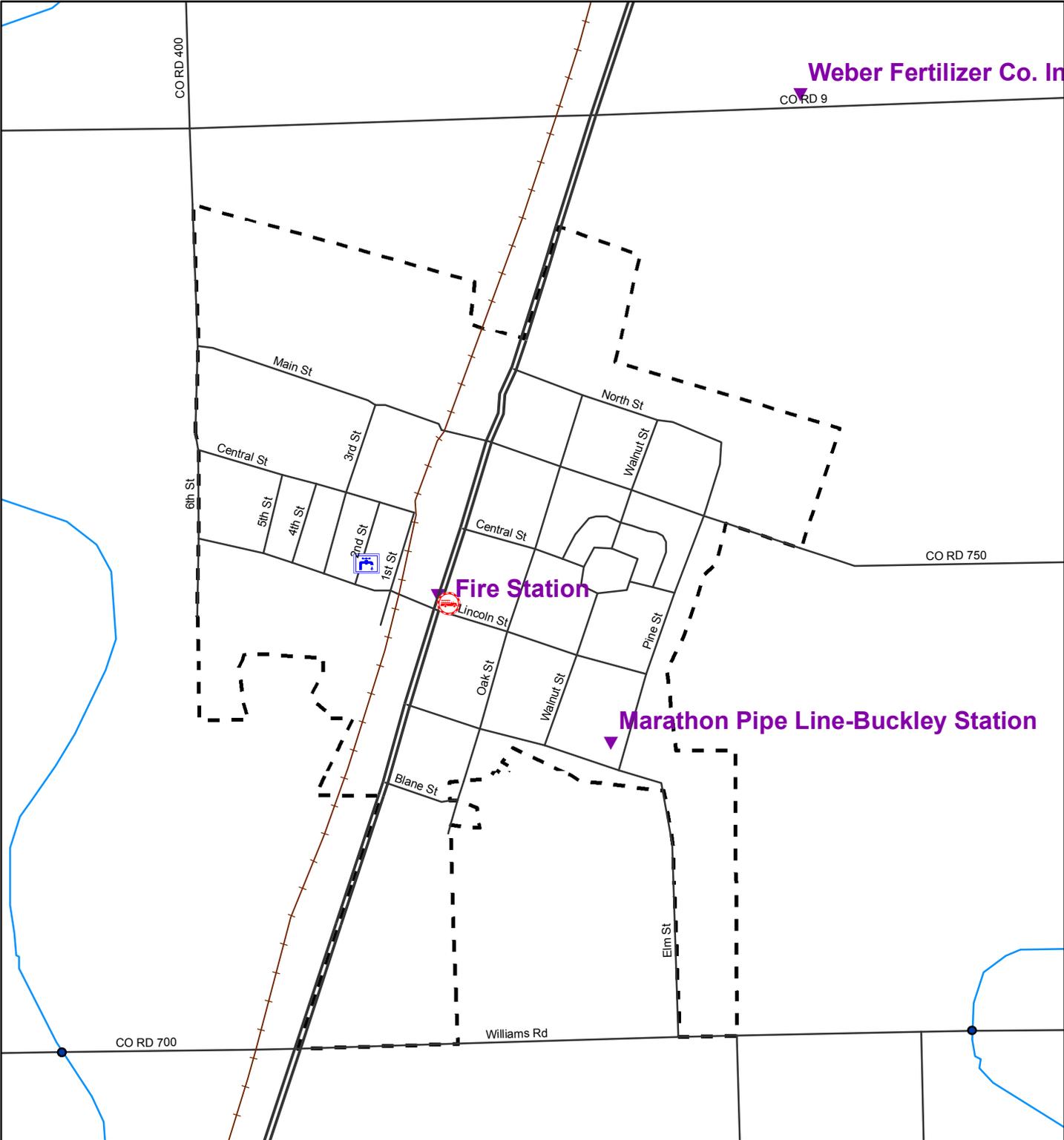
Iroquois County Multi-Hazard Mitigation Plan

Village of Beaverville Critical Facilities and Mitigation Action Map



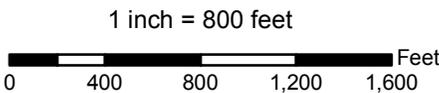
Legend

- | | |
|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |



Iroquois County Multi-Hazard Mitigation Plan

Village of Buckley Critical Facilities and Mitigation Action Map



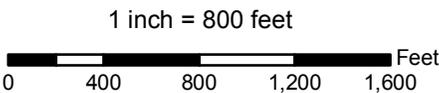
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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



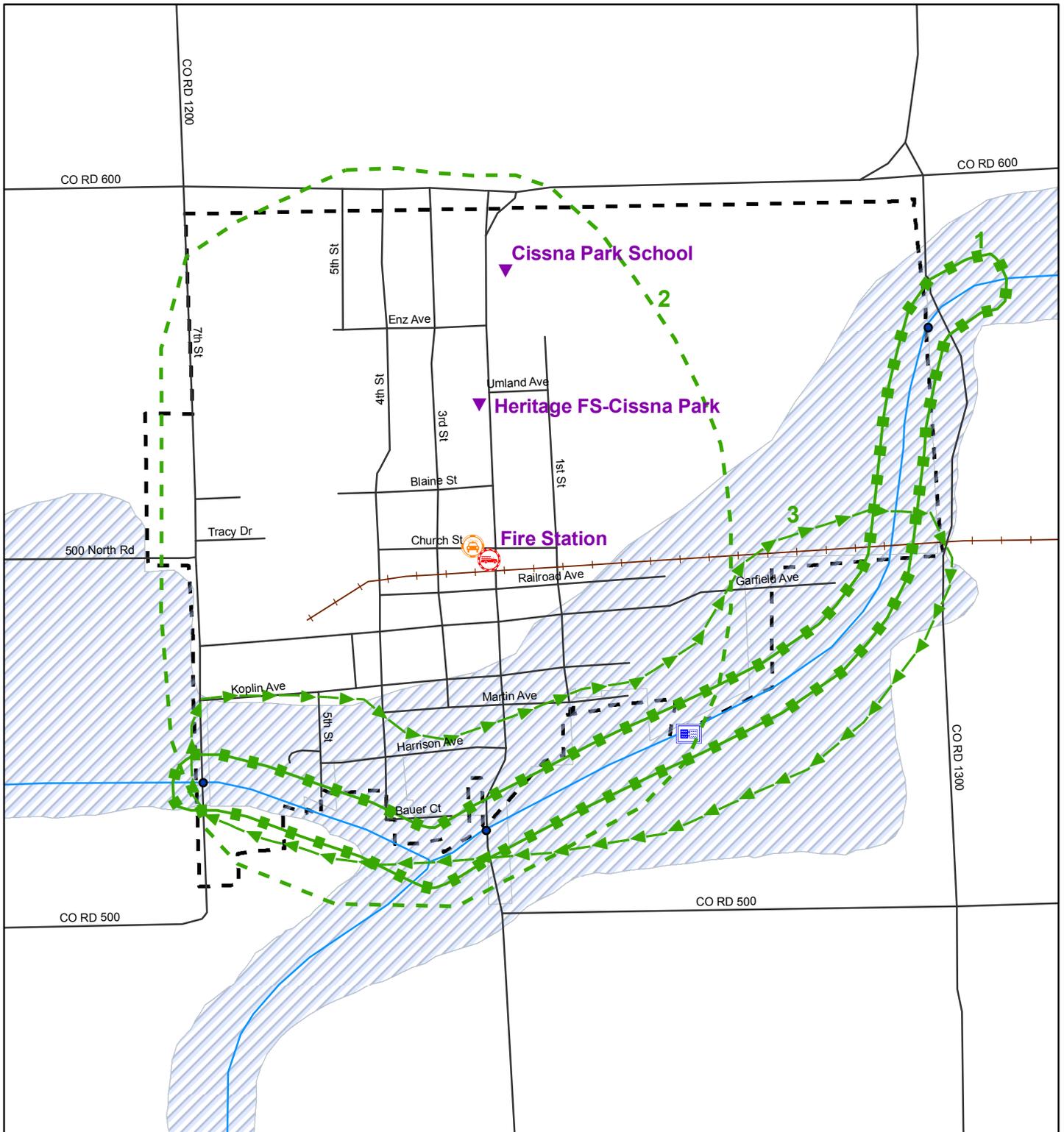
Iroquois County Multi-Hazard Mitigation Plan

Village of Chebanse Critical Facilities and Mitigation Action Map



Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |

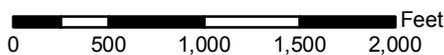


Iroquois County Multi-Hazard Mitigation Plan

Village of Cissna Park Critical Facilities and Mitigation Action Map

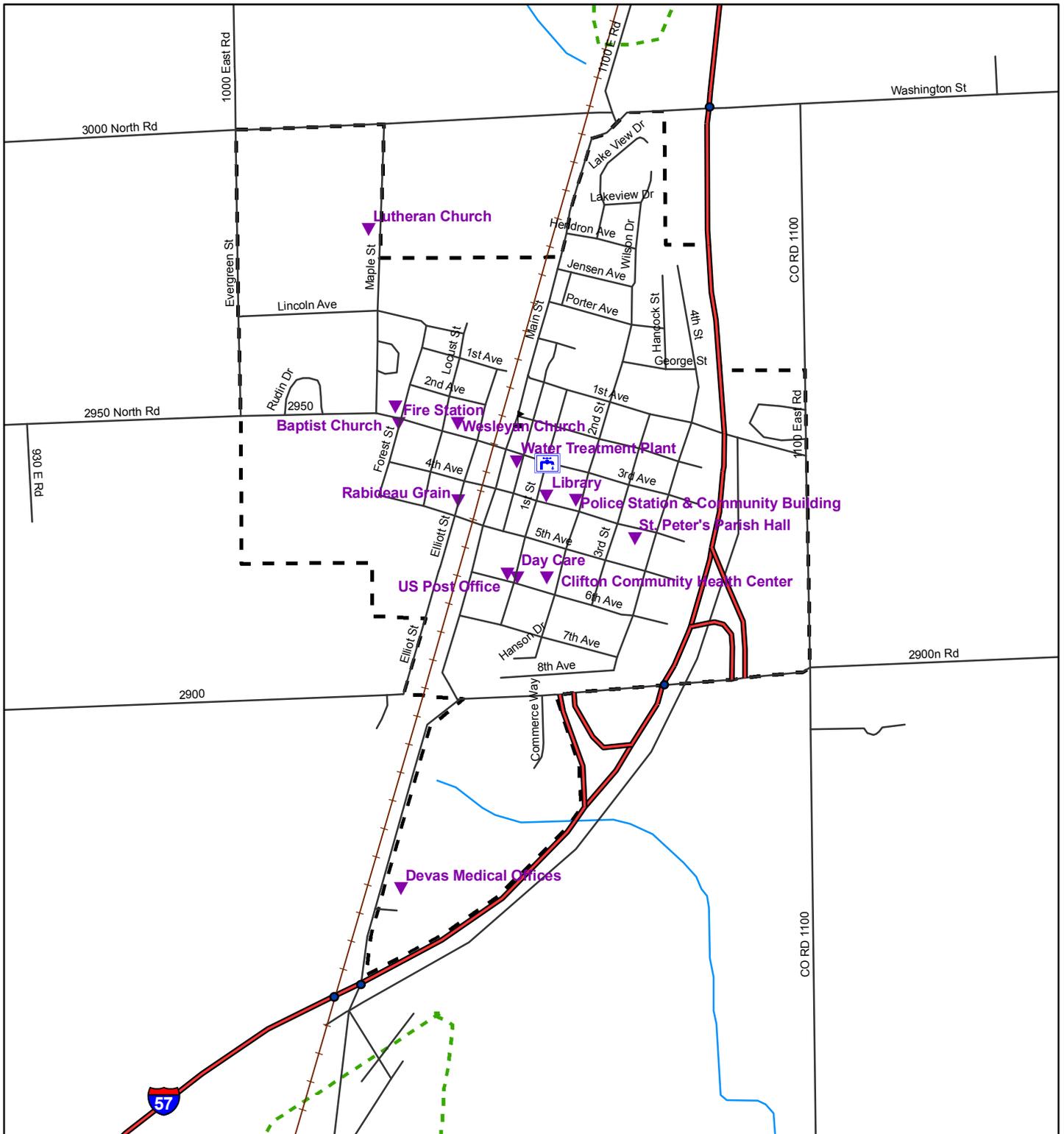


1 inch = 1,000 feet



Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |



Iroquois County Multi-Hazard Mitigation Plan

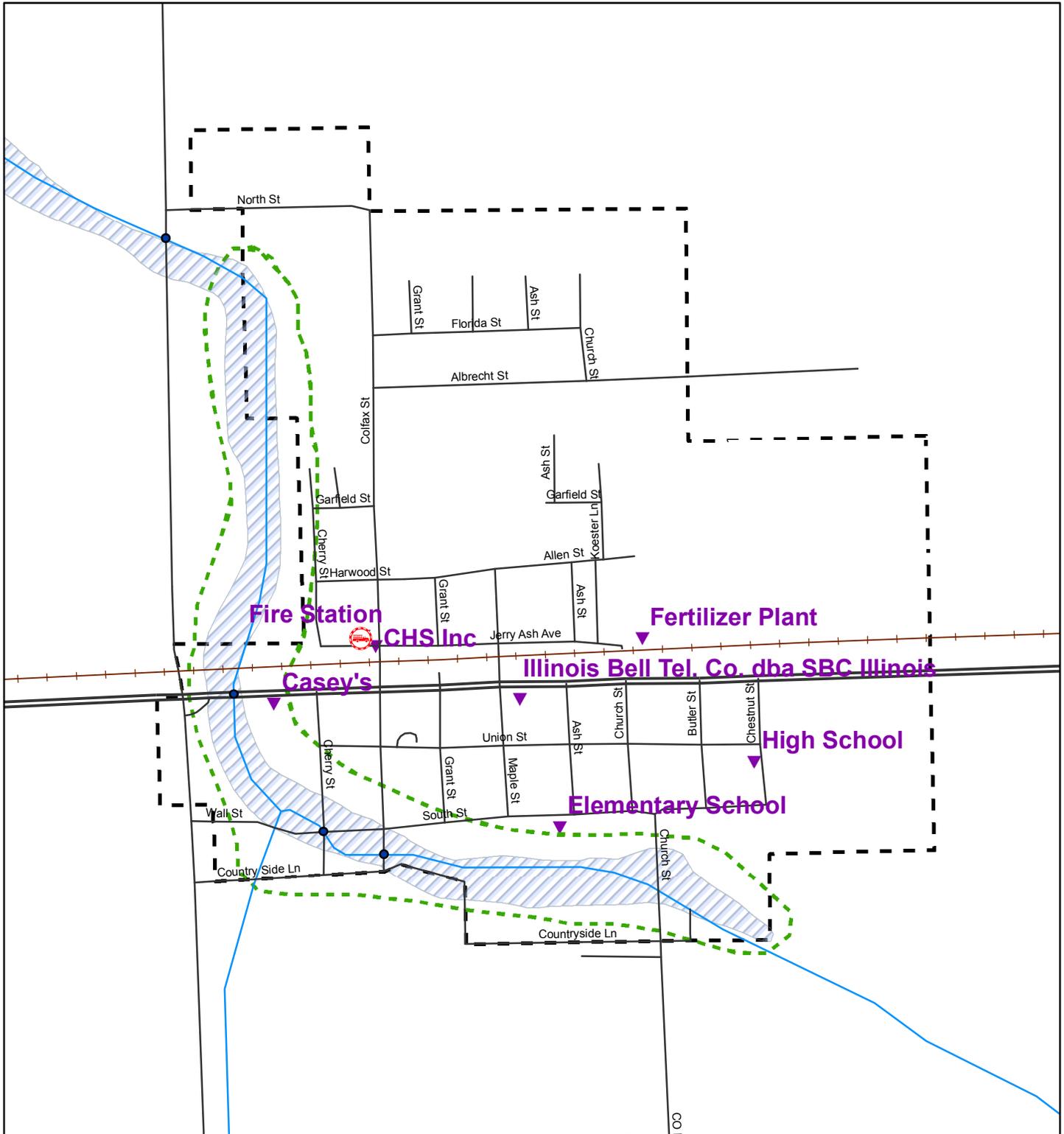
Village of Clifton Critical Facilities and Mitigation Action Map

1 inch = 0.25 miles



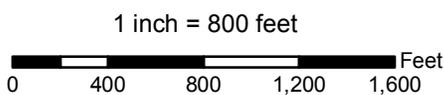
Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |



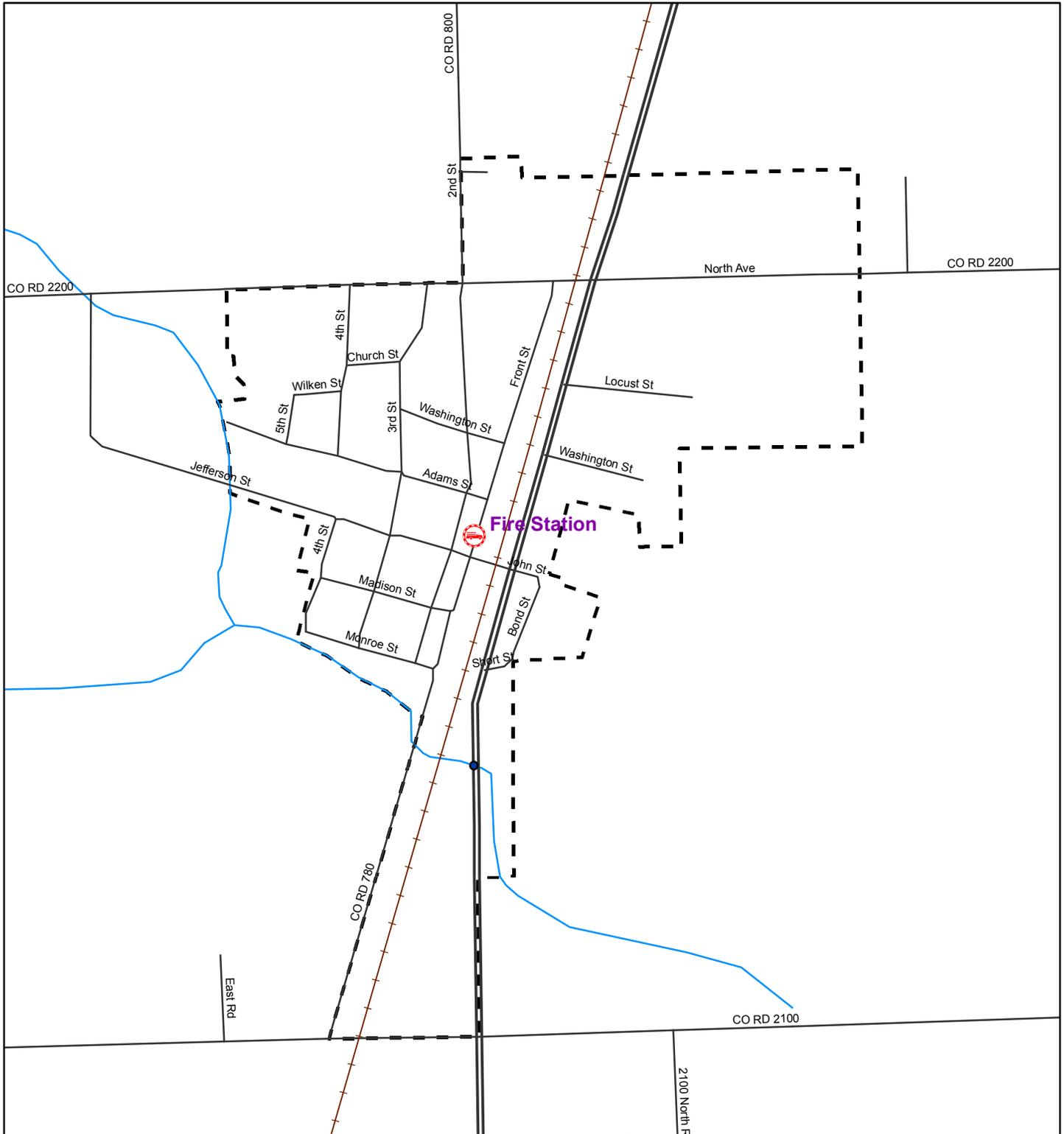
Iroquois County Multi-Hazard Mitigation Plan

Village of Crescent City Critical Facilities and Mitigation Action Map



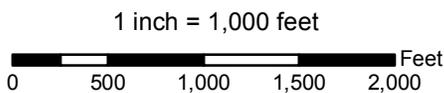
Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



