MULTI-JURISDICTIONAL NATURAL HAZARDS MITIGATION PLAN

January 2013

Grundy County Multi-Jurisdictional Natural Hazards Mitigation Plan

Participating Jurisdictions

Braceville

Coal City

Diamond

Dwight

Grundy County

Mazon

Minooka

Morris

Seneca

South Wilmington

Verona

Grundy County Multi-Jurisdictional Natural Hazards Mitigation Plan

Plan Author: University of Illinois Extension

With assistance from: Illinois State Water Survey

Fall Semester 2009 DURP 438 Students under the direction of
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Grundy County Multi-Jurisdictional Natural Hazards Mitigation Plan Task Force

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Grundy County Mitigation Plan Task Force

PURPOSE STATEMENT

The Grundy County Natural Hazard Mitigation plan serves to provide guidance for all participating jurisdictions as to specific steps that may be undertaken to reduce the risk to life and property from natural hazards. Hazards considered in the plan include severe storms, tornados, severe winter storms, drought, extreme temperatures, flood, and earthquake. The plan identifies goals as well as specific actions to mitigate losses associated with these Natural Hazards.

The task force evaluated input from citizens, focus groups, and officials in determining projects to be included in the plan. Action items worked to reduce the impact of natural hazards on citizens, visitors, infrastructure, property and critical facilities. The plan developed will be adopted and implemented by each participating jurisdiction.

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Introduction

Why a Mitigation Plan?

The Disaster Mitigation Act of 2000 (DMA2K) recognized the need for jurisdictions to make and implement a plan to reduce the risk to life and property from natural hazards. In addition, the act requires these plans be approved by the Federal Emergency Management Agency (FEMA) in order for jurisdictions to receive any FEMA Mitigation Funding. Once approved, the plan must be monitored annually, and updated every five years.

This plan allowed Grundy County, Illinois, to develop a plan that looks to protect the health, safety, and welfare of their citizens. Much more than response, mitigation involves assessing the potential for damage from a natural hazard, and developing a project/plan to reduce or eliminate that damage. The preparation of this plan, funded by a grant from FEMA, follows the guidelines to make participating Jurisdictions eligible to apply for Mitigation Grant Funding.

Jurisdictional Participation in Plan Development

All jurisdictions within Grundy County, even those with only a portion of their incorporated area within the county, were invited to participate in the development of the multi-jurisdictional Natural Hazards Mitigation Planning Process. It was determined at the first Steering Committee meeting on June 14, 2012, that a jurisdiction must send a representative to at least 50% of the steering committee meeting to meet the minimum standard of jurisdictional participation. This standard was set by a consensus vote of the steering committee members present.

While 50% participation in steering committee meetings was determined to be the minimum requirement for participation, all jurisdictions were encouraged to participate in all of the meetings, including the public meetings. Eleven of the 15 Jurisdictions within the county participated, with no representative participating from Carbon Hill, East Brooklyn, Gardner, or Kinsman. Additionally, all jurisdictions were encouraged to solicit input from their citizens on the public survey.

Grundy County Demographic Overview

The following data is presented to provide an overview of Grundy County. All data are benchmarked against two near neighbors, La Salle and Livingston counties, and when appropriate the State of Illinois and the nation.

Population Trends

Long-Run Population Trend

The population of Grundy County has increased since 1900. 1910 to 1920 saw a sharp decrease in county population, between 1920 and 1940 the population trend remained flat, after which the population has grown steadily ever since. In 1900 the county had a population of 24,136 and by 2010 the population had grown to 50,063, an increase of 107 %. In comparison, over the same time period neighboring La Salle County saw an increase in population of 30 %, while Livingston County's population shrank by 7 % (see **Figure 1**).