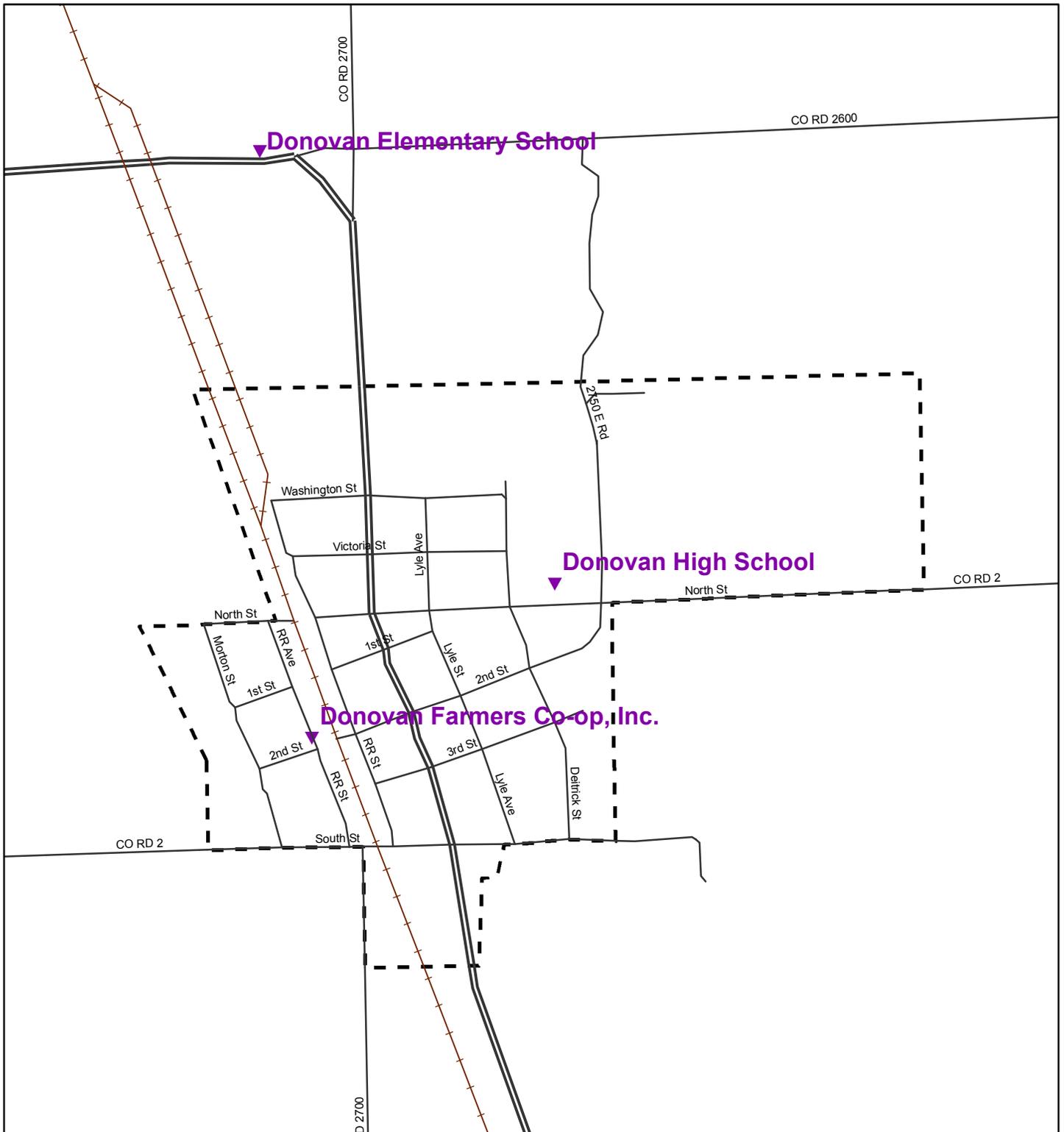
Iroquois County Multi-Hazard Mitigation Plan

Village of Danforth Critical Facilities and Mitigation Action Map



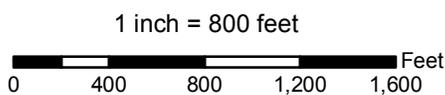
Legend

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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |



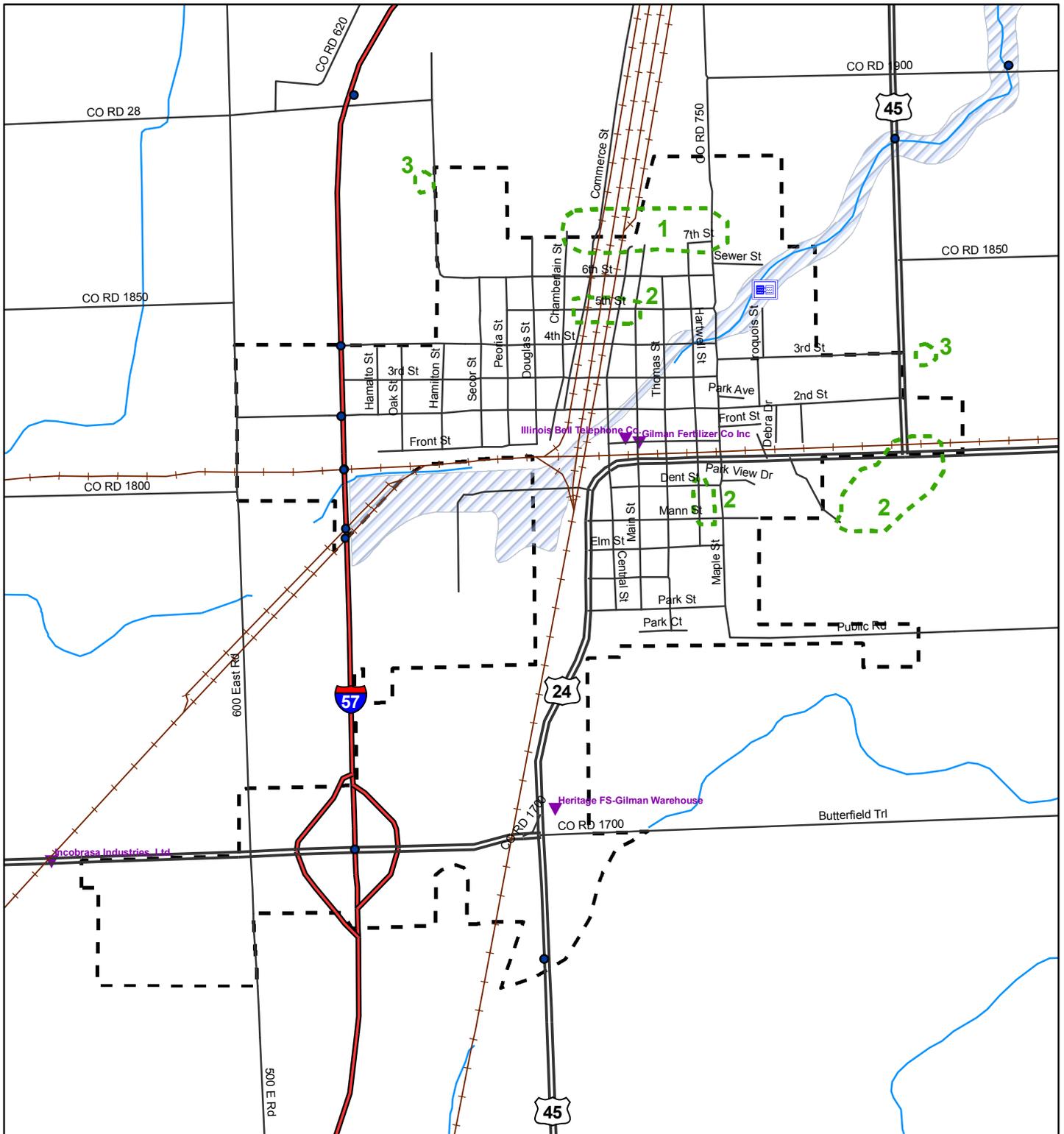
Iroquois County Multi-Hazard Mitigation Plan

Village of Donovan Critical Facilities and Mitigation Action Map



Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |

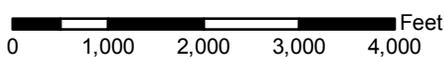


Iroquois County Multi-Hazard Mitigation Plan

City of Gilman Critical Facilities and Mitigation Action Map

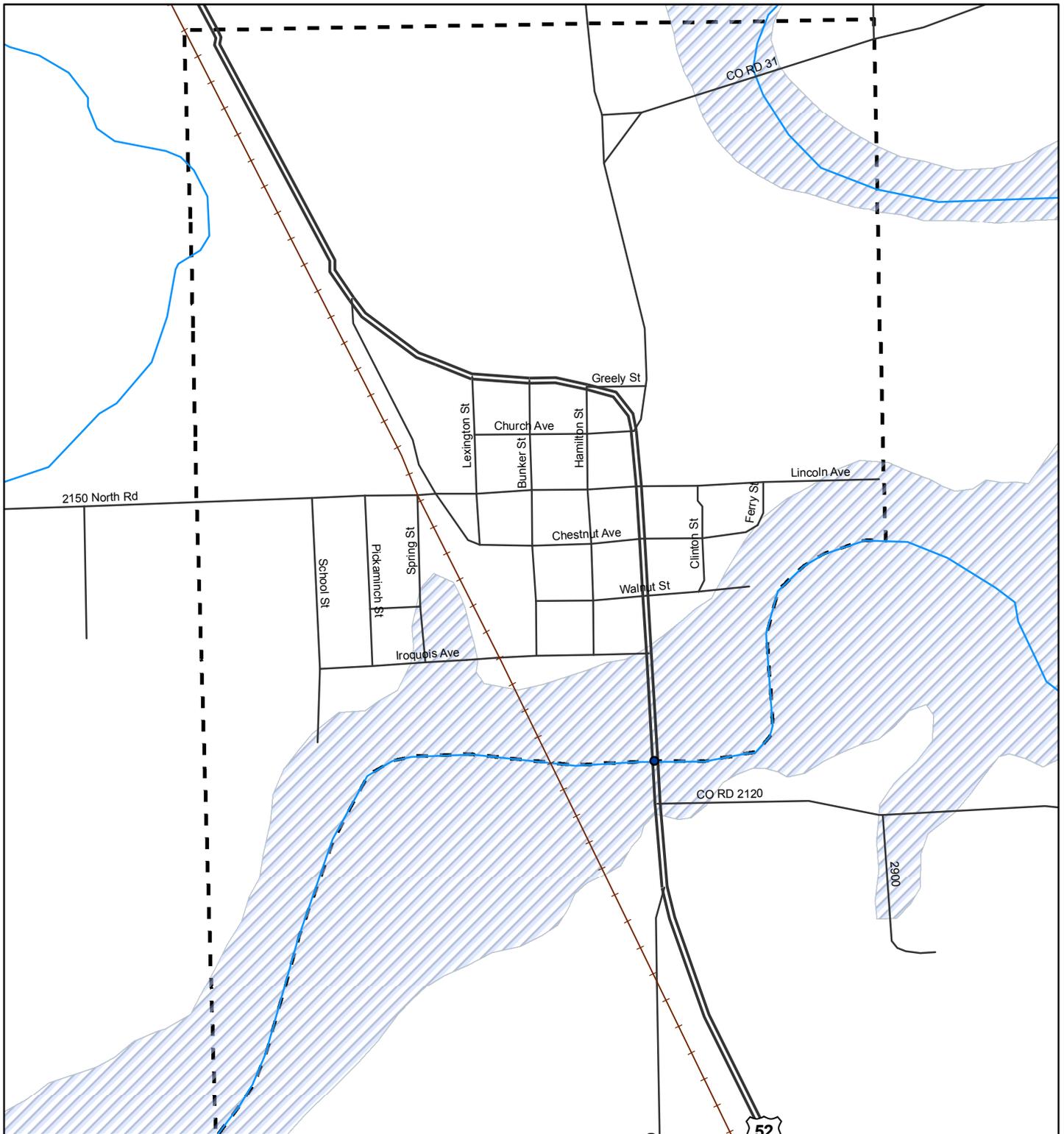


1 inch = 2,000 feet



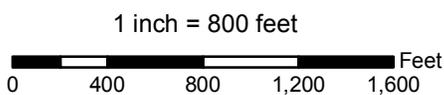
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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



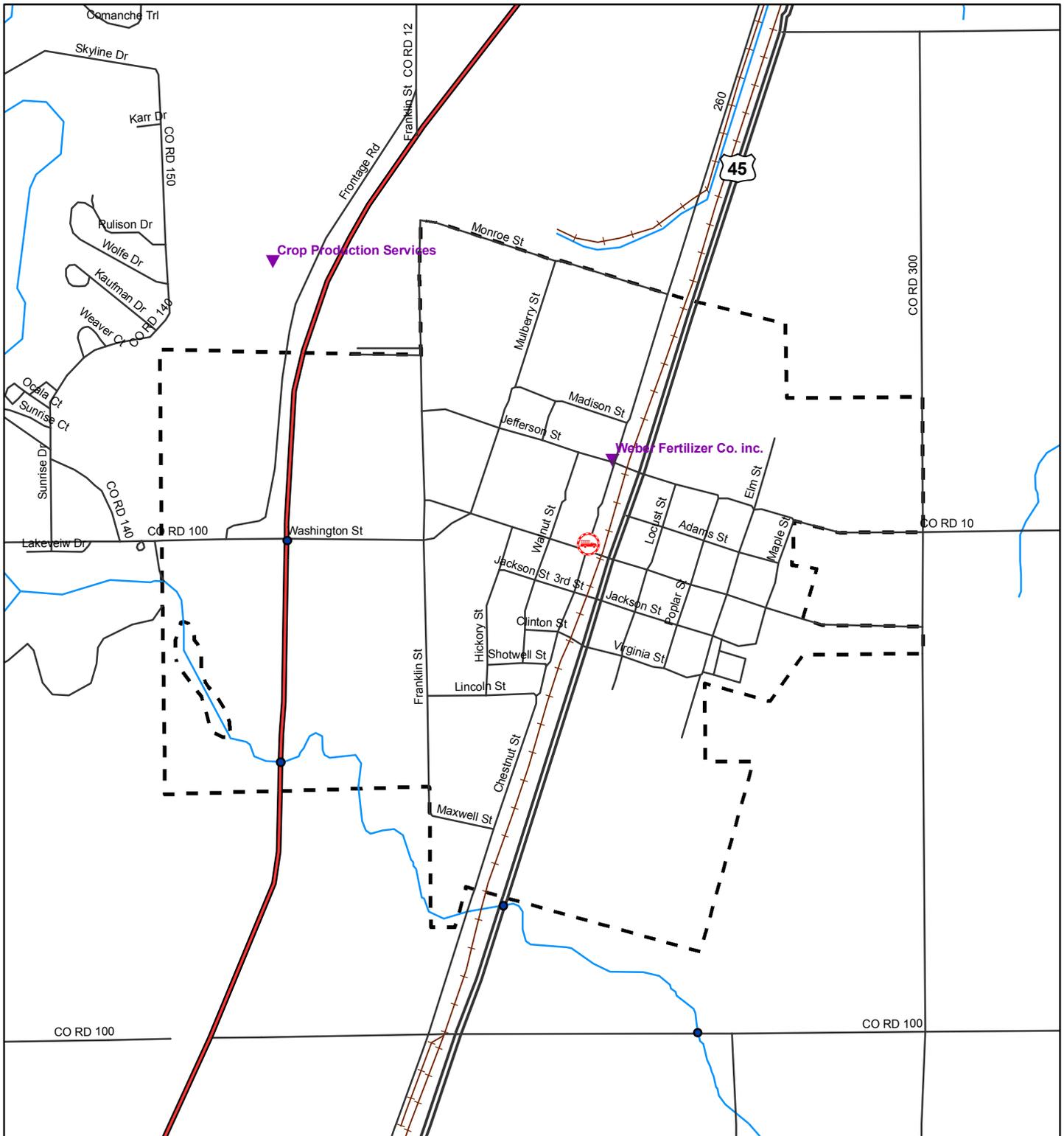
Iroquois County Multi-Hazard Mitigation Plan

Village of Iroquois Critical Facilities and Mitigation Action Map



Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



Iroquois County Multi-Hazard Mitigation Plan

Village of Loda Critical Facilities and Mitigation Action Map

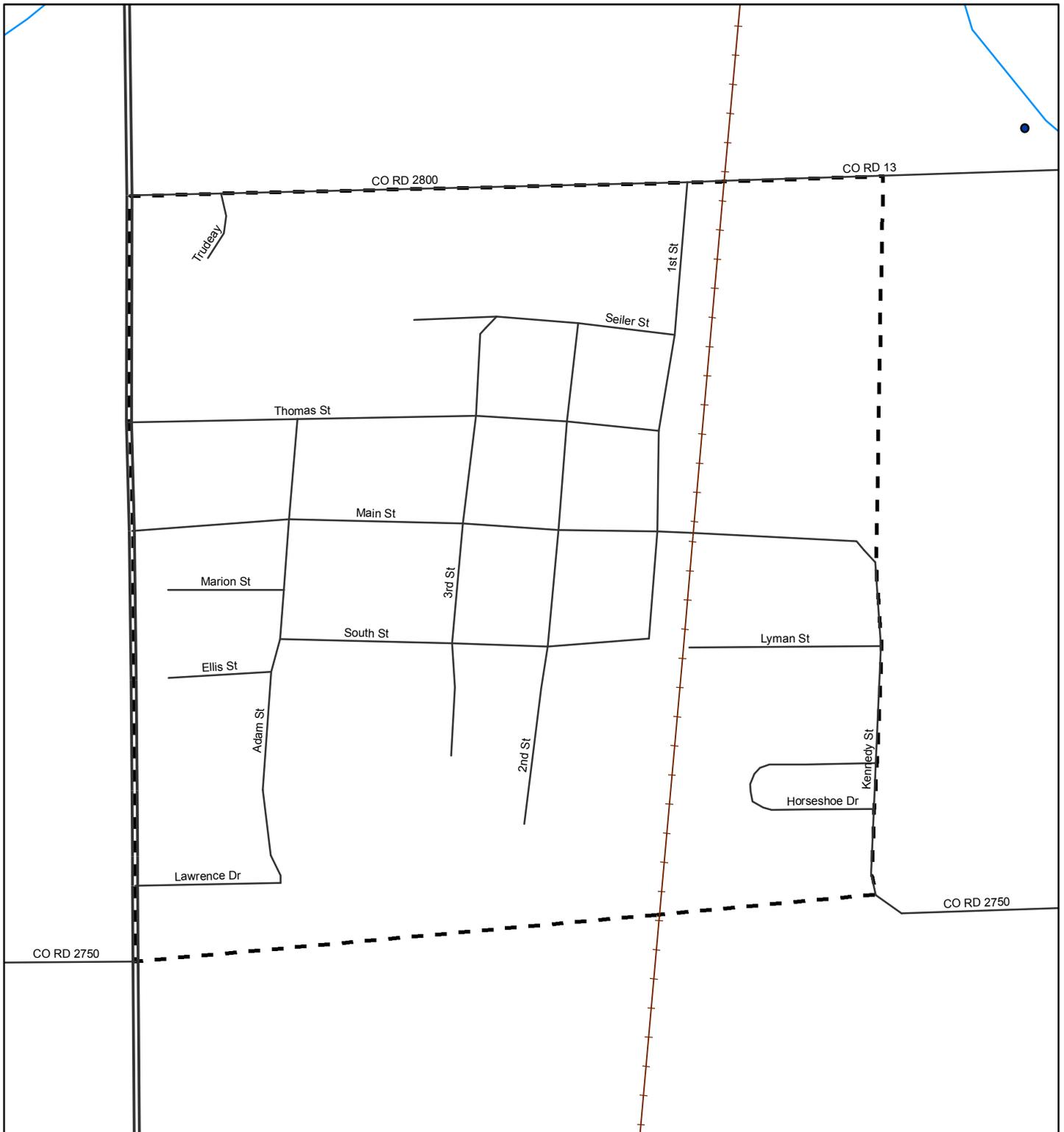


1 inch = 1,500 feet



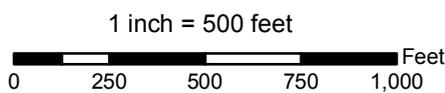
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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



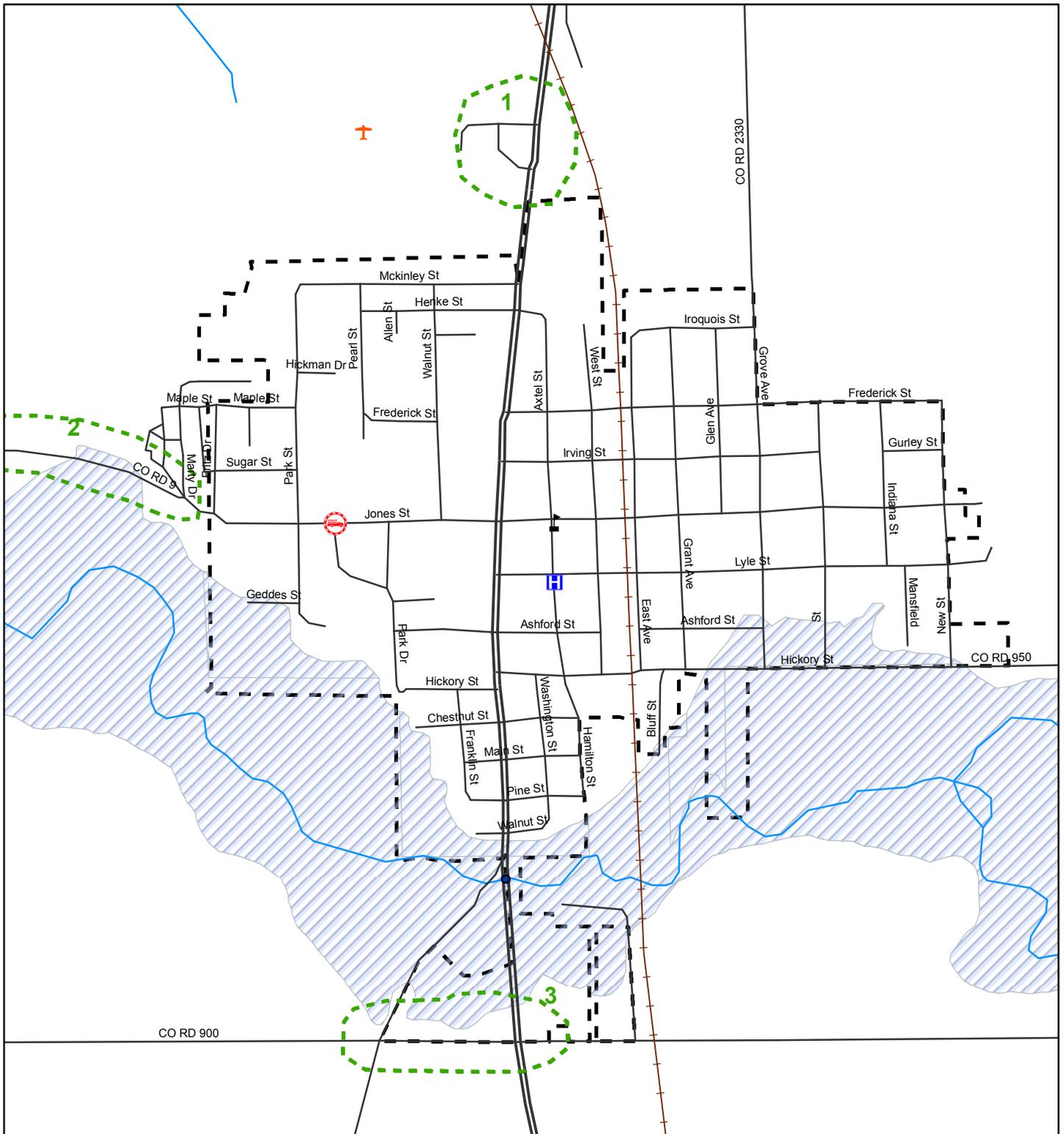
Iroquois County Multi-Hazard Mitigation Plan

Village of Martinton Critical Facilities and Mitigation Action Map



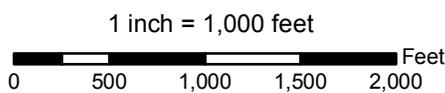
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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
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| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



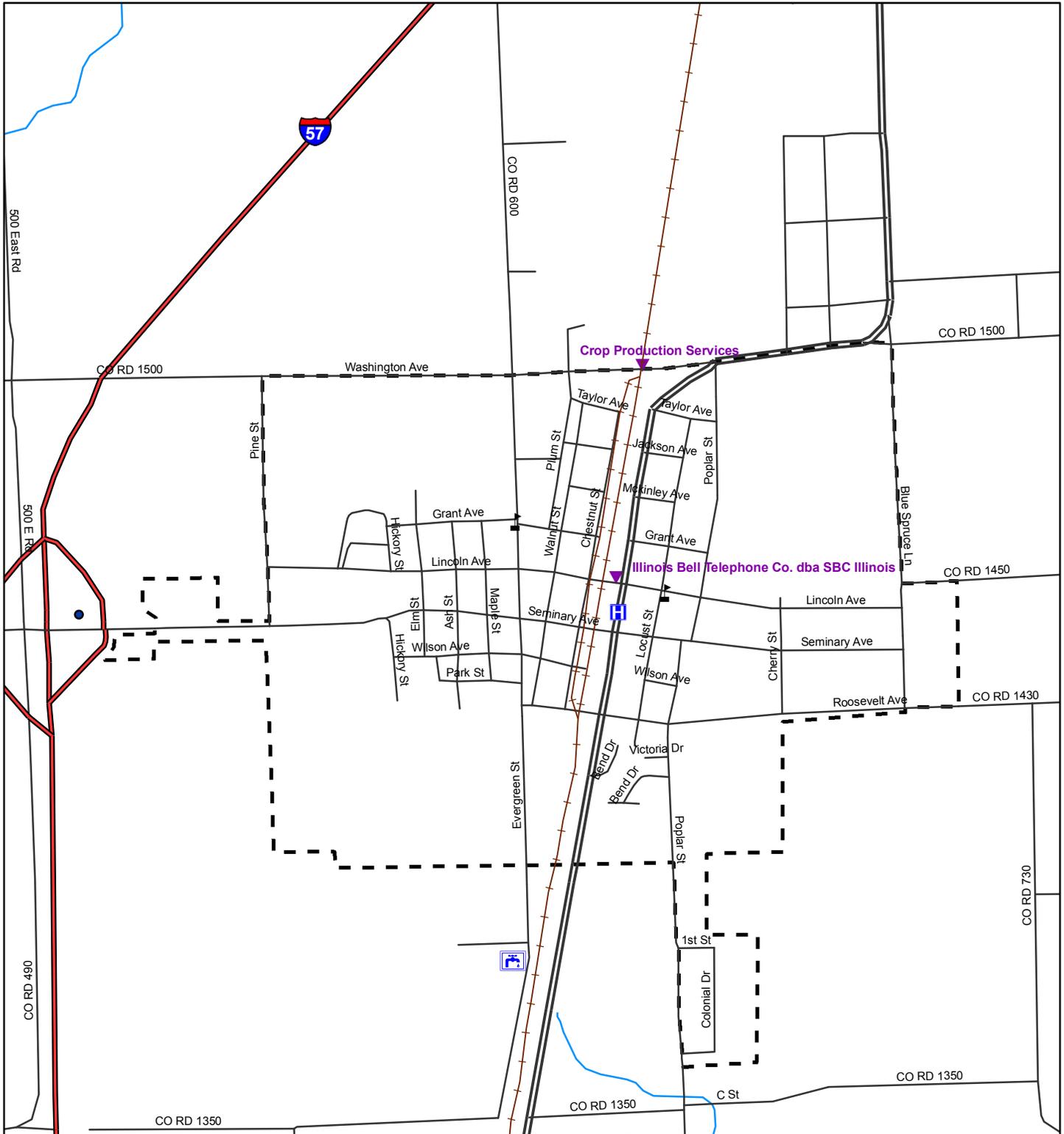
Iroquois County Multi-Hazard Mitigation Plan

Village of Milford Critical Facilities and Mitigation Action Map



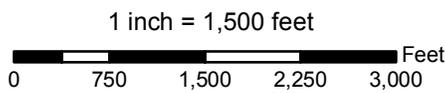
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| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Wastewater Treatment Plant | |
| Community Critical Facilities | |



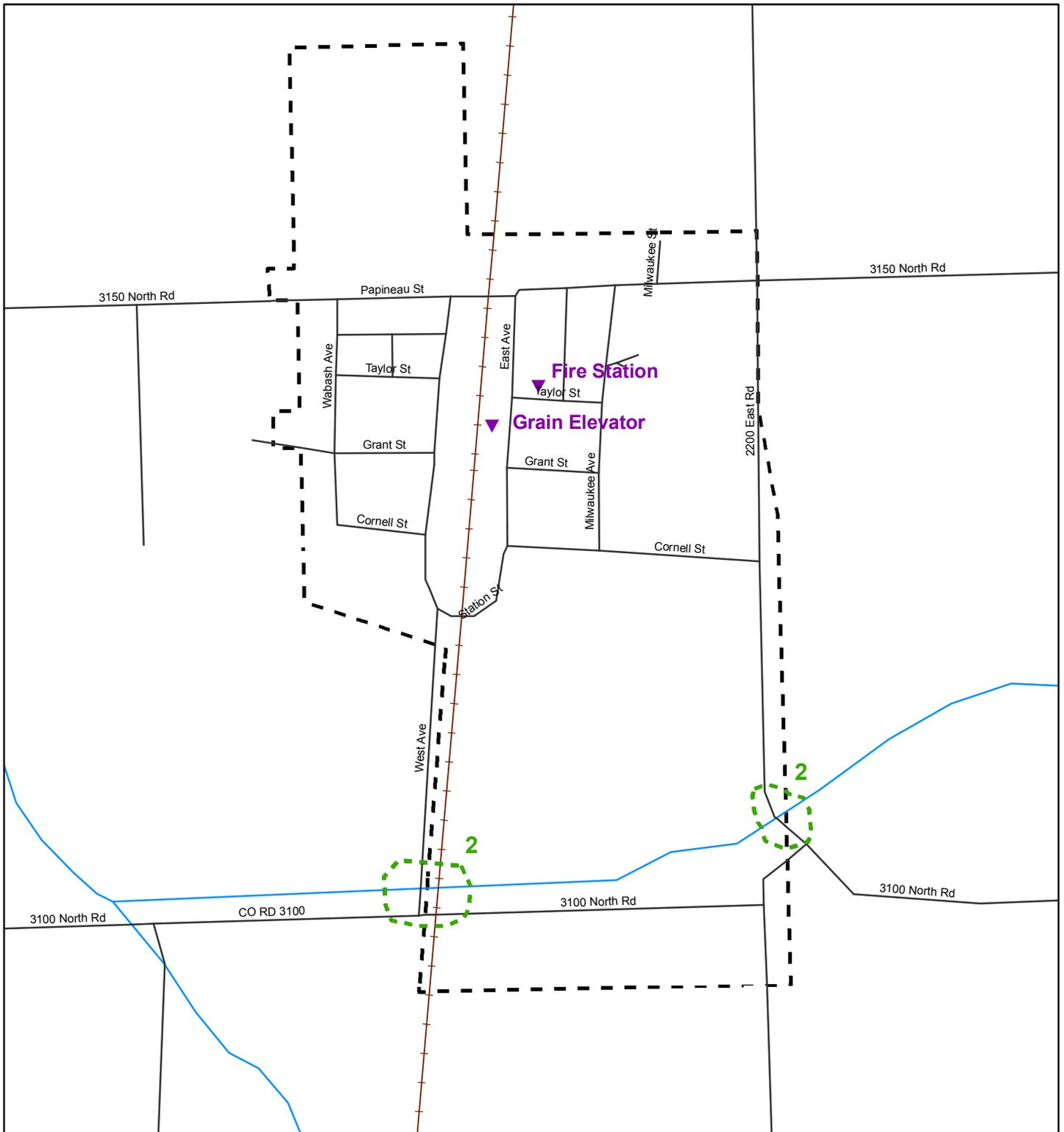
Iroquois County Multi-Hazard Mitigation Plan

Village of Onarga Critical Facilities and Mitigation Action Map



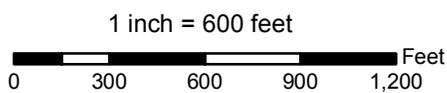
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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
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| School | County Boundary |
| Community Critical Facilities | |



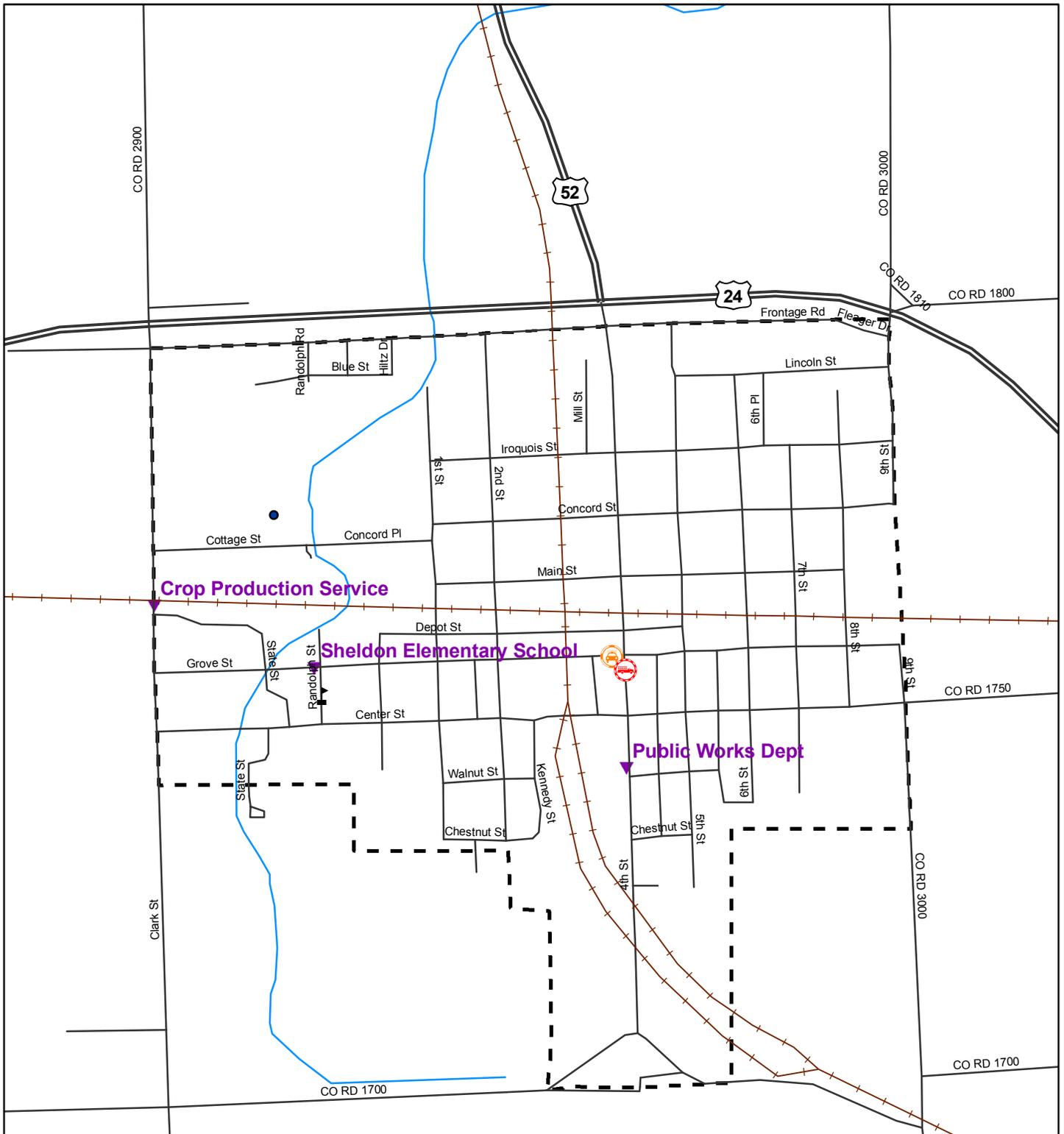
Iroquois County Multi-Hazard Mitigation Plan

Village of Papineau Critical Facilities and Mitigation Action Map



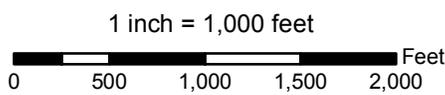
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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



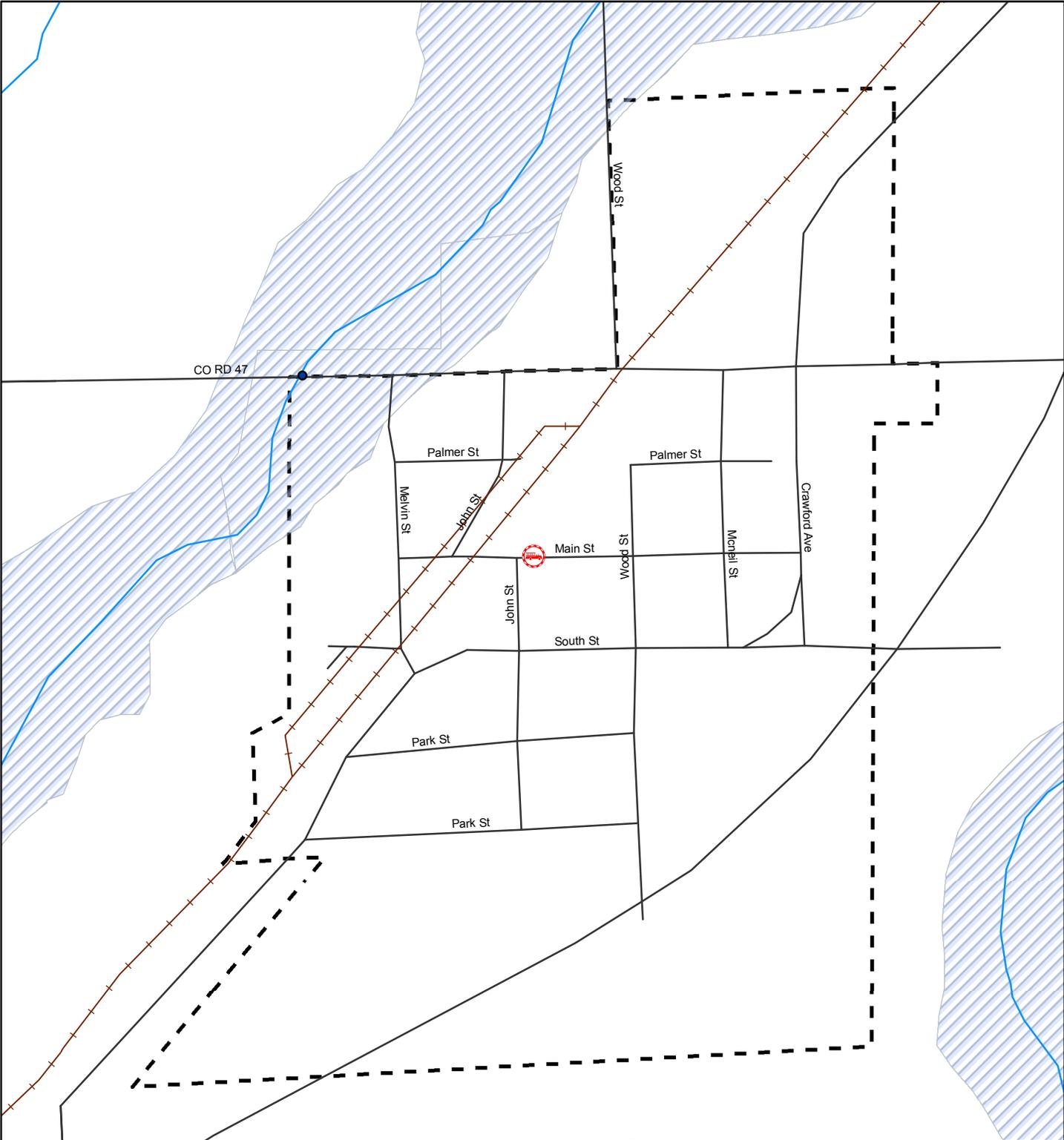
Iroquois County Multi-Hazard Mitigation Plan

Village of Sheldon Critical Facilities and Mitigation Action Map



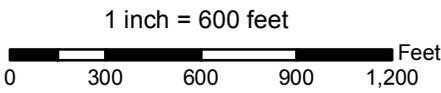
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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



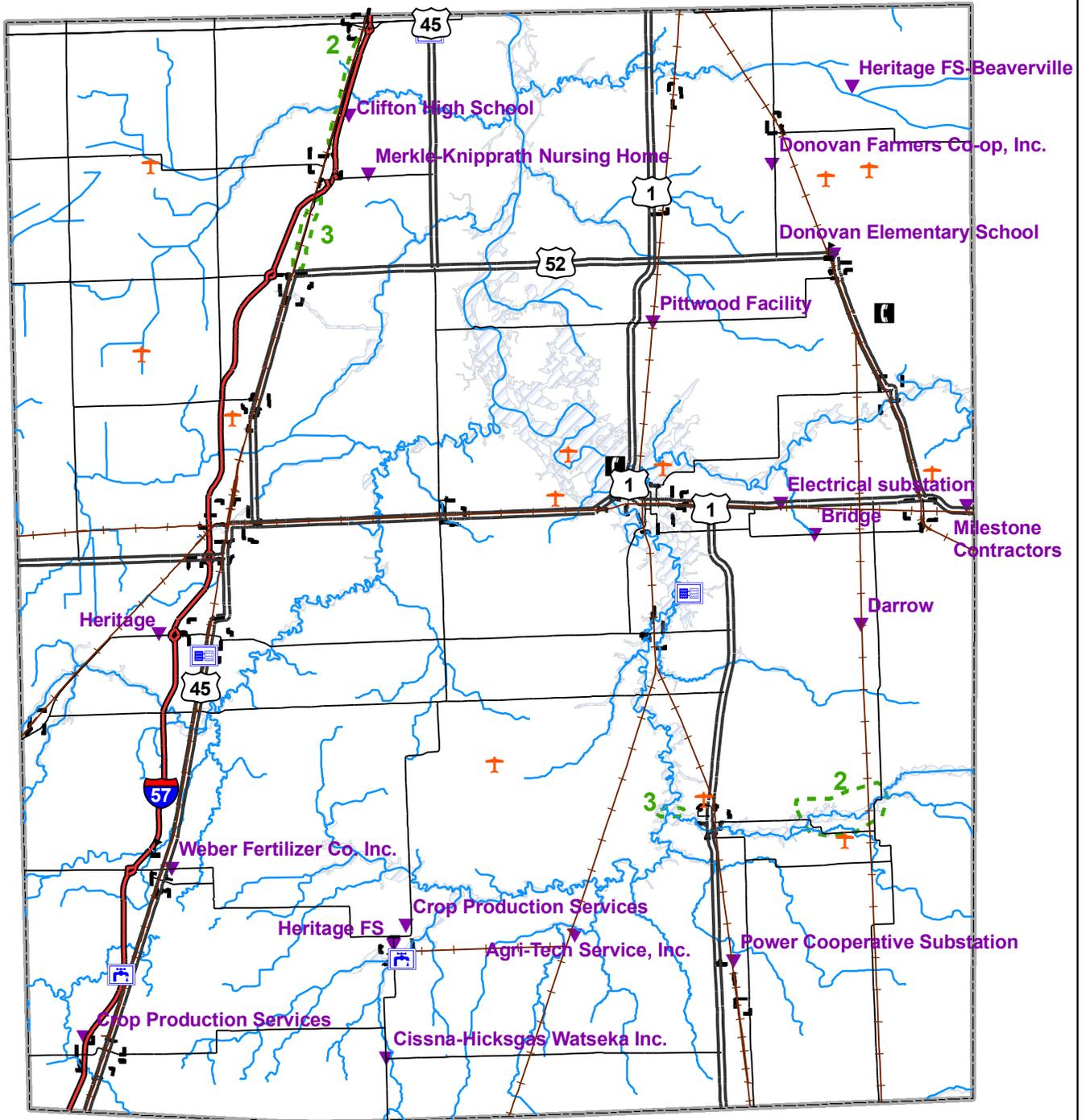
Iroquois County Multi-Hazard Mitigation Plan

Village of Thawville Critical Facilities and Mitigation Action Map



Legend

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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |

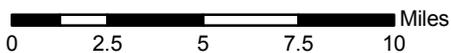


Iroquois County Multi-Hazard Mitigation Plan

Iroquois County Critical Facilities and Mitigation Action Map

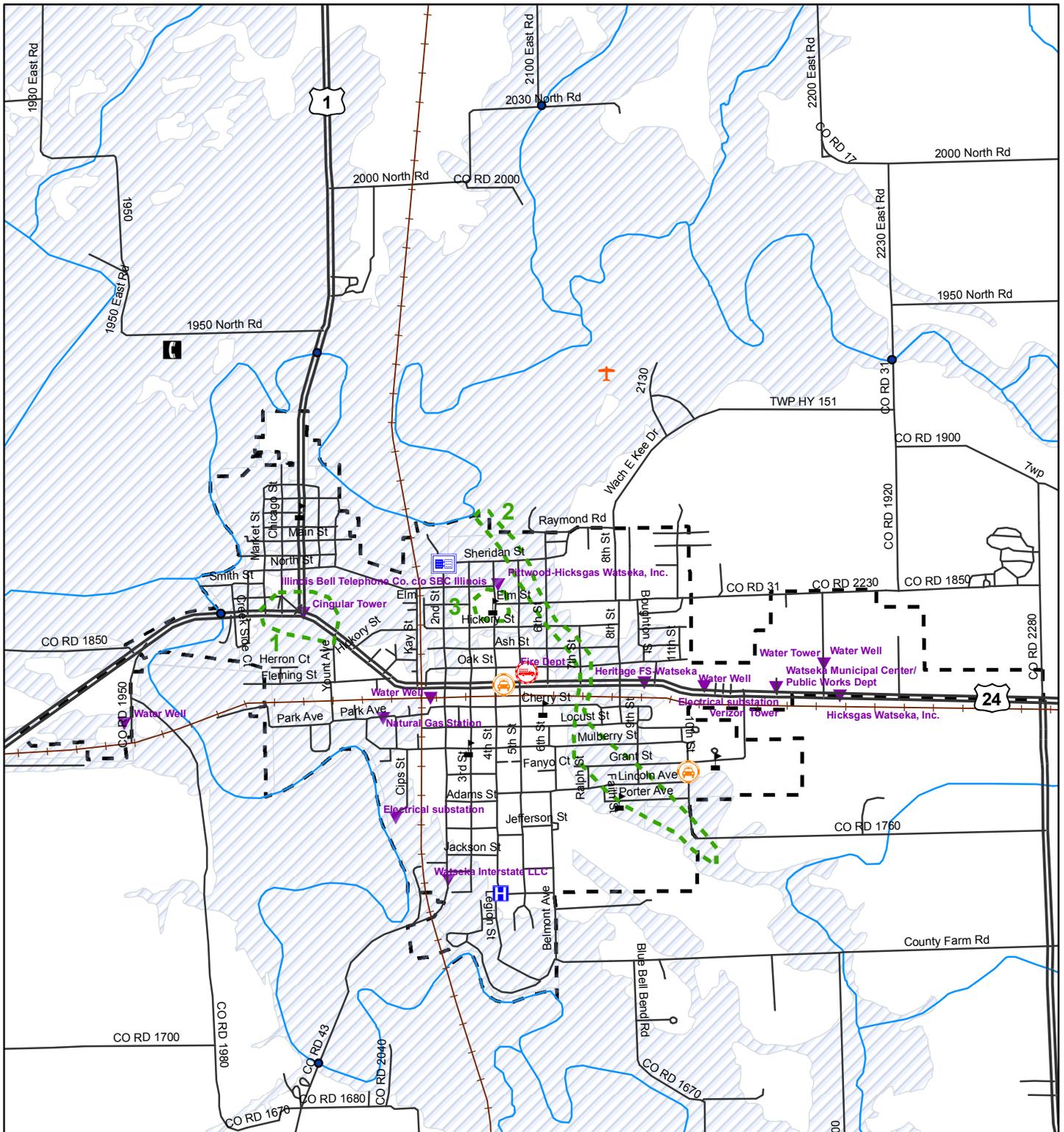


1 inch = 5 miles



Legend

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| | Airports | | Interstate |
| | Care Facility | | Highway |
| | Communication Facility | | Local Roads |
| | Fire Station | | Railroad |
| | Police Station | | Streams |
| | Water Treatment Plant | | Mitigation Actions |
| | School | | 1% Annual Floodzone |
| | Wastewater Treatment Plant | | Corporate Limits |
| | Community Critical Facilities | | County Boundary |

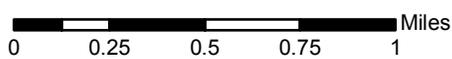


Iroquois County Multi-Hazard Mitigation Plan

City of Watseka Critical Facilities and Mitigation Action Map



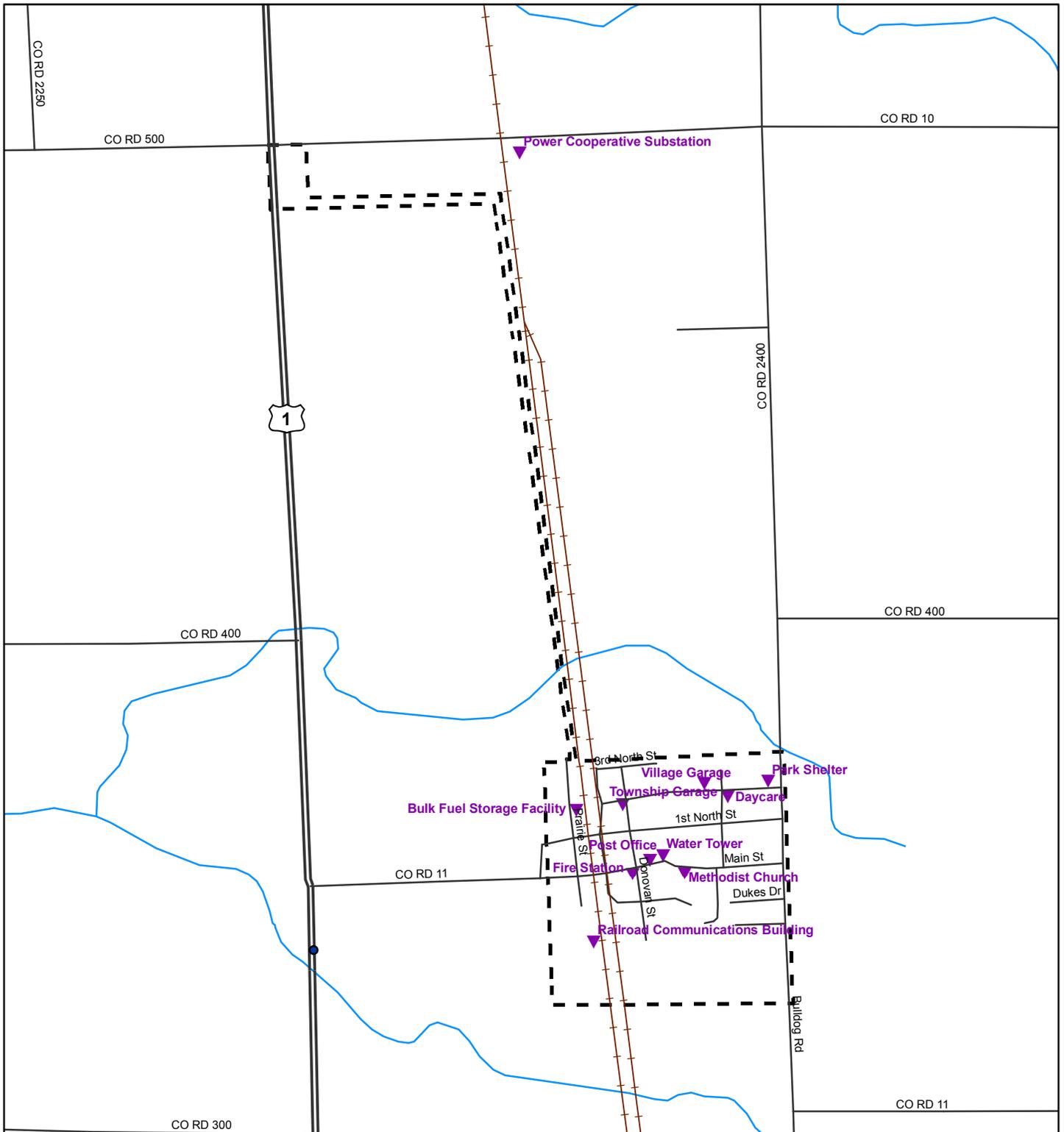
1 inch = 0.5 miles



Legend

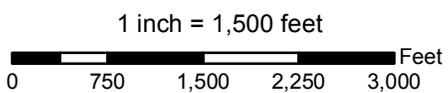
- Airports
- Care Facility
- Communication Facility
- Fire Station
- Bridge
- Police Station
- Water Treatment Plant
- Wastewater Treatment Plant
- School
- Community Critical Facilities
- Interstate
- Highway
- Local Roads
- Railroad
- Streams
- Mitigation Actions
- 1% Annual Floodzone
- Corporate Limits
- County Boundary

CO RD 2280



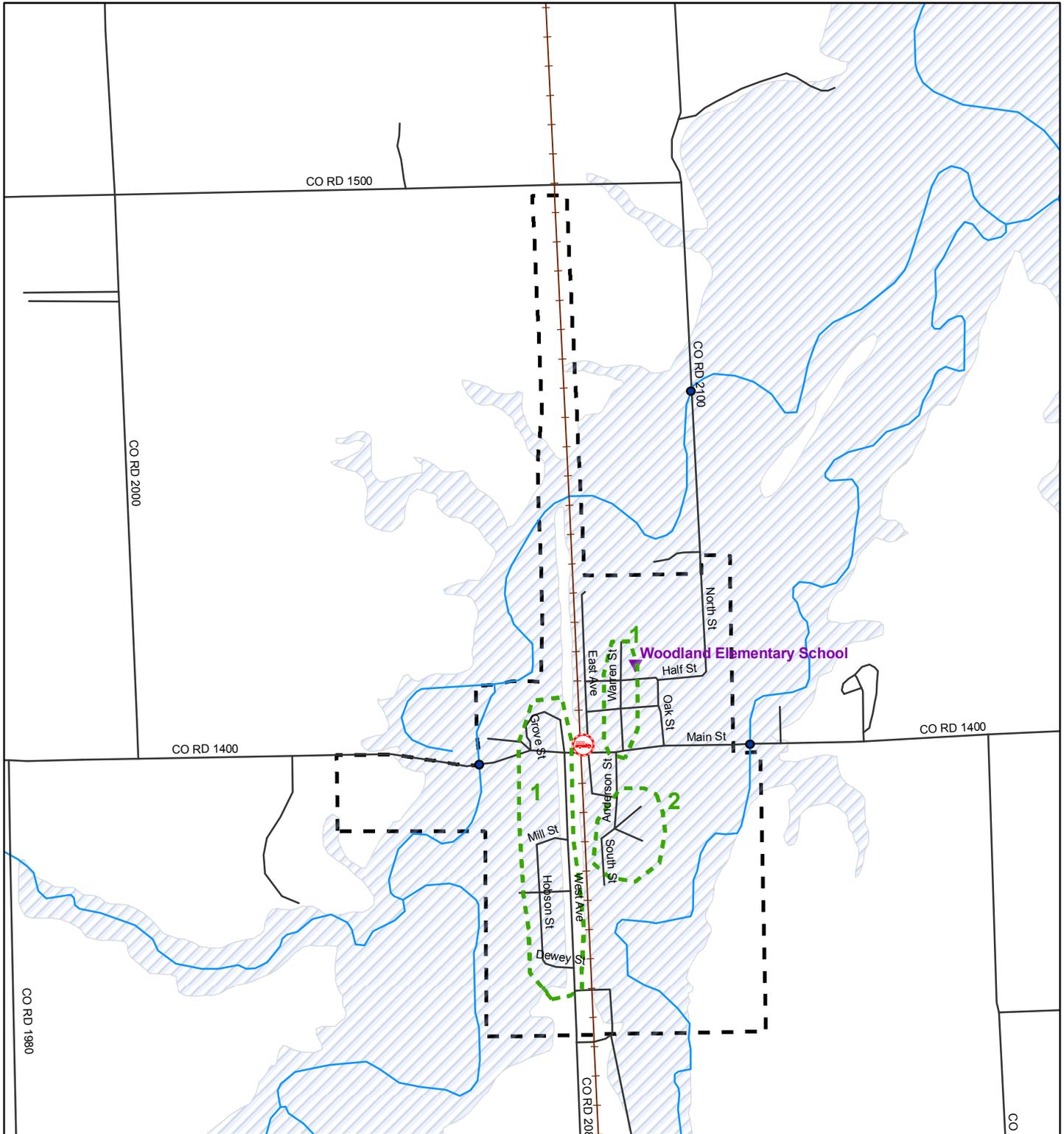
Iroquois County Multi-Hazard Mitigation Plan

Village of Wellington Critical Facilities and Mitigation Action Map



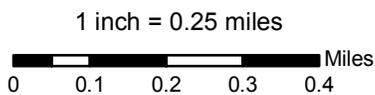
Legend

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| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| School | Corporate Limits |
| Wastewater Treatment Plant | County Boundary |
| Community Critical Facilities | |



Iroquois County Multi-Hazard Mitigation Plan

Village of Woodland Critical Facilities and Mitigation Action Map



Legend

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|-------------------------------|---------------------|
| Airports | Interstate |
| Care Facility | Highway |
| Communication Facility | Local Roads |
| Fire Station | Railroad |
| Bridge | Streams |
| Police Station | Mitigation Actions |
| Water Treatment Plant | 1% Annual Floodzone |
| Wastewater Treatment Plant | Corporate Limits |
| School | County Boundary |
| Community Critical Facilities | |

Appendix H

NCDC

| Item Number | Location | Time | Type | Magnitude | Deaths | Injuries | Property Damage (\$) | Crop Damage (\$) |
|-------------|----------|----------|-----------|-----------|--------|----------|----------------------|------------------|
| 1 | IROQUOIS | 3:15 PM | Tornado | F2 | 0 | 2 | 250,000 | 0 |
| 2 | IROQUOIS | 5:55 PM | Tornado | F3 | 0 | 6 | 250,000 | 0 |
| 3 | IROQUOIS | 9:45 PM | Tornado | F2 | 0 | 0 | 25,000 | 0 |
| 4 | IROQUOIS | 10:50 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 5 | IROQUOIS | 10:50 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 6 | IROQUOIS | 12:25 PM | Tornado | F1 | 0 | 0 | 0 | 0 |
| 7 | IROQUOIS | 4:00 PM | Hail | 1.25 in. | 0 | 0 | 0 | 0 |
| 8 | IROQUOIS | 4:30 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 9 | IROQUOIS | 5:50 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 10 | IROQUOIS | 4:30 PM | Hail | 1.50 in. | 0 | 0 | 0 | 0 |
| 11 | IROQUOIS | 6:18 PM | Tstm Wind | 60 kts. | 0 | 0 | 0 | 0 |
| 12 | IROQUOIS | 12:52 PM | Tstm Wind | 58 kts. | 0 | 0 | 0 | 0 |
| 13 | IROQUOIS | 5:00 AM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 14 | IROQUOIS | 6:35 PM | Tornado | F2 | 0 | 2 | 25,000 | 0 |
| 15 | IROQUOIS | 6:28 PM | Tstm Wind | 63 kts. | 0 | 0 | 0 | 0 |
| 16 | IROQUOIS | 3:00 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 17 | IROQUOIS | 5:50 PM | Tornado | F3 | 0 | 0 | 2,500,000 | 0 |
| 18 | IROQUOIS | 7:50 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 19 | IROQUOIS | 12:55 AM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 20 | IROQUOIS | 3:10 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 21 | IROQUOIS | 8:15 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 22 | IROQUOIS | 5:05 AM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 23 | IROQUOIS | 9:00 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 24 | IROQUOIS | 9:50 PM | Tstm Wind | 70 kts. | 0 | 0 | 0 | 0 |
| 25 | IROQUOIS | 6:00 PM | Tornado | F2 | 0 | 0 | 25,000 | 0 |
| 26 | IROQUOIS | 12:00 PM | Tornado | F1 | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|----|----------|----------|-----------|----------|---|---|---------|---|
| 27 | IROQUOIS | 4:45 AM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 28 | IROQUOIS | 7:20 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 29 | IROQUOIS | 7:20 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 30 | IROQUOIS | 7:20 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 31 | IROQUOIS | 7:30 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 32 | IROQUOIS | 7:35 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 33 | IROQUOIS | 7:45 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 34 | IROQUOIS | 3:25 PM | Tornado | F2 | 0 | 0 | 25,000 | 0 |
| 35 | IROQUOIS | 11:45 AM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 36 | IROQUOIS | 12:20 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 37 | IROQUOIS | 9:10 PM | Hail | 1.50 in. | 0 | 0 | 0 | 0 |
| 38 | IROQUOIS | 4:26 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 39 | IROQUOIS | 9:15 PM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 40 | IROQUOIS | 1:00 AM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 41 | IROQUOIS | 3:35 PM | Tornado | F2 | 0 | 0 | 25,000 | 0 |
| 42 | IROQUOIS | 3:45 PM | Tornado | F2 | 0 | 0 | 25,000 | 0 |
| 43 | IROQUOIS | 1:15 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 44 | IROQUOIS | 7:08 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 45 | IROQUOIS | 6:40 PM | Tornado | F1 | 0 | 0 | 250,000 | 0 |
| 46 | IROQUOIS | 9:00 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 47 | IROQUOIS | 3:04 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 48 | IROQUOIS | 2:00 PM | Hail | 3.00 in. | 0 | 0 | 0 | 0 |
| 49 | IROQUOIS | 9:00 PM | Hail | 2.00 in. | 0 | 0 | 0 | 0 |
| 50 | IROQUOIS | 4:20 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 51 | IROQUOIS | 4:00 PM | Tstm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 52 | IROQUOIS | 2:20 PM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 53 | IROQUOIS | 7:15 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 54 | IROQUOIS | 8:45 | Tstm Wind | 56 kts. | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|----|----------|----------|--------------------|----------|---|---|-----------|---|
| | | PM | | | | | | |
| 55 | IROQUOIS | 2:00 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 56 | IROQUOIS | 3:40 AM | Tstm Wind | 70 kts. | 0 | 0 | 0 | 0 |
| 57 | IROQUOIS | 12:45 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 58 | IROQUOIS | 1:30 PM | Tstm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 59 | IROQUOIS | 2:20 PM | Tornado | F1 | 0 | 0 | 25,000 | 0 |
| 60 | IROQUOIS | 2:20 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 61 | IROQUOIS | 8:30 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 62 | IROQUOIS | 6:22 AM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 63 | IROQUOIS | 5:27 PM | Tornado | F2 | 0 | 0 | 250,000 | 0 |
| 64 | IROQUOIS | 5:55 PM | Tornado | F1 | 0 | 0 | 2,500,000 | 0 |
| 65 | IROQUOIS | 10:51 PM | Tornado | F1 | 0 | 0 | 2,500,000 | 0 |
| 66 | IROQUOIS | 6:35 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 67 | IROQUOIS | 6:00 PM | Tstm Wind | 57 kts. | 0 | 0 | 0 | 0 |
| 68 | IROQUOIS | 3:40 PM | Tornado | F2 | 0 | 1 | 250,000 | 0 |
| 69 | IROQUOIS | 3:45 PM | Tornado | F1 | 0 | 0 | 25,000 | 0 |
| 70 | IROQUOIS | 3:45 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 71 | IROQUOIS | 3:45 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 72 | IROQUOIS | 4:00 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 73 | IROQUOIS | 3:00 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 74 | IROQUOIS | 10:47 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 75 | IROQUOIS | 5:39 PM | Tstm Wind | 0 kts. | 0 | 2 | 0 | 0 |
| 76 | IROQUOIS | 6:00 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 77 | Buckley | 1:55 PM | Thunderstorm Winds | 0 kts. | 0 | 0 | 50,000 | 0 |
| 78 | Watseka | 7:59 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 79 | Gilman | 8:35 PM | Thunderstorm Winds | 0 kts. | 0 | 0 | 0 | 0 |
| 80 | Watseka | 8:45 PM | Tornado | F1 | 0 | 0 | 50,000 | 0 |
| 81 | Loda | 9:47 | Hail | 1.50 in. | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|-----|--|----------|--------------------|----------|-----|---|--------|---|
| | | PM | | | | | | |
| 82 | Chebanse | 2:35 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 83 | Buckley | 11:30 PM | Thunderstorm Winds | 0 kts. | 0 | 0 | 0 | 0 |
| 84 | Wellington | 11:45 PM | Thunderstorm Winds | 0 kts. | 0 | 0 | 0 | 0 |
| 85 | Gilman | 10:00 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 86 | Chebanse | 10:05 AM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 87 | Clifton | 10:00 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 88 | Papineau | 8:25 PM | Tornado | F0 | 0 | 0 | 5,000 | 0 |
| 89 | Watseka | 2:30 PM | Lightning | N/A | 0 | 1 | 0 | 0 |
| 90 | Milford | 3:51 PM | Tornado | F1 | 0 | 0 | 10,000 | 0 |
| 91 | Northeast Illinois | 11:00 AM | Heat | N/A | 583 | 0 | 0 | 0 |
| 92 | ILZ003>006 - 008 - 010>014 - 019>023 - 032 - 033 - 039 | 12:00 PM | High Wind | 0 kts. | 2 | 0 | 0 | 0 |
| 93 | ILZ003>006 - 008 - 010>014 - 019>023 - 032 - 033 - 039 | 12:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 94 | Gilman | 1:15 PM | Tstm Wind | 0 kts. | 0 | 0 | 10,000 | 0 |
| 95 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 12:00 AM | Extreme Cold | N/A | 3 | 0 | 0 | 0 |
| 96 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 12:00 AM | High Wind | 48 kts. | 0 | 0 | 0 | 0 |
| 97 | Southern | 5:00 PM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 98 | Countywide | 6:10 PM | Tstm Wind | 53 kts. | 0 | 1 | 0 | 0 |
| 99 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 6:00 AM | Winter Storm | N/A | 5 | 0 | 0 | 0 |
| 100 | Watseka | 4:59 PM | Tstm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 101 | Watseka | 10:20 PM | Tstm Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 102 | Ashkum | 2:50 PM | Tstm Wind | 59 kts. | 0 | 0 | 0 | 0 |
| 103 | Countywide | 4:10 | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |

| | | PM | | | | | | |
|-----|---|-------------|-------------------------|----------|---|---|---|---|
| 104 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 12:00 PM | High Wind | 56 kts. | 0 | 0 | 0 | 0 |
| 105 | ILZ006 - 012>014 - 019>021 - 023 - 032>033 - 039 | 4:00 AM | Heavy Snow | N/A | 0 | 0 | 0 | 0 |
| 106 | Countywide | 5:00 AM | Urban/sml Stream Fld | N/A | 0 | 0 | 0 | 0 |
| 107 | Crescent City | 6:45 AM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 108 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 7:30 AM | High Wind | 56 kts. | 0 | 4 | 0 | 0 |
| 109 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 7:00 PM | Heavy Snow | N/A | 1 | 0 | 0 | 0 |
| 110 | ILZ023 - 033 | 4:00 PM | High Wind | 59 kts. | 0 | 0 | 0 | 0 |
| 111 | ILZ003 - 006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 5:00 PM | Heavy Snow | N/A | 0 | 0 | 0 | 0 |
| 112 | Crescent City | 8:15 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 113 | Watseka | 1:34 PM | Tstm Wind | 51 kts. | 0 | 0 | 0 | 0 |
| 114 | Wellington | 2:45 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 115 | Watseka | 7:30 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 116 | ILZ003 - 008 - 010>011 - 019>023 - 032>033 - 039 | 12:00 PM | Heavy Snow | N/A | 0 | 0 | 0 | 0 |
| 117 | Clifton | 6:15 AM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 118 | Watseka | 6:30 AM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 119 | Loda | 9:05 AM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 120 | Gilman | 9:30 AM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |
| 121 | Onarga | 9:30 AM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |
| 122 | Woodland | 9:30 AM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |
| 123 | Wellington | 10:45 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 124 | Clifton | 4:05 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|-----|--|----------|----------------------|----------|---|---|---------|---|
| 125 | Papineau | 4:15 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 126 | Papineau | 6:00 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 127 | Ashkum | 6:20 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 128 | Ashkum | 2:10 PM | Tstm Wind | 60 kts. | 0 | 0 | 0 | 0 |
| 129 | Chebalse | 1:30 PM | Tstm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 130 | Clifton | 1:45 PM | Tstm Wind | 56 kts. | 0 | 0 | 0 | 0 |
| 131 | Crescent City | 1:45 PM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 132 | Watseka | 1:30 PM | Lightning | N/A | 0 | 0 | 0 | 0 |
| 133 | Watseka | 4:45 AM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 134 | Chebalse | 10:17 PM | Tstm Wind | 70 kts. | 0 | 0 | 0 | 0 |
| 135 | ILZ023 - 032>033 - 039 | 3:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 136 | ILZ023 - 032>033 - 039 | 9:00 AM | Heavy Snow | N/A | 0 | 0 | 0 | 0 |
| 137 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 4:00 AM | Strong Wind | 0 kts. | 0 | 0 | 0 | 0 |
| 138 | Cissna Park | 9:18 PM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 139 | Papineau | 2:10 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 140 | Watseka | 12:30 PM | Flash Flood | N/A | 0 | 0 | 25,000 | 0 |
| 141 | Fountain Creek | 7:30 PM | Tstm Wind | 55 kts. | 0 | 0 | 15,000 | 0 |
| 142 | Countywide | 2:40 PM | Tstm Wind | 65 kts. | 0 | 0 | 40,000 | 0 |
| 143 | Beaverville | 7:00 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 144 | Ashkum | 12:07 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 145 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 11:52 AM | High Wind | 51 kts. | 4 | 4 | 200,000 | 0 |
| 146 | Countywide | 3:00 AM | Urban/sml Stream Fld | N/A | 0 | 0 | 0 | 0 |
| 147 | Ashkum | 2:00 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 148 | Sheldon | 7:30 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 149 | Countywide | 3:05 AM | Flash Flood | N/A | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|-----|--|----------|-------------------------|----------|---|---|---|---|
| 150 | ILZ033 - 039 | 8:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 151 | Southwest Portion | 4:20 AM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 152 | ILZ023 - 032>033 - 039 | 6:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 153 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 1:00 AM | Extreme Cold/wind Chill | N/A | 1 | 0 | 0 | 0 |
| 154 | ILZ032>033 - 039 | 8:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 155 | Clifton | 8:45 PM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 156 | Onarga | 4:50 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 157 | Loda | 5:06 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 158 | Ashkum | 5:15 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 159 | Ashkum | 9:36 PM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 160 | Gilman | 3:15 PM | Tstm Wind | 56 kts. | 0 | 0 | 0 | 0 |
| 161 | Pittwood | 3:35 PM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 162 | Watseka | 9:30 PM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 163 | Ashkum | 2:35 AM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 164 | Sheldon | 12:55 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 165 | Ashkum | 2:48 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 166 | Ashkum | 2:48 PM | Tstm Wind | 61 kts. | 0 | 0 | 0 | 0 |
| 167 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 2:00 PM | High Wind | 51 kts. | 0 | 2 | 0 | 0 |
| 168 | ILZ033 | 2:00 PM | Extreme Cold/wind Chill | N/A | 1 | 0 | 0 | 0 |
| 169 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 6:00 PM | Extreme Cold/wind Chill | N/A | 0 | 0 | 0 | 0 |
| 170 | Ashkum | 6:03 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 171 | Crescent City | 5:05 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 172 | Crescent City | 6:48 PM | Tstm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 173 | ILZ023 - 033 | 7:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|-----|--|----------|--------------|----------|---|---|---------|---|
| 174 | Countywide | 1:30 AM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 175 | Loda | 2:00 PM | Tstm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 176 | ILZ032>033 - 039 | 7:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 177 | ILZ019>023 - 032>033 - 039 | 1:05 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 178 | Chebanse | 5:14 PM | Hail | 2.75 in. | 0 | 0 | 0 | 0 |
| 179 | Watseka | 5:35 PM | Tstm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 180 | Watseka | 5:48 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 181 | Sheldon | 5:50 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 182 | Wellington | 1:13 PM | Tstm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 183 | Woodland | 2:00 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 184 | Buckley | 7:20 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 185 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 12:00 AM | Drought | N/A | 0 | 0 | 0 | 0 |
| 186 | Papineau | 7:05 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 187 | Watseka | 7:30 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 188 | Woodland | 11:45 PM | Lightning | N/A | 0 | 0 | 100,000 | 0 |
| 189 | Onarga | 5:30 PM | Tstm Wind | 51 kts. | 0 | 0 | 0 | 0 |
| 190 | Chebanse | 4:37 PM | Hail | 1.50 in. | 0 | 0 | 0 | 0 |
| 191 | Pittwood | 4:35 PM | Tornado | F1 | 0 | 0 | 20,000 | 0 |
| 192 | Milford | 10:30 PM | Tstm Wind | 60 kts. | 0 | 0 | 20,000 | 0 |
| 193 | Crescent City | 4:06 AM | Tstm Wind | 55 kts. | 0 | 0 | 10,000 | 0 |
| 194 | Cissna Park | 6:55 PM | Tstm Wind | 50 kts. | 0 | 0 | 6,000 | 0 |
| 195 | Claytonville | 7:00 PM | Tstm Wind | 50 kts. | 0 | 0 | 1,000 | 0 |
| 196 | Papineau | 7:15 PM | Tstm Wind | 55 kts. | 0 | 0 | 40,000 | 0 |
| 197 | Onarga | 4:55 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 198 | Gilman | 5:01 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 199 | Cissna Park | 5:12 PM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|-----|--|----------|-------------------|----------|---|---|---------|--------|
| 200 | Milford | 5:20 PM | Hail | 2.50 in. | 0 | 0 | 300,000 | 0 |
| 201 | Ashkum | 4:41 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 202 | Martinton | 5:20 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 203 | Beaverville | 5:56 PM | Tornado | F0 | 0 | 0 | 0 | 0 |
| 204 | Onarga | 11:48 AM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |
| 205 | Crescent City | 4:35 PM | Tstm Wind | 56 kts. | 0 | 0 | 0 | 0 |
| 206 | Milford | 4:35 PM | Tstm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 207 | Milford | 4:38 PM | Tstm Wind | 55 kts. | 0 | 0 | 30,000 | 0 |
| 208 | Martinton | 4:40 PM | Tstm Wind | 50 kts. | 0 | 0 | 1,000 | 0 |
| 209 | Stockland | 4:50 PM | Tstm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 210 | Clifton | 5:30 PM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 211 | Wellington | 8:55 PM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 212 | Gilman | 1:00 PM | Tstm Wind | 55 kts. | 0 | 0 | 700,000 | 12,000 |
| 213 | Watseka | 8:12 AM | Tstm Wind | 55 kts. | 0 | 0 | 75,000 | 0 |
| 214 | Donovan | 23:24 PM | Hail | 0.75 in. | 0 | 0 | 0 | 0 |
| 215 | ILZ011 - 020>023 - 032>033 - 039 | 7:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 216 | ILZ003>006 - 008 - 010>014 - 019>023 - 032>033 - 039 | 2:00 AM | Blizzard | N/A | 0 | 0 | 0 | 0 |
| 217 | Watseka | 4:55 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 218 | Chebanse | 5:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 219 | Gilman | 5:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 220 | Onarga | 5:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 221 | Watseka | 5:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 222 | Cissna Park | 14:02 PM | Thunderstorm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 223 | Watseka | 14:05 PM | Thunderstorm Wind | 55 kts. | 0 | 0 | 10,000 | 0 |
| 224 | Watseka | 14:10 PM | Thunderstorm Wind | 50 kts. | 0 | 0 | 0 | 0 |
| 225 | Sheldon | 14:15 PM | Thunderstorm Wind | 60 kts. | 0 | 0 | 20,000 | 0 |

| | | | | | | | | |
|-----|--|-------------|----------------------|----------|---|---|-----------|---|
| 226 | Danforth | 17:14 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 227 | ILZ033 | 4:40 AM | Ice Storm | N/A | 0 | 0 | 0 | 0 |
| 228 | Milford | 9:00 AM | Flash Flood | N/A | 0 | 1 | 15,000 | 0 |
| 229 | Chebanse | 15:00 PM | Flood | N/A | 0 | 0 | 3,000,000 | 0 |
| 230 | ILZ022 - 033 - 039 | 18:30 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 231 | ILZ005 - 011>014 - 019>023 - 032>033 - 039 | 12:00 AM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 232 | ILZ019 - 022 - 033 | 6:00 AM | Dense Fog | N/A | 0 | 0 | 0 | 0 |
| 233 | La Hogue | 22:00 PM | Flash Flood | N/A | 0 | 0 | 1,000,000 | 0 |
| 234 | La Hogue | 7:00 AM | Flood | N/A | 0 | 0 | 0 | 0 |
| 235 | ILZ033 - 039 | 17:10 PM | Strong Wind | 43 kts. | 0 | 0 | 15,000 | 0 |
| 236 | ILZ014 - 033 | 11:00 AM | Strong Wind | 43 kts. | 0 | 0 | 100,000 | 0 |
| 237 | Onarga | 15:01 PM | Thunderstorm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 238 | Cissna Park | 15:10 PM | Thunderstorm Wind | 55 kts. | 0 | 0 | 3,000 | 0 |
| 239 | Goodwine | 16:40 PM | Thunderstorm Wind | 55 kts. | 0 | 0 | 10,000 | 0 |
| 240 | Bryce | 17:03 PM | Flash Flood | N/A | 0 | 0 | 25,000 | 0 |
| 241 | Bryce | 21:00 PM | Flood | N/A | 0 | 0 | 0 | 0 |
| 242 | Del Rey | 15:15 PM | Flood | N/A | 0 | 0 | 0 | 0 |
| 243 | Sheldon | 15:15 PM | Flood | N/A | 0 | 0 | 0 | 0 |
| 244 | Watseka | 18:19 PM | Hail | 0.88 in. | 0 | 0 | 0 | 0 |
| 245 | Ashkum | 19:09 PM | Hail | 1.75 in. | 0 | 0 | 0 | 0 |
| 246 | Crescent City | 15:40 PM | Thunderstorm Wind | 60 kts. | 0 | 0 | 0 | 0 |
| 247 | Loda | 15:58 PM | Thunderstorm Wind | 55 kts. | 0 | 0 | 10,000 | 0 |
| 248 | Gilman | 10:14 AM | Hail | 1.00 in. | 0 | 0 | 0 | 0 |
| 249 | Clifton | 7:00 AM | Thunderstorm Wind | 55 kts. | 0 | 0 | 0 | 0 |
| 250 | Chebanse | 7:13 AM | Thunderstorm Wind | 55 kts. | 0 | 0 | 1,000 | 0 |
| 251 | Papineau | 7:22 AM | Thunderstorm Wind | 55 kts. | 0 | 0 | 10,000 | 0 |

| | | | | | | | | |
|----------------|---------------------------------------|----------|-------------------|---------|------------|-----------|------------------|---------------|
| 252 | Watseka | 5:15 AM | Thunderstorm Wind | 52 kts. | 0 | 0 | 0 | 0 |
| 253 | Pittwood | 5:17 AM | Thunderstorm Wind | 56 kts. | 0 | 0 | 0 | 0 |
| 254 | Watseka | 5:19 AM | Thunderstorm Wind | 61 kts. | 0 | 0 | 1,000 | 0 |
| 255 | Sheldon | 5:30 AM | Thunderstorm Wind | 61 kts. | 0 | 0 | 1,000 | 0 |
| 256 | Hooper | 10:00 AM | Flash Flood | N/A | 0 | 0 | 1,000,000 | 0 |
| 257 | Chebanse | 15:30 PM | Flood | N/A | 0 | 0 | 0 | 0 |
| 258 | ILZ008 - 010 - 013 - 019>023 - 033 | 22:00 PM | Ice Storm | N/A | 0 | 0 | 0 | 0 |
| 259 | ILZ008 - 010 - 013 - 019>023 - 033 | 22:00 PM | Winter Storm | N/A | 0 | 0 | 0 | 0 |
| 260 | Onarga | 14:00 PM | Thunderstorm Wind | 50 kts. | 0 | 0 | 3,000 | 0 |
| 261 | Ashkum | 14:04 PM | Thunderstorm Wind | 65 kts. | 0 | 0 | 0 | 0 |
| 262 | Cissna Park | 14:15 PM | Thunderstorm Wind | 65 kts. | 0 | 0 | 50,000 | 0 |
| 263 | L Erable | 20:00 PM | Flood | N/A | 0 | 0 | 0 | 0 |
| 264 | Milford | 20:00 PM | Flash Flood | N/A | 0 | 0 | 0 | 0 |
| 265 | Gilman | 22:00 PM | Thunderstorm Wind | 50 kts. | 0 | 0 | 2,000 | 0 |
| 266 | L Erable | 23:00 PM | Thunderstorm Wind | 61 kts. | 0 | 0 | 100,000 | 0 |
| TOTALS: | | | | | 600 | 26 | 1,603,400 | 12,000 |

Appendix I

Mitigation Actions

1.1 JURISDICTIONAL MITIGATION ACTIVITIES

Mitigation goals and actions for each community are summarized in the following tables. Actions identified by each community will be reviewed annually for purposes of tracking progress and or revising implementation approaches.

The following table lists mitigation actions for each jurisdiction. These actions would mitigate the associated hazard and support the corresponding goals of the community. Below are descriptions and definitions of each category within the following tables.

- **Item Number:** Most of the actions identified correspond to a specific area, thus this number corresponds to the numbers on each jurisdiction's map.
- **Hazard:** The primary hazard(s) addressed by each mitigation activity.
- **Type of Activity or Project:** This category is a description of the identified project.
- **Responsible Agency:** The lead implementer or contact is the person, department, or agency responsible for each action listed.
- **Implementation Timeline:** The proposed schedule or time frame for completion of each action or project.
- **Funding Source:** Potential funding source of the identified action item.
- **Priority:** The priority rankings for each activity.
- **Activity Categorization:** The type of goal which the project was designed to achieve. These activities are defined above in Section 4.3.1.
- **Benefit-Cost:** A qualitative description of the expected benefits and costs of implementation of the project. The benefits and costs were defined as described in Section 4.4.

Table I-1. Countywide Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------------------|--|--------------------|-------------------------|-----------------------------|----------|-------------------------|---------------|
| 1 | Tornado & Severe Storms | Educate citizens on how to prepare for and respond to severe weather. | ESDA | 2 Years | Grant Program & Local Funds | D | PI | Low/Low |
| 2 | Severe Winter Storms | Educate citizens on how to prepare for severe winter weather. | ESDA | 2 Years | Grant Program & Local Funds | D | PI | Low/Low |
| 3 | Earthquake | Develop a model earthquake response plan for schools, public buildings, and other critical facilities. | ESDA | 5 Years | Grant Program & Local Funds | C | ES/PI | Low/Medium |

Table I-2. Village of Ashkum Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|---|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | All Hazards | Help residents prepare and be better informed in case of an emergency by placing brochures in town hall. | Village Board | 2 Years | Grant Program | B | PI | Medium/Low |
| 2 | All Hazards | Put residents in touch with emergency personnel following a disaster through telephone calls and personal contacts. | Village Board | 2 Years | Grant Program | C | ES | Medium/Low |

Table I-3. Village of Beaverville Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------------------|--|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | Tornado & Severe Storms | Relocate and improve weather siren system. | Village Board | 2-3 Years | Grant Program | B | ES | High/Low |
| 2 | All Hazards | Upgrade emergency service equipment. | Village Board | 2-3 Years | Grant Program | C | ES | High/Low |
| 3 | Flooding | Improve drainage in flood prone areas. | Village Board | 5 Years | General Fund | B | SP | High/Medium |
| 4 | All Hazards | Assist residents to protect property. | Village Board | 3 Years | County Police | C | PI/PP | High/Low |
| 5 | Winter Storms | Create central locations with emergency power supplies for heat during power failures. | Village Board | 3 Years | General Fund | B | ES | High/Low |
| 6 | Flooding | Raze old buildings. | Village Board | 3 Years | General Fund | B | PP/SP | High/Low |

Table I-4. Village of Buckley Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|---|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | All Hazards | Help residents prepare and be better informed in case of an emergency by placing brochures in town hall. | Village Board | 2 Years | Grant Program | B | PI | Medium/Low |
| 2 | All Hazards | Put residents in touch with emergency personnel following a disaster through telephone calls and personal contacts. | Village Board | 2 Years | Grant Program | C | ES | Medium/Low |

Table I-5. Village of Chebanse Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|---|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | All Hazards | Help residents prepare and be better informed in case of an emergency by placing brochures in town hall and information on the Village website. | Village Board | 2 Years | Grant Program | B | PI | Medium/Low |
| 2 | All Hazards | Prepare emergency responders for situations commonly seen following a natural disaster, such as downed power lines, fuel spills, etc. | Village Board | 2 Years | General Funds | D | PI | Low/Low |

Table I-6. Village of Cissna Park Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------|---|------------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Dredge Pigeon Creek, build up the banks, and/or construct detention basins. | Village of Cissna Park | 5 Years | Grant Programs & General Fund | A | SP | Medium/Medium |
| 2 | Flooding | Improve and upgrade the surface water drainage system. | Village of Cissna Park | 5 Years | Grant Programs & General Funds | B | SP | Medium/Medium |
| 3 | Flooding | Purchase homes in the floodplain and build a public park. | Village of Cissna Park | 5 Years | Grant Programs & General Funds | B | PP/SP | Medium/Medium |
| 4 | Flooding | Flood proof homes. | Village of Cissna Park | 5 Years | Grant Programs & General Funds | C | PP/SP | Medium/Medium |
| 5 | Flooding | Provide sand bags and manpower to install them as necessary. | Village of Cissna Park | 5 Years | TBD | C | ES | Low/Low |

Table I-7. Village of Clifton Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|---|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | All Hazards | Assist residents in preparing for a natural disaster by storing food and emergency supplies. Educational materials will be placed on the Village website and in Village Hall. | Village Board | 2 Years | General Funds | D | PI | Low/Low |
| 2 | All Hazards | Prepare emergency responders for situations commonly seen following a natural disaster, such as downed power lines, fuel spills, etc. | Village Board | 2 Years | General Funds | D | PI | Low/Low |

Table I-8. Village of Crescent City Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|---|--------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Purchase flood-prone properties and remove the structure. | Village Board | 3 years | Grant Programs & General Funds | A | PP | High/Medium |
| 2 | Flooding | Install storm sewers to drain flood prone areas more rapidly. | Village Board | 3 years | Grant Programs & General Funds | B | PP/SP | Medium/Medium |
| 3 | All Hazards | Educate residents on awareness and preparedness | Village Board | 1 year | General Funds | D | PI | Low/Low |

Table I-9. Village of Danforth Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|--|--------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | All Hazards | Educate residents on awareness and preparedness by placing pamphlets in Village buildings and other high traffic areas. | Village Board | 1 year | General Funds | D | PI | Low/Low |
| 2 | All Hazards | Train emergency responders on common dangers associated with natural disaster events (i.e. downed power lines, leaking fuel tanks, etc.) | Village Board | 3 Years | General Funds & Grant Programs | C | PI | Low/Low |

Table I-10. Village of Donovan Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|--|-------------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | Tornado | Improve the drinking water system. | Water Maintenance Board | 3-5 Years | TBD | C | SP | High/Medium |
| 2 | All Hazards | Build a structure to house maintenance and recovery equipment. | Road Commission | 5 Years | State Levy | C | ES/SP | Medium/Medium |
| 3 | All Hazards | Develop a citizen education program. | Village Trustee | 2 Years | TBD | D | PI | High/Low |

Table I-11. Village of Gilman Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------------------------|---|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | Railroad Incidents | Build overpass over railroad tracks to facilitate emergency response. | City Engineer | 5 Years | TBD | C | ES/SP | High/High |
| 2 | Flooding | Drainage system repairs and upgrades. | City Engineer | 5 Years | TBD | A | PP | High/Medium |
| 3 | Tornados and Severe Storms | Install tornado sirens at strategic locations around the Village. | Township Board | 5 Years | TBD | B | SP/PA | High/Medium |

Table I-12. Village of Iroquois Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|-------------|--|--------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | All Hazards | Educate residents on hazard preparedness and response methods | Village Board | 2 Years | General Funds | D | PI | Low/Low |
| 2 | All Hazards | Train emergency responders on common dangers associated with natural disaster events (i.e. downed power lines, leaking fuel tanks, etc.) | Village Board | 3 Years | General Funds & Grant Programs | C | PI | Low/Low |

Table I-13. Iroquois County (Unincorporated Area) Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|------------------------|--|--|-------------------------|-------------------------------|----------|-------------------------|---------------|
| 1*† | Tornado & Severe Storm | Install a storm warning system. | County Emergency Services & County Board | 2 Years | Grant Programs & General Fund | C | PA/SP | Low/Low |
| 2*† | Flooding | Elevate roadways to mitigate flood impacts. | County Highway Dept./State Dept. of Transportation | 5 Years | Grant Programs & General Fund | A | SP | High/High |
| 3† | Tornado & Severe Storm | Furnish weather alert radios to citizens. | County Emergency Services | 2 Years | Grant Programs & General Fund | C | PI | Medium/Medium |
| 4† | Severe Winter Storm | Straighten Old State Route 45 south of town. | State Dept. of Transportation | 5 years | Grant Programs & General Fund | B | SP | High/Medium |

Notes:

* Source is the Stockland Mitigation Action Plan.

† Source is the Chebanse Township Mitigation Action Plan

Table I-14. Village of Loda Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|--------|-----------------------------|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

Table I-15. Village of Martinton Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|--------|-----------------------------|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

Table I-16. Village of Milford Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------|---|---|-------------------------|-------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Improve drainage from viaduct area near State Route 1 and raise the road grade for detour roads nearby. | Milford Township Road Dept. & Village of Milford Road Dept. | 5 Years | Grant Program & General Funds | B | PA/ES | High/Medium |
| 2 | Flooding | Raise road grade west of Milford on County Rd. 9. | County Highway Dept. | 5 Years | Grant Program & General Funds | B | PA/ES | High/Medium |
| 3 | Flooding | Raise road grade on County Rd. 900 west of State Route 1. | Village of Milford Road Dept. & County Highway Dept. | 5 Years | Grant Program & General Funds | B | PA/ES | Medium/High |

Table I-17. Village of Onarga Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|--------|-----------------------------|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

Table I-18. Village of Papineau Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------------------|--|-----------------------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | All Hazards | Educate emergency responders about hazardous material response procedures. | Fire Department | 3 Years | General Funds & Grant Programs | C | ES | Medium/Low |
| 2 | Flooding | Upgrade drainage infrastructure to minimize road closings. | Village Board | 5 Years | General Funds & Grant Programs | B | SP | Medium/Medium |
| 3 | All Hazards | Purchase and install an emergency power generator for the fire station. | Village Board and Fire Department | 3 Years | General Funds & Grant Programs | B | SP | Medium/Low |
| 4 | Tornado/Severe Storm | Install tornado sirens at strategic locations around the Village. | Village Board | 4 Years | General Funds & Grant Programs | C | SP/ES | Low/Low |

Table I-19. Village of Sheldon Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------------------|---|--------------------|-------------------------|--------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Upgrade drainage infrastructure to minimize flood impacts. | Village Board | 5 Years | General Funds & Grant Programs | C | SP | Medium/Medium |
| 2 | All Hazards | Educate residents about preparedness and responses to a hazard event. | Village Board | 3 Years | General Funds & Grant Programs | D | PI | Low/Low |
| 3 | Severe Winter Storms | Purchase new snow removal equipment. | Village Board | 5 Years | General Funds & Grant Programs | C | ES | Medium/Medium |

Table I-20. Village of Thawville Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|--------|-----------------------------|--------------------|-------------------------|----------------|----------|-------------------------|---------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |

Table I-21. City of Watseka Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------|---|------------------------------------|-------------------------|-------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Raise the State Routes 1 & 24 intersection to decrease flood impacts. | State Department of Transportation | 3-4 Years | Grant Program & General Funds | A | SP | High/High |
| 2 | Flooding | Relocate Nettie Davis and Woodland Schools out of the floodplain. | School District | 5 Years | State & Federal Grants | B | SP | High/High |
| 3 | Flooding | Install a drainage ditch. | City of Watseka | 2 Years | Grant Program & General Funds | B | PA/PP | High/High |
| 4 | Flooding | Purchase impacted properties and relocate structures outside of the floodplain. | City of Watseka | 2 Years | Grant Funding | B | PP | High/High |
| 5 | Flooding | Purchase property to build a retention basin. | DNR & Corp of Engineers | 10 Years | Grant Funding | A | PA | High/High |
| 6 | Flooding | Separate storm and sanitary sewers. | City of Watseka | 10 Years | Grant Funding | B | PP | High/High |

Table I-22. Village of Wellington Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|------------------------|---|--------------------|-------------------------|-------------------------------|----------|-------------------------|---------------|
| 1 | Multiple Hazards | Provide local storm sirens. | Village Mayor | 3 Years | Grant Program & General Funds | A | SP/ES | Medium/Medium |
| 2 | Tornado & Severe Storm | Increase public awareness of damage prevention strategies and techniques. | Village Board | 3 Years | Grant Program & General Funds | D | PA | Low/Low |

Table I-23. Village of Woodland Action Plan

| ITEM NUMBER | HAZARD | TYPE OF ACTIVITY OR PROJECT | RESPONSIBLE AGENCY | IMPLEMENTATION TIMELINE | FUNDING SOURCE | PRIORITY | ACTIVITY CATEGORIZATION | BENEFIT/ COST |
|-------------|----------|---|---|-------------------------|-------------------------------|----------|-------------------------|---------------|
| 1 | Flooding | Increase size of drainage system to prevent flooding. | County Planning Dept. & Village of Woodland | 5 Years | Federal Grant & General Funds | A | SP | Medium/Medium |
| 2 | Flooding | Dredge Coon Creek or otherwise improve flow capacity. | County Planning Dept. & Village of Woodland | 5 Years | Federal Grant & General Funds | A | SP | Medium/Medium |

Appendix J

Community Worksheet 3a: Critical Facilities, Structures, and Population Information

Worksheet 3a. Village of Ashkum

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|-------------------------------------|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 324 | 324 | 100.0% | 35,222,742 | 35,222,742 | 100.0% | 724 | 724 | 100.0% |
| Commercial | 19 | 19 | 100.0% | 9,807,915 | 9,807,915 | 100.0% | NA | NA | |
| Industrial | 3 | 3 | 100.0% | 10,247,603 | 10,247,603 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 969,990 | 969,990 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 910,140 | 910,140 | 100.0% | NA | NA | |
| Government | 3 | 3 | 100.0% | 3,286,560 | 3,286,560 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | 36,963 | 36,963 | 100.0% | NA | NA | |
| Agricultural | 6 | 6 | 100.0% | 1,313,878 | 1,313,878 | 100.0% | NA | NA | |
| TOTAL: | 357 | 357 | 100.0% | 61,758,828 | 61,758,828 | 100.0% | 724 | 724 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|-------------------------------------|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 324 | 9 | 2.8% | 35,222,742 | 975,407 | 2.8% | 724 | 23 | 3.2% |
| Commercial | 19 | 0 | 0.0% | 9,807,915 | 0 | 0.0% | | 0 | |
| Industrial | 3 | 0 | 0.0% | 10,247,603 | 0 | 0.0% | | 0 | |
| Religious | 1 | 0 | 0.0% | 969,990 | 0 | 0.0% | | 0 | |
| Education | 1 | 0 | 0.0% | 910,140 | 0 | 0.0% | | 0 | |
| Government | 3 | 0 | 0.0% | 3,286,560 | 0 | 0.0% | | 0 | |
| Utilities | 1 | 0 | 0.0% | 36,963 | 0 | 0.0% | | 0 | |
| Agricultural | 6 | 0 | 0.0% | 1,313,878 | 0 | 0.0% | | 0 | |
| TOTAL: | 357 | 9 | 2.5% | 61,758,828 | 975,407 | 1.6% | 724 | 23 | 3.2% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Beaverville

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 171 | 171 | 100.0% | 17,606,178 | 17,606,178 | 100.0% | 391 | 391 | 100.0% |
| Commercial | 3 | 3 | 100.0% | 570,669 | 570,669 | 100.0% | NA | NA | |
| Industrial | 1 | 1 | 100.0% | 68,355 | 68,355 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 554,280 | 554,280 | 100.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 821,640 | 821,640 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 1 | 1 | 100.0% | 113,925 | 113,925 | 100.0% | NA | NA | |
| TOTAL: | 179 | 179 | 100.0% | 19,735,047 | 19,735,047 | 100.0% | 391 | 391 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 171 | 0 | 0.0% | 17,606,178 | 0 | 0.0% | 391 | 0 | 0.0% |
| Commercial | 3 | 0 | 0.0% | 570,669 | 0 | 0.0% | NA | NA | |
| Industrial | 1 | 0 | 0.0% | 68,355 | 0 | 0.0% | NA | NA | |
| Religious | 1 | 0 | 0.0% | 554,280 | 0 | 0.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 821,640 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 1 | 0 | 0.0% | 113,925 | 0 | 0.0% | NA | NA | |
| TOTAL: | 179 | 0 | 0.0% | 19,735,047 | 0 | 0.0% | 391 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Buckley

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 278 | 278 | 100.0% | 35,370,652 | 35,370,652 | 100.0% | 595 | 595 | 100.0% |
| Commercial | 8 | 8 | 100.0% | 2,068,010 | 2,068,010 | 100.0% | NA | NA | |
| Industrial | 3 | 3 | 100.0% | 723,595 | 723,595 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 969,990 | 969,990 | 100.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 1,506,340 | 1,506,340 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | Unknown | Unknown | 100.0% | NA | NA | |
| Agricultural | 2 | 2 | 100.0% | 197,470 | 197,470 | 100.0% | NA | NA | |
| TOTAL: | 294 | 294 | 100.0% | 40,836,057 | 40,836,057 | 100.0% | 595 | 595 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 278 | 0 | 0.0% | 35,370,652 | 0 | 0.0% | 595 | 0 | 0.0% |
| Commercial | 8 | 0 | 0.0% | 2,068,010 | 0 | 0.0% | NA | NA | |
| Industrial | 3 | 0 | 0.0% | 723,595 | 0 | 0.0% | NA | NA | |
| Religious | 1 | 0 | 0.0% | 969,990 | 0 | 0.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 1,506,340 | 0 | 0.0% | NA | NA | |
| Utilities | 1 | 0 | 0.0% | Unknown | 0 | 0.0% | NA | NA | |
| Agricultural | 2 | 0 | 0.0% | 197,470 | 0 | 0.0% | NA | NA | |
| TOTAL: | 294 | 0 | 0.0% | 40,836,057 | 0 | 0.0% | 595 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Chebanse

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 296 | 296 | 100.0% | 29,305,154 | 29,305,154 | 100.0% | 689 | 689 | 100.0% |
| Commercial | 19 | 19 | 100.0% | 7,237,085 | 7,237,085 | 100.0% | NA | NA | |
| Industrial | 5 | 5 | 100.0% | 2,300,871 | 2,300,871 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 554,280 | 554,280 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 780,120 | 780,120 | 100.0% | NA | NA | |
| Government | 1 | 1 | 100.0% | 821,640 | 821,640 | 100.0% | NA | NA | |
| Utilities | 2 | 2 | 100.0% | 378,629 | 378,629 | 100.0% | NA | NA | |
| Agricultural | 2 | 2 | 100.0% | 607,600 | 607,600 | 100.0% | NA | NA | |
| TOTAL: | 325 | 325 | 100.0% | 41,606,750 | 41,606,750 | 100.0% | 689 | 689 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 296 | 0 | 0.0% | 29,305,154 | 0 | 0.0% | 689 | 0 | 0.0% |
| Commercial | 19 | 0 | 0.0% | 7,237,085 | 0 | 0.0% | NA | NA | |
| Industrial | 5 | 0 | 0.0% | 2,300,871 | 0 | 0.0% | NA | NA | |
| Religious | 1 | 0 | 0.0% | 554,280 | 0 | 0.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 780,120 | 0 | 0.0% | NA | NA | |
| Government | 1 | 0 | 0.0% | 821,640 | 0 | 0.0% | NA | NA | |
| Utilities | 2 | 0 | 0.0% | 378,629 | 0 | 0.0% | NA | NA | |
| Agricultural | 2 | 0 | 0.0% | 607,600 | 0 | 0.0% | NA | NA | |
| TOTAL: | 325 | 0 | 0.0% | 41,606,750 | 0 | 0.0% | 689 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Cissna Park

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 400 | 400 | 100.0% | 48,730,490 | 48,730,490 | 100.0% | 812 | 812 | 100.0% |
| Commercial | 31 | 31 | 100.0% | 16,696,673 | 16,696,673 | 100.0% | NA | NA | |
| Industrial | 10 | 10 | 100.0% | 3,370,707 | 3,370,707 | 100.0% | NA | NA | |
| Religious | 3 | 3 | 100.0% | 1,247,130 | 1,247,130 | 100.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 1,643,280 | 1,643,280 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 8 | 8 | 100.0% | 1,863,699 | 1,863,699 | 100.0% | NA | NA | |
| TOTAL: | 454 | 454 | 100.0% | 73,551,979 | 73,551,979 | 100.0% | 812 | 812 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 400 | 118 | 29.5% | 48,730,490 | 15,517,867 | 31.8% | 812 | 197 | 24.3% |
| Commercial | 31 | 10 | 32.3% | 16,696,673 | 3,523,943 | 21.1% | NA | NA | |
| Industrial | 10 | 2 | 20.0% | 3,370,707 | 188,524 | 5.6% | NA | NA | |
| Religious | 3 | 1 | 33.3% | 1,247,130 | 16,282 | 1.3% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 1,643,280 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 8 | 4 | 50.0% | 1,863,699 | 787,550 | 42.3% | NA | NA | |
| TOTAL: | 454 | 135 | 29.7% | 73,551,979 | 20,034,166 | 27.2% | 812 | 197 | 24.3% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Clifton

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 576 | 576 | 100.0% | 65,766,637 | 65,766,637 | 100.0% | 1,317 | 1,317 | 100.0% |
| Commercial | 27 | 27 | 100.0% | 9,742,621 | 9,742,621 | 100.0% | NA | NA | |
| Industrial | 4 | 4 | 100.0% | 859,208 | 859,208 | 100.0% | NA | NA | |
| Religious | 2 | 2 | 100.0% | 969,990 | 969,990 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 1,170,180 | 1,170,180 | 100.0% | NA | NA | |
| Government | 4 | 4 | 100.0% | 2,054,100 | 2,054,100 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | 36,963 | 36,963 | 100.0% | NA | NA | |
| Agricultural | 4 | 4 | 100.0% | 1,012,414 | 1,012,414 | 100.0% | NA | NA | |
| TOTAL: | 618 | 618 | 100.0% | 81,575,150 | 81,575,150 | 100.0% | 1,317 | 1,317 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 576 | 0 | 0.0% | 65,766,637 | 0 | 0.0% | 1,317 | 0 | 0.0% |
| Commercial | 27 | 0 | 0.0% | 9,742,621 | 0 | 0.0% | NA | NA | |
| Industrial | 4 | 0 | 0.0% | 859,208 | 0 | 0.0% | NA | NA | |
| Religious | 2 | 0 | 0.0% | 969,990 | 0 | 0.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 1,170,180 | 0 | 0.0% | NA | NA | |
| Government | 4 | 0 | 0.0% | 2,054,100 | 0 | 0.0% | NA | NA | |
| Utilities | 1 | 0 | 0.0% | 36,963 | 0 | 0.0% | NA | NA | |
| Agricultural | 4 | 0 | 0.0% | 1,012,414 | 0 | 0.0% | NA | NA | |
| TOTAL: | 618 | 0 | 0.0% | 81,575,150 | 0 | 0.0% | 1,317 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Crescent City

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 265 | 265 | 100.0% | 33,091,486 | 33,091,486 | 100.0% | 631 | 631 | 100.0% |
| Commercial | 11 | 11 | 100.0% | 2,579,886 | 2,579,886 | 100.0% | NA | NA | |
| Industrial | 13 | 13 | 100.0% | 3,282,552 | 3,282,552 | 100.0% | NA | NA | |
| Religious | 2 | 2 | 100.0% | 1,247,130 | 1,247,130 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 1,040,160 | 1,040,160 | 100.0% | NA | NA | |
| Government | 1 | 1 | 100.0% | 1,506,340 | 1,506,340 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 293 | 293 | 100.0% | 42,747,554 | 42,747,554 | 100.0% | 631 | 631 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 265 | 18 | 6.8% | 33,091,486 | 2,206,509 | 6.7% | 631 | 41 | 6.5% |
| Commercial | 11 | 1 | 9.1% | 2,579,886 | 276,733 | 10.7% | NA | NA | |
| Industrial | 13 | 1 | 7.7% | 3,282,552 | 281,329 | 8.6% | NA | NA | |
| Religious | 2 | 1 | 50.0% | 1,247,130 | 187,690 | 15.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 1,040,160 | 0 | 0.0% | NA | NA | |
| Government | 1 | 0 | 0.0% | 1,506,340 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 293 | 21 | 7.2% | 42,747,554 | 2,952,261 | 6.9% | 631 | 41 | 6.5% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Danforth

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 212 | 212 | 100.0% | 38,296,933 | 38,296,933 | 100.0% | 587 | 587 | 100.0% |
| Commercial | 8 | 8 | 100.0% | 2,694,296 | 2,694,296 | 100.0% | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 2 | 2 | 100.0% | 1,247,130 | 1,247,130 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 1,560,240 | 1,560,240 | 100.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 2 | 2 | 100.0% | 450,802 | 450,802 | 100.0% | NA | NA | |
| TOTAL: | 225 | 225 | 100.0% | 44,249,401 | 44,249,401 | 100.0% | 587 | 587 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 212 | 0 | 0.0% | 38,296,933 | 0 | 0.0% | 587 | 0 | 0.0% |
| Commercial | 8 | 0 | 0.0% | 2,694,296 | 0 | 0.0% | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 2 | 0 | 0.0% | 1,247,130 | 0 | 0.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 1,560,240 | 0 | 0.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 2 | 0 | 0.0% | 450,802 | 0 | 0.0% | NA | NA | |
| TOTAL: | 225 | 0 | 0.0% | 44,249,401 | 0 | 0.0% | 587 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Donovan

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 121 | 121 | 100.0% | 17,230,211 | 17,230,211 | 100.0% | 351 | 351 | 100.0% |
| Commercial | 4 | 4 | 100.0% | 653,682 | 653,682 | 100.0% | NA | NA | |
| Industrial | 3 | 3 | 100.0% | 469,655 | 469,655 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 10,808,460 | 10,808,460 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 1,040,160 | 1,040,160 | 100.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 130 | 130 | 100.0% | 30,202,168 | 30,202,168 | 100.0% | 351 | 351 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 121 | 0 | 0.0% | 17,230,211 | 0 | 0.0% | 351 | 0 | 0.0% |
| Commercial | 4 | 0 | 0.0% | 653,682 | 0 | 0.0% | NA | NA | |
| Industrial | 3 | 0 | 0.0% | 469,655 | 0 | 0.0% | NA | NA | |
| Religious | 1 | 0 | 0.0% | 10,808,460 | 0 | 0.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 1,040,160 | 0 | 0.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 130 | 0 | 0.0% | 30,202,168 | 0 | 0.0% | 351 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 840 | 840 | 100.0% | 96,714,829 | 96,714,829 | 100.0% | 1,793 | 1,793 | 100.0% |
| Commercial | 42 | 42 | 100.0% | 13,795,995 | 13,795,995 | 100.0% | NA | NA | |
| Industrial | 7 | 7 | 100.0% | 3,240,271 | 3,240,271 | 100.0% | NA | NA | |
| Religious | 6 | 6 | 100.0% | 4,295,670 | 4,295,670 | 100.0% | NA | NA | |
| Education | 4 | 4 | 100.0% | 4,420,680 | 4,420,680 | 100.0% | NA | NA | |
| Government | 1 | 1 | 100.0% | 1,095,520 | 1,095,520 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | 73,926 | 73,926 | 100.0% | NA | NA | |
| Agricultural | 17 | 17 | 100.0% | 2,092,252 | 2,092,252 | 100.0% | NA | NA | |
| TOTAL: | 917 | 917 | 100.0% | 125,655,217 | 125,655,217 | 100.0% | 1,793 | 1,793 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 840 | 23 | 2.7% | 96,714,829 | 2,591,071 | 2.7% | 1,793 | 48 | 2.7% |
| Commercial | 42 | 2 | 4.8% | 13,795,995 | 797,427 | 5.8% | NA | NA | |
| Industrial | 7 | 1 | 14.3% | 3,240,271 | 57,828 | 1.8% | NA | NA | |
| Religious | 6 | 0 | 0.0% | 4,295,670 | 0 | 0.0% | NA | NA | |
| Education | 4 | 1 | 25.0% | 4,420,680 | 468,812 | 10.6% | NA | NA | |
| Government | 1 | 0 | 0.0% | 1,095,520 | 0 | 0.0% | NA | NA | |
| Utilities | 1 | 0 | 0.0% | 73,926 | 0 | 0.0% | NA | NA | |
| Agricultural | 17 | 1 | 5.9% | 2,092,252 | 80,447 | 3.8% | NA | NA | |
| TOTAL: | 917 | 28 | 3.1% | 125,655,217 | 3,995,585 | 3.2% | 1,793 | 48 | 2.7% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Iroquois County (Unincorporated)

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 6,671 | 6,671 | 100.0% | 605,029,216 | 605,029,216 | 100.0% | 12,387 | 12,387 | 100.0% |
| Commercial | 203 | 203 | 100.0% | 62,212,794 | 62,212,794 | 100.0% | NA | NA | |
| Industrial | 59 | 59 | 100.0% | 14,094,011 | 14,094,011 | 100.0% | NA | NA | |
| Religious | 13 | 13 | 100.0% | 4,157,100 | 4,157,100 | 100.0% | NA | NA | |
| Education | 7 | 7 | 100.0% | 4,030,620 | 4,030,620 | 100.0% | NA | NA | |
| Government | 18 | 18 | 100.0% | 8,216,400 | 8,216,400 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 257 | 257 | 100.0% | 46,050,688 | 46,050,688 | 100.0% | NA | NA | |
| TOTAL: | 7,228 | 7,228 | 100.0% | 743,790,829 | 743,790,829 | 100.0% | 12,387 | 12,387 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 6,671 | 698 | 10.5% | 605,029,216 | 63,236,264 | 10.5% | 12,387 | 1,046 | 8.4% |
| Commercial | 203 | 17 | 8.4% | 62,212,794 | 5,281,292 | 8.5% | NA | NA | |
| Industrial | 59 | 3 | 5.1% | 14,094,011 | 624,918 | 4.4% | NA | NA | |
| Religious | 13 | 2 | 15.4% | 4,157,100 | 466,345 | 11.2% | NA | NA | |
| Education | 7 | 1 | 14.3% | 4,030,620 | 1,007,655 | 25.0% | NA | NA | |
| Government | 18 | 0 | 0.0% | 8,216,400 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 257 | 23 | 8.9% | 46,050,688 | 4,206,780 | 9.1% | NA | NA | |
| TOTAL: | 7,228 | 744 | 10.3% | 743,790,829 | 74,823,254 | 10.1% | 12,387 | 1,046 | 8.4% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Iroquois

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 68 | 68 | 100.0% | 11,405,908 | 11,405,908 | 100.0% | 207 | 207 | 100.0% |
| Commercial | 4 | 4 | 100.0% | 3,058,783 | 3,058,783 | 100.0% | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 3 | 100.0% | 530,834 | 530,834 | 100.0% | NA | NA | |
| TOTAL: | 75 | 75 | 100.0% | 14,995,525 | 14,995,525 | 100.0% | 207 | 207 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 68 | 8 | 11.8% | 11,405,908 | 1,299,243 | 11.4% | 207 | 28 | 13.5% |
| Commercial | 4 | 1 | 25.0% | 3,058,783 | 276,062 | 9.0% | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 1 | 33.3% | 530,834 | 139,415 | 26.3% | NA | NA | |
| TOTAL: | 75 | 10 | 13.3% | 14,995,525 | 1,714,720 | 11.4% | 207 | 28 | 13.5% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Loda

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 215 | 215 | 100.0% | 21,144,142 | 21,144,142 | 100.0% | 419 | 419 | 100.0% |
| Commercial | 9 | 9 | 100.0% | 5,145,422 | 5,145,422 | 100.0% | NA | NA | |
| Industrial | 3 | 3 | 100.0% | 6,387,615 | 6,387,615 | 100.0% | NA | NA | |
| Religious | 3 | 3 | 100.0% | 1,732,125 | 1,732,125 | 100.0% | NA | NA | |
| Education | 1 | 1 | 100.0% | 1,560,240 | 1,560,240 | 100.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 3 | 100.0% | 417,725 | 417,725 | 100.0% | NA | NA | |
| TOTAL: | 234 | 234 | 100.0% | 36,387,269 | 36,387,269 | 100.0% | 419 | 419 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 215 | 0 | 0.0% | 21,144,142 | 0 | 0.0% | 419 | 0 | 0.0% |
| Commercial | 9 | 0 | 0.0% | 5,145,422 | 0 | 0.0% | NA | NA | |
| Industrial | 3 | 0 | 0.0% | 6,387,615 | 0 | 0.0% | NA | NA | |
| Religious | 3 | 0 | 0.0% | 1,732,125 | 0 | 0.0% | NA | NA | |
| Education | 1 | 0 | 0.0% | 1,560,240 | 0 | 0.0% | NA | NA | |
| Government | 0 | 0 | | 0 | 0 | | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 0 | 0.0% | 417,725 | 0 | 0.0% | NA | NA | |
| TOTAL: | 234 | 0 | 0.0% | 36,387,269 | 0 | 0.0% | 419 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Martinton

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 139 | 139 | 100.0% | 16,598,347 | 16,598,347 | 100.0% | 375 | 375 | 100.0% |
| Commercial | 6 | 6 | 100.0% | 1,234,554 | 1,234,554 | 100.0% | NA | NA | |
| Industrial | 1 | 1 | 100.0% | 66,836 | 66,836 | 100.0% | NA | NA | |
| Religious | 1 | 1 | 100.0% | 277,140 | 277,140 | 100.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 410,820 | 410,820 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 2 | 2 | 100.0% | 394,940 | 394,940 | 100.0% | NA | NA | |
| TOTAL: | 151 | 151 | 100.0% | 18,982,637 | 18,982,637 | 100.0% | 375 | 375 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 139 | 0 | 0.0% | 16,598,347 | 0 | 0.0% | 375 | 0 | 0.0% |
| Commercial | 6 | 0 | 0.0% | 1,234,554 | 0 | 0.0% | NA | NA | |
| Industrial | 1 | 0 | 0.0% | 66,836 | 0 | 0.0% | NA | NA | |
| Religious | 1 | 0 | 0.0% | 277,140 | 0 | 0.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 410,820 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 2 | 0 | 0.0% | 394,940 | 0 | 0.0% | NA | NA | |
| TOTAL: | 151 | 0 | 0.0% | 18,982,637 | 0 | 0.0% | 375 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Milford

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|--------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 661 | 661 | 100.0% | 76,780,889 | 76,780,889 | 100.0% | 1,369 | 1,369 | 100.0% |
| Commercial | 43 | 43 | 100.0% | 15,138,915 | 15,138,915 | 100.0% | NA | NA | |
| Industrial | 8 | 8 | 100.0% | 3,072,916 | 3,072,916 | 100.0% | NA | NA | |
| Religious | 5 | 5 | 100.0% | 2,217,120 | 2,217,120 | 100.0% | NA | NA | |
| Education | 2 | 2 | 100.0% | 2,470,380 | 2,470,380 | 100.0% | NA | NA | |
| Government | 1 | 1 | 100.0% | 821,640 | 821,640 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 7 | 7 | 100.0% | 1,253,175 | 1,253,175 | 100.0% | NA | NA | |
| TOTAL: | 727 | 727 | 100.0% | 101,755,035 | 101,755,035 | 100.0% | 1,369 | 1,369 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 661 | 21 | 3.2% | 76,780,889 | 3,506,787 | 4.6% | 1,369 | 51 | 3.7% |
| Commercial | 43 | 1 | 2.3% | 15,138,915 | 207,162 | 1.4% | NA | NA | |
| Industrial | 8 | 0 | 0.0% | 3,072,916 | 0 | 0.0% | NA | NA | |
| Religious | 5 | 1 | 20.0% | 2,217,120 | 208,734 | 9.4% | NA | NA | |
| Education | 2 | 0 | 0.0% | 2,470,380 | 0 | 0.0% | NA | NA | |
| Government | 1 | 0 | 0.0% | 821,640 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 7 | 1 | 14.3% | 1,253,175 | 58,886 | 4.7% | NA | NA | |
| TOTAL: | 727 | 24 | 3.3% | 101,755,035 | 3,981,569 | 3.9% | 1,369 | 51 | 3.7% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Onarga

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 527 | 527 | 100.0% | 66,099,708 | 66,099,708 | 100.0% | 1438 | 1,438 | 100.0% |
| Commercial | 32 | 32 | 100.0% | 13,269,958 | 13,269,958 | 100.0% | NA | NA | |
| Industrial | 10 | 10 | 100.0% | 3,659,803 | 3,659,803 | 100.0% | NA | NA | |
| Religious | 2 | 2 | 100.0% | 1,108,560 | 1,108,560 | 100.0% | NA | NA | |
| Education | 3 | 3 | 100.0% | 3,120,480 | 3,120,480 | 100.0% | NA | NA | |
| Government | 2 | 2 | 100.0% | 1,232,460 | 1,232,460 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | Unknown | Unknown | 100.0% | NA | NA | |
| Agricultural | 14 | 14 | 100.0% | 5,706,010 | 5,706,010 | 100.0% | NA | NA | |
| TOTAL: | 590 | 590 | 100.0% | 94,196,979 | 94,196,979 | 100.0% | 1438 | 1438 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 527 | 0 | 0.0% | 66,099,708 | 0 | 0.0% | 1438 | 0 | 0.0% |
| Commercial | 32 | 0 | 0.0% | 13,269,958 | 0 | 0.0% | NA | NA | |
| Industrial | 10 | 0 | 0.0% | 3,659,803 | 0 | 0.0% | NA | NA | |
| Religious | 2 | 0 | 0.0% | 1,108,560 | 0 | 0.0% | NA | NA | |
| Education | 3 | 0 | 0.0% | 3,120,480 | 0 | 0.0% | NA | NA | |
| Government | 2 | 0 | 0.0% | 1,232,460 | 0 | 0.0% | NA | NA | |
| Utilities | 1 | 0 | 0.0% | Unknown | 0 | 0.0% | NA | NA | |
| Agricultural | 14 | 0 | 0.0% | 5,706,010 | 0 | 0.0% | NA | NA | |
| TOTAL: | 590 | 0 | 0.0% | 94,196,979 | 0 | 0.0% | 1438 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Papineau

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 71 | 71 | 100.0% | 7,769,438 | 7,769,438 | 100.0% | 196 | 196 | 100.0% |
| Commercial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 715,573 | 715,573 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 3 | 100.0% | 425,320 | 425,320 | 100.0% | NA | NA | |
| TOTAL: | 76 | 76 | 100.0% | 8,910,331 | 8,910,331 | 100.0% | 196 | 196 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 71 | 0 | 0.0% | 7,769,438 | 0 | 0.0% | 196 | 0 | 0.0% |
| Commercial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 715,573 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 0 | 0.0% | 425,320 | 0 | 0.0% | NA | NA | |
| TOTAL: | 76 | 0 | 0.0% | 8,910,331 | 0 | 0.0% | 196 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Sheldon

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 444 | 444 | 100.0% | 58,957,800 | 58,957,800 | 100.0% | 1,232 | 1,232 | 100.0% |
| Commercial | 21 | 21 | 100.0% | 5,977,712 | 5,977,712 | 100.0% | NA | NA | |
| Industrial | 5 | 5 | 100.0% | 1,651,723 | 1,651,723 | 100.0% | NA | NA | |
| Religious | 5 | 5 | 100.0% | 2,632,830 | 2,632,830 | 100.0% | NA | NA | |
| Education | 2 | 2 | 100.0% | 1,950,300 | 1,950,300 | 100.0% | NA | NA | |
| Government | 2 | 2 | 100.0% | 1,095,520 | 1,095,520 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 3 | 100.0% | 235,445 | 235,445 | 100.0% | NA | NA | |
| TOTAL: | 482 | 482 | 100.0% | 72,501,330 | 72,501,330 | 100.0% | 1,232 | 1232 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 444 | 0 | 0.0% | 58,957,800 | 0 | 0.0% | 1,232 | 0 | 0.0% |
| Commercial | 21 | 0 | 0.0% | 5,977,712 | 0 | 0.0% | NA | NA | |
| Industrial | 5 | 0 | 0.0% | 1,651,723 | 0 | 0.0% | NA | NA | |
| Religious | 5 | 0 | 0.0% | 2,632,830 | 0 | 0.0% | NA | NA | |
| Education | 2 | 0 | 0.0% | 1,950,300 | 0 | 0.0% | NA | NA | |
| Government | 2 | 0 | 0.0% | 1,095,520 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 3 | 0 | 0.0% | 235,445 | 0 | 0.0% | NA | NA | |
| TOTAL: | 482 | 0 | 0.0% | 72,501,330 | 0 | 0.0% | 1,232 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Thawville

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 102 | 102 | 100.0% | 13,727,772 | 13,727,772 | 100.0% | 258 | 258 | 100.0% |
| Commercial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 1 | 1 | 100.0% | 554,280 | 554,280 | 100.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 821,640 | 821,640 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 105 | 105 | 100.0% | 15,103,692 | 15,103,692 | 100.0% | 258 | 258 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 102 | 0 | 0.0% | 13,727,772 | 0 | 0.0% | 258 | 0 | 0.0% |
| Commercial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 1 | 0 | 0.0% | 554,280 | 0 | 0.0% | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 821,640 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 105 | 0 | 0.0% | 15,103,692 | 0 | 0.0% | 258 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. City of Watseka

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 2,483 | 2,483 | 100.0% | 310,962,848 | 310,962,848 | 100.0% | 5,670 | 5,670 | 100.0% |
| Commercial | 179 | 179 | 100.0% | 115,734,837 | 115,734,837 | 100.0% | NA | NA | |
| Industrial | 32 | 32 | 100.0% | 19,810,992 | 19,810,992 | 100.0% | NA | NA | |
| Religious | 20 | 20 | 100.0% | 11,085,600 | 11,085,600 | 100.0% | NA | NA | |
| Education | 6 | 6 | 100.0% | 9,361,440 | 9,361,440 | 100.0% | NA | NA | |
| Government | 8 | 8 | 100.0% | 6,162,300 | 6,162,300 | 100.0% | NA | NA | |
| Utilities | 8 | 8 | 100.0% | >73,926 | >73,926 | 100.0% | NA | NA | |
| Agricultural | 14 | 14 | 100.0% | 2,076,245 | 2,076,245 | 100.0% | NA | NA | |
| TOTAL: | 2,742 | 2,742 | 100.0% | 475,194,262 | 475,194,262 | 100.0% | 5,670 | 5,670 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 2,483 | 1,189 | 47.9% | 310,962,848 | 148,818,667 | 47.9% | 5,670 | 2,049 | 36.1% |
| Commercial | 179 | 44 | 24.6% | 115,734,837 | 28,418,938 | 24.6% | NA | NA | |
| Industrial | 32 | 14 | 43.8% | 19,810,992 | 8,927,100 | 45.1% | NA | NA | |
| Religious | 20 | 3 | 15.0% | 11,085,600 | 1,247,130 | 11.3% | NA | NA | |
| Education | 6 | 1 | 16.7% | 9,361,440 | 1,040,160 | 11.1% | NA | NA | |
| Government | 8 | 2 | 25.0% | 6,162,300 | 2,054,100 | 33.3% | NA | NA | |
| Utilities | 8 | 6 | 75.0% | >73,926 | >73,926 | Unknown | NA | NA | |
| Agricultural | 14 | 6 | 42.9% | 2,076,245 | 876,323 | 42.2% | NA | NA | |
| TOTAL: | 2,742 | 1,259 | 45.9% | 475,194,262 | 191,382,418 | 40.3% | 5,670 | 2,049 | 36.1% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Wellington

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 119 | 119 | 100.0% | 13,704,738 | 13,704,738 | 100.0% | 263 | 263 | 100.0% |
| Commercial | 8 | 8 | 100.0% | 1,859,483 | 1,859,483 | 100.0% | NA | NA | |
| Industrial | 3 | 3 | 100.0% | 1,024,711 | 1,024,711 | 100.0% | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 2 | 100.0% | 1,026,292 | 1,026,292 | 100.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 1 | 1 | 100.0% | 136,710 | 136,710 | 100.0% | NA | NA | |
| TOTAL: | 133 | 133 | 100.0% | 17,751,934 | 17,751,934 | 100.0% | 263 | 263 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 119 | 0 | 0.0% | 13,704,738 | 0 | 0.0% | 263 | 0 | 0.0% |
| Commercial | 8 | 0 | 0.0% | 1,859,483 | 0 | 0.0% | NA | NA | |
| Industrial | 3 | 0 | 0.0% | 1,024,711 | 0 | 0.0% | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 0 | 0 | | 0 | 0 | | NA | NA | |
| Government | 2 | 0 | 0.0% | 1,026,292 | 0 | 0.0% | NA | NA | |
| Utilities | 0 | 0 | | 0 | 0 | | NA | NA | |
| Agricultural | 1 | 0 | 0.0% | 136,710 | 0 | 0.0% | NA | NA | |
| TOTAL: | 133 | 0 | 0.0% | 17,751,934 | 0 | 0.0% | 263 | 0 | 0.0% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Worksheet 3a. Village of Woodland

ALL HAZARDS

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 141 | 141 | 100.0% | 16,595,185 | 16,595,185 | 100.0% | 319 | 319 | 100.0% |
| Commercial | 5 | 5 | 100.0% | 2,509,110 | 2,509,110 | 100.0% | NA | NA | |
| Industrial | 0 | 0 | | | 0 | | NA | NA | |
| Religious | 0 | 0 | | | 0 | | NA | NA | |
| Education | 1 | 1 | 100.0% | 780,120 | 780,120 | 100.0% | NA | NA | |
| Government | 3 | 3 | 100.0% | 1,232,460 | 1,232,460 | 100.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | 36,963 | 36,963 | 100.0% | NA | NA | |
| Agricultural | 0 | 0 | | | 0 | | NA | NA | |
| TOTAL: | 150 | 150 | 100.0% | 21,116,875 | 21,116,875 | 100.0% | 319 | 319 | 100.0% |

FLOOD ONLY

| Type of Structure (Occupancy Class) | Number of Structures | | | Value of Structures | | | Number of People | | |
|--|----------------------|------------------|------------------|---------------------|-------------------|------------------|------------------|------------------|------------------|
| | # in Community | # in Hazard Area | % in Hazard Area | \$ in Community | \$ in Hazard Area | % in Hazard Area | # in Community | # in Hazard Area | % in Hazard Area |
| Residential | 141 | 121 | 85.8% | 16,595,185 | 14,242,540 | 85.8% | 319 | 294 | 92.2% |
| Commercial | 5 | 5 | 100.0% | 2,509,110 | 2,451,450 | 97.7% | NA | NA | |
| Industrial | 0 | 0 | | 0 | 0 | | NA | NA | |
| Religious | 0 | 0 | | 0 | 0 | | NA | NA | |
| Education | 1 | 1 | 100.0% | 780,120 | 780,120 | 100.0% | NA | NA | |
| Government | 3 | 1 | 33.3% | 1,232,460 | 246,292 | 20.0% | NA | NA | |
| Utilities | 1 | 1 | 100.0% | 36,963 | 36,963 | 100.0% | NA | NA | |
| Agricultural | 0 | 0 | | 0 | 0 | | NA | NA | |
| TOTAL: | 150 | 128 | 85.3% | 21,116,875 | 17,720,402 | 83.9% | 319 | 294 | 92.2% |

1. Do you know where your greatest damages may occur in your hazard areas? YES
2. Do you know whether your critical facilities will be operational after a hazard event? NO
3. Is there enough data to determine which assets are subject to the greatest potential damages? NO
4. Is there enough data to determine whether significant elements of the community are vulnerable to potential hazards? YES
5. Is there enough data to determine whether certain areas of historic, environmental, political or cultural significance are vulnerable to potential hazards? YES
6. Is there concern about a particular hazard because of its severity, repetitiveness, or likelihood of occurrence? YES
7. Is additional data needed to justify the expenditure of community or state funds for mitigation initiatives? YES

Appendix K

Crosswalk

LOCAL MITIGATION PLAN REVIEW CROSSWALK

INSTRUCTIONS FOR USING THE PLAN REVIEW CROSSWALK FOR REVIEW OF LOCAL MITIGATION PLANS

Attached is a Plan Review Crosswalk based on the **Local Multi-Hazard Mitigation Planning Guidance**, published by FEMA in July, 2008. This Plan Review Crosswalk is consistent with the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* (Stafford Act), as amended by Section 322 of the *Disaster Mitigation Act of 2000* (P.L. 106-390), the *National Flood Insurance Act of 1968*, as amended by the *National Flood Insurance Reform Act of 2004* (P.L. 108-264) and *44 Code of Federal Regulations (CFR) Part 201 – Mitigation Planning*, inclusive of all amendments through October 31, 2007.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer’s comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer’s comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated “Satisfactory” in order for the requirement to be fulfilled and receive a summary score of “Satisfactory.” A “Needs Improvement” score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, however, all elements apply. States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements. Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.:

| Assessing Vulnerability: Overview | | | | |
|---|--|---|--------------------------|--------------------------|
| <i>Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.</i> | | | | |
| Element | Location in the Plan (section or annex and page #) | Reviewer’s Comments | SCORE | |
| | | | N | S |
| A. Does the new or updated plan include an overall summary description of the jurisdiction’s vulnerability to each hazard? | Section II, pp. 4-10 | The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms. | | <input type="checkbox"/> |
| B. Does the new or updated plan address the impact of each hazard on the jurisdiction? | Section II, pp. 10-20 | The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: • Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: This information can be presented in terms of dollar value or percentages of damage. | <input type="checkbox"/> | |
| SUMMARY SCORE | | | <input type="checkbox"/> | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted. Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

Prerequisite(s) (Check Applicable Box)

1. Adoption by the Local Governing Body: §201.6(c)(5) OR

| NOT MET | MET |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

2. Multi-Jurisdictional Plan Adoption: §201.6(c)(5)
AND

| NOT MET | MET |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

3. Multi-Jurisdictional Planning Participation: §201.6(a)(3)

| NOT MET | MET |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

Planning Process

4. Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

Risk Assessment

5. Identifying Hazards: §201.6(c)(2)(i)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

6. Profiling Hazards: §201.6(c)(2)(i)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

7. Assessing Vulnerability: Overview: §201.6(c)(2)(ii)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

8. Assessing Vulnerability: Addressing Repetitive Loss Properties. §201.6(c)(2)(ii)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

9. Assessing Vulnerability: Identifying Structures, Infrastructure, and Critical Facilities: §201.6(c)(2)(ii)(B)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

10. Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

11. Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

12. Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

*States that have additional requirements can add them in the appropriate sections of the *Local Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Mitigation Strategy

13. Local Hazard Mitigation Goals: §201.6(c)(3)(i)

14. Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)

15. Identification and Analysis of Mitigation Actions: NFIP Compliance. §201.6(c)(3)(ii)

16. Implementation of Mitigation Actions: §201.6(c)(3)(iii)

17. Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |

Plan Maintenance Process

18. Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(ii)

19. Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)

20. Continued Public Involvement: §201.6(c)(4)(iii)

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

Additional State Requirements*

Insert State Requirement

Insert State Requirement

Insert State Requirement

| N | S |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED

See Reviewer's Comments

PLAN APPROVED

LOCAL MITIGATION PLAN REVIEW CROSSWALK

Local Mitigation Plan Review and Approval Status

| | | |
|--|--|---------------------------------------|
| Jurisdiction: Iroquois County and Incorporated Communities | Title of Plan: Iroquois County Multi-Hazard Mitigation Plan | Date of Plan: July 28, 2010 |
| Local Point of Contact: Carl Gerdovich | Address: 550 South 10 th Street Watseka, Illinois 60970 | |
| Title: Director | | |
| Agency: Iroquois County Emergency Service Disaster Agency | | |
| Phone Number: (815) 432-6997 | E-Mail: cgesda@co.iroquois.il.us | |

| | | |
|------------------------|---------------|--------------|
| State Reviewer: | Title: | Date: |
|------------------------|---------------|--------------|

| | | |
|---------------------------------------|---------------|--------------|
| FEMA Reviewer: | Title: | Date: |
| Date Received in FEMA Region V | | |
| Plan Not Approved | | |
| Plan Approved | | |
| Date Approved | | |

| Jurisdiction: | DFIRM | | NFIP Status* | | | |
|----------------------------|--------------|-------------|---------------------|---|-----|-----------|
| | In Plan | NOT in Plan | Y | N | N/A | CRS Class |
| 1. Ashkum, Village of | | X | X | | | NA |
| 2. Beaverville, Village of | | X | | X | | NA |
| 3. Buckley, Village of | | X | | X | | NA |
| 4. Chebanse, Village of | | X | X | | | NA |
| 5. Cissna Park, Village of | | X | X | | | NA |
| 6. Clifton, Village of | | X | | X | | NA |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

| | | | | | | |
|------------------------------|--|---|---|---|--|----|
| 7. Crescent City, Village of | | X | X | | | NA |
| 8. Danforth, Village of | | X | | X | | NA |
| 9. Donovan, Village of | | X | | X | | NA |
| 10. Gilman, City of | | X | X | | | NA |
| 11. Iroquois County | | X | X | | | NA |
| 12. Iroquois, Village of | | X | X | | | NA |
| 13. Loda, Village of | | X | | X | | NA |
| 14. Martinton, Village of | | X | | X | | NA |
| 15. Milford, Village of | | X | X | | | NA |
| 16. Onarga, Village of | | X | X | | | NA |
| 17. Papineau, Village of | | X | | X | | NA |
| 18. Sheldon, Village of | | X | | X | | NA |
| 19. Thawville, Village of | | X | X | | | NA |
| 20. Watseka, City of | | X | X | | | NA |
| 21. Wellington, Village of | | X | | X | | NA |
| 22. Woodland, Village of | | X | X | | | NA |

* Notes:

Y = Participating

N = Not Participating

N/A = Not Mapped

LOCAL MITIGATION PLAN REVIEW CROSSWALK

PREREQUISITE(S)

1. Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|---------|-----|
| | | | NOT MET | MET |
| A. Has the local governing body adopted new or updated plan? | Section 1.1; Appendix A | | | |
| B. Is supporting documentation, such as a resolution, included? | Appendix A | | | |
| SUMMARY SCORE | | | | |

2. Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|---------|-----|
| | | | NOT MET | MET |
| A. Does the new or updated plan indicate the specific jurisdictions represented in the plan? | Section 1.1 | | | |
| B. For each jurisdiction, has the local governing body adopted the new or updated plan? | Section 1.1; Appendix A | | | |
| C. Is supporting documentation, such as a resolution, included for each participating jurisdiction? | Appendix A | | | |
| SUMMARY SCORE | | | | |

3. Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|---------|-----|
| | | | NOT MET | MET |
| A. Does the new or updated plan describe how each jurisdiction participated in the plan's development? | Sections 1.2, 2.0-2.4 | | | |
| B. Does the updated plan identify all participating jurisdictions, including new, continuing, and the jurisdictions that no longer participate in the plan? | Not Applicable | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

4. Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

- (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
- (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the plan provide a narrative description of the process followed to prepare the new or updated plan? | Section 2 | | | |
| B. Does the new or updated plan indicate who was involved in the current planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?) | Section 2.2 | | | |
| C. Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?) | Section 2.3 | | | |
| D. Does the new or updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process? | Ssections 2.1-2.3 | | | |
| E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information? | Section 2.4 | | | |
| F. Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process? | Not Applicable | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

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

5. Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the type ... of all natural hazards that can affect the jurisdiction.*

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan include a description of the types of all natural hazards that affect the jurisdiction? | Section 3.1 | | | |
| SUMMARY SCORE | | | | |

6. Profiling Hazards

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the risk assessment identify the location (<i>i.e.</i> , geographic area affected) of each natural hazard addressed in the new or updated plan? | Section 3.2 | | | |
| B. Does the risk assessment identify the extent (<i>i.e.</i> , magnitude or severity) of each hazard addressed in the new or updated plan? | Sections 3.2.X.2 | | | |
| C. Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan? | Sections 3.2.X.3 | | | |
| D. Does the plan include the probability of future events (<i>i.e.</i> , chance of occurrence) for each hazard addressed in the new or updated plan? | Sections 3.2.X.4 | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

7. Assessing Vulnerability: Overview

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard? | Section 3.4 | | | |
| B. Does the new or updated plan address the impact of each hazard on the jurisdiction? | Sections 3.2.X.2 | | | |
| SUMMARY SCORE | | | | |

8. Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties located in the identified hazard areas? | Section 3.2.6.1 | | | |
| SUMMARY SCORE | | | | |

9. Assessing Vulnerability: Identifying Structures

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---|-------|---|
| | | | N | S |
| A. Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas? | Section 3.4.3 | Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. | | |
| B. Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas? | Section 3.4.4.2 | Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

10. Assessing Vulnerability: Estimating Potential Losses

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---|-------|---|
| | | | N | S |
| A. Does the new or updated plan estimate potential dollar losses to vulnerable structures? | Tables 31-34 | Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. | | |
| B. Does the new or updated plan describe the methodology used to prepare the estimate? | Section 3.4.3 | Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. | | |
| SUMMARY SCORE | | | | |

11. Assessing Vulnerability: Analyzing Development Trends

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---|-------|---|
| | | | N | S |
| A. Does the new or updated plan describe land uses and development trends? | Section 3.4.4.2 | Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing. | | |
| SUMMARY SCORE | | | | |

12. Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks? | Section 3.4.2 | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

MITIGATION STRATEGY: §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.*

13. Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

| Element | Location in the Plan (section or annex and page #) | Reviewer’s Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards? | Section 4.2 | | | |
| SUMMARY SCORE | | | | |

14. Identification and Analysis of Mitigation Actions

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.*

| Element | Location in the Plan (section or annex and page #) | Reviewer’s Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard? | Appendix I | | | |
| B. Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure? | Section 4.3 | | | |
| C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure? | Section 4.3 | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

15. Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan describe the jurisdiction (s) participation in the NFIP? | Section 3.2.6.1; Table 10 | | | |
| B. Does the mitigation strategy identify, analyze and prioritize actions related to continued compliance with the NFIP? | Section 4.4.3 | | | |
| SUMMARY SCORE | | | | |

16. Implementation of Mitigation Actions

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.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?) | Section 4.4.1 | | | |
| B. Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the responsible department, existing and potential resources and the timeframe to complete each action? | Section 4.4.3; Appendix I | | | |
| C. Does the new or updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits? | Sections 4.4.2-4.4.3 | | | |
| D. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (i.e., deferred), does the updated plan describe why no changes occurred? | Not Applicable | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

17. Multi-Jurisdictional Mitigation Actions

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.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan include identifiable action items for each jurisdiction requesting FEMA approval of the plan? | Appendix I | | | |
| B. Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (<i>i.e.</i> , deferred), does the updated plan describe why no changes occurred? | Not Applicable | | | |
| SUMMARY SCORE | | | | |

PLAN MAINTENANCE PROCESS

18. Monitoring, Evaluating, and Updating the Plan

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

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|--|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan describe the method and schedule for monitoring the plan, including the responsible department? | Section 5.1 | | | |
| B. Does the new or updated plan describe the method and schedule for evaluating the plan, including how, when and by whom (<i>i.e.</i> the responsible department)? | Section 5.1 | | | |
| C. Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle? | Sections 5.1 | | | |
| SUMMARY SCORE | | | | |

LOCAL MITIGATION PLAN REVIEW CROSSWALK

19. Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan? | Section 5.2 | | | |
| B. Does the new or updated plan include a process by which the local government will incorporate the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate? | Section 5.2 | | | |
| C. Does the updated plan explain how the local government incorporated the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate? | Not Applicable | | | |
| SUMMARY SCORE | | | | |

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

| Element | Location in the Plan (section or annex and page #) | Reviewer's Comments | SCORE | |
|---|--|---------------------|-------|---|
| | | | N | S |
| A. Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?) | Section 5.1 | | | |
| SUMMARY SCORE | | | | |

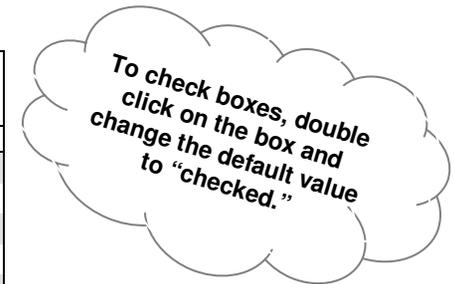
LOCAL MITIGATION PLAN REVIEW CROSSWALK

MATRIX A: PROFILING HAZARDS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any element of any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

| Hazard Type | Hazards Identified Per Requirement §201.6(c)(2)(i) | A. Location | | B. Extent | | C. Previous Occurrences | | D. Probability of Future Events | |
|---------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------|--------------------------|
| | Yes | N | S | N | S | N | S | N | S |
| Avalanche | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Erosion | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Dam Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Earthquake | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Expansive Soils | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Levee Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hailstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hurricane | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Land Subsidence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Landslide | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Severe Winter Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tornado | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tsunami | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Volcano | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildfire | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Windstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Legend:

§201.6(c)(2)(i) Profiling Hazards

- A. Does the risk assessment identify the location (*i.e.*, geographic area affected) of each hazard addressed in the **new or updated** plan?
- B. Does the risk assessment identify the extent (*i.e.*, magnitude or severity) of each hazard addressed in the **new or updated** plan?
- C. Does the plan provide information on previous occurrences of each natural hazard addressed in the **new or updated** plan?
- D. Does the plan include the probability of future events (*i.e.*, chance of occurrence) for each hazard addressed in the plan?

LOCAL MITIGATION PLAN REVIEW CROSSWALK

MATRIX B: ASSESSING VULNERABILITY

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that the new or updated plan addresses each requirement. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any element of any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk. Note: Receiving an N in the shaded columns will not preclude the plan from passing.

To check boxes, double click on the box and change the default value to “checked.”

| Hazard Type | Hazards Identified Per Requirement §201.6(c)(2)(i) | A. Overall Summary Description of Vulnerability | | | | B. Hazard Impact | | | | A. Types and Number of Existing Structures in Hazard Area (Estimate) | | | | B. Types and Number of Future Structures in Hazard Area (Estimate) | | | | A. Loss Estimate | | | | B. Methodology | | | |
|---------------------|--|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | Yes | N | | S | | N | | S | | N | | S | | N | | S | | N | | S | | N | | S | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Avalanche | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Erosion | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Dam Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Earthquake | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Expansive Soils | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Levee Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hailstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hurricane | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Land Subsidence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Landslide | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Severe Winter Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tornado | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tsunami | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Volcano | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildfire | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Windstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

- A. Does the **new or updated** plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?
- B. Does the **new or updated** plan address the impact of each hazard on the jurisdiction?

- B. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

- A. Does the **new or updated** plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses

- A. Does the **new or updated** plan estimate potential dollar losses to vulnerable structures?
- B. Does the **new or updated** plan describe the methodology used to prepare the estimate?

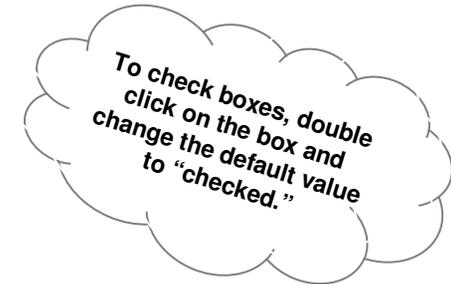
LOCAL MITIGATION PLAN REVIEW CROSSWALK

MATRIX C: IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

*Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An “N” for any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

| Hazard Type | Hazards Identified Per Requirement §201.6(c)(2)(i) | A. Comprehensive Range of Actions and Projects | |
|---------------------|--|--|--------------------------|
| | Yes | N | S |
| Avalanche | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Erosion | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coastal Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Dam Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Drought | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Earthquake | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Expansive Soils | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Levee Failure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Flood | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hailstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Hurricane | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Land Subsidence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Landslide | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Severe Winter Storm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tornado | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tsunami | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Volcano | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Wildfire | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Windstorm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Legend:

§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions

A. Does the **new or updated** plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?