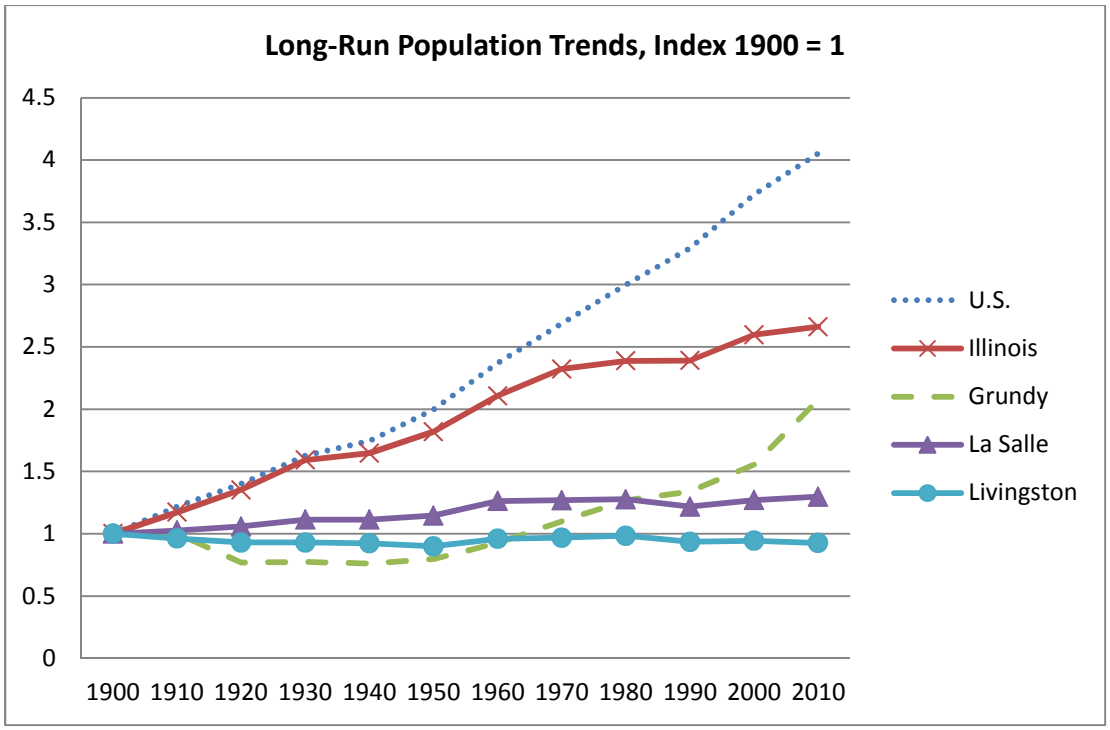


Figure 1 Source: U.S. Census Bureau Decennial Census 1900-2010

Medium-Run Population Trend

Population in Grundy County has increased from 26,173 in 1969 to 50,063 in 2010, a gain of about 92 %. The population trend over most of this time period has been steady growth and has closely mirrored aggregate national population growth. However, since 2003 the county has seen a significant increase in the population growth rate (see **Figure 2**). In contrast, La Salle County's population from 1969 to 2010 remained flat, growing by less than 2 %. Livingston County's population shrank by 5 % over the same time period.

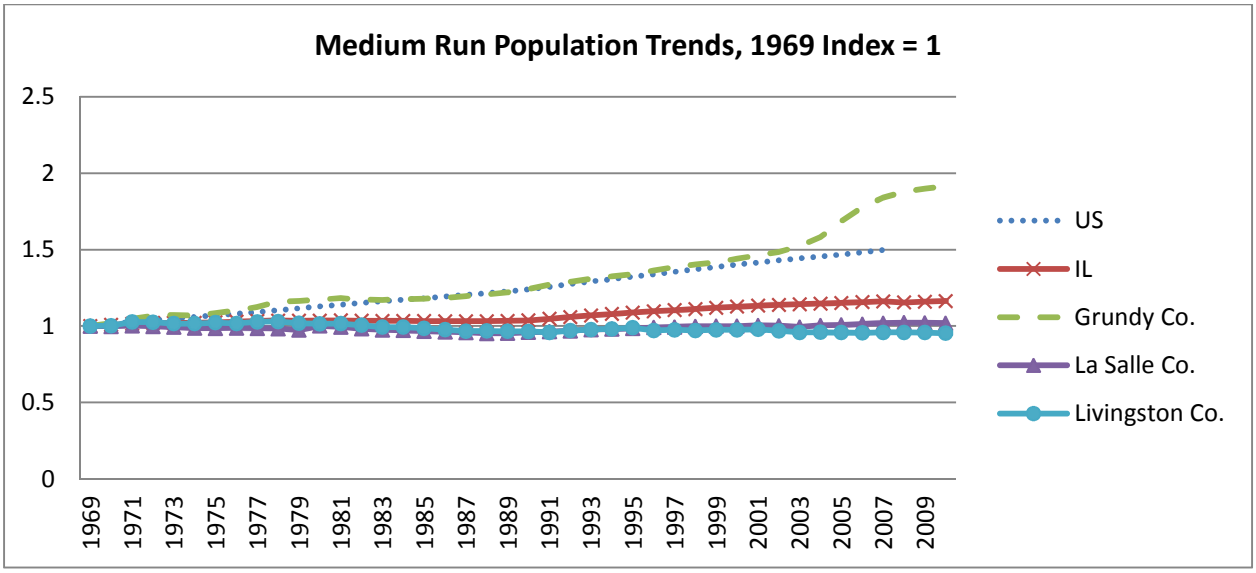


Figure 2 Source: Bureau of Economic Analysis, Regional Employment Information System

Age of the Population

Grundy County has a younger population than its two near neighbors, the state, and the nation. In 2010, 27.3 % of Grundy's population was under the age of 18. This was a higher proportion than all the other benchmark areas. Further, Grundy County has the lowest percentage of persons over 65 years of age among all benchmark areas (see **Figure 3**).

2010 Percentage of Population Under 18 and Over 65

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston
Under 18	24	24.4	**27.3**	23	22.5
Over 65	13	12.5	**11.1**	16.4	15.8

Figure 3 Source: U.S. Census Bureau, 2010 Decennial Census

Racial Make-up of the Population

Grundy County's population is predominantly white, and non-Hispanic. Whites comprised an 93.7 % of the population in 2010. Non-Hispanics of any race make up 91.9 % of the total population. Grundy County has similar racial make-up, but a larger proportion of Hispanic or Latino population and a smaller proportion of black or African American population, than its two neighbors LaSalle and Livingston counties (see **Figure 4 and Figure 5**).

2010 Racial Make-up

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston Co.
White	72.4%	71.5%	**93.7%**	93.2%	91.8%
Black	12.6%	14.5%	**1.2%**	1.9%	4.9%
Other	15.0%	14.0%	**5.1%**	4.9%	3.3%

Figure 4 Source: U.S. Census Bureau, 2010 Decennial Census

2010 Hispanic Population

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston Co.
Hispanic or Latino	16.3%	15.8%	**8.2%**	8.0%	3.9%
Not Hispanic or Latino	83.7%	84.2%	**91.8%**	92.0%	96.1%

Figure 5 Source: U.S. Census Bureau, 2010 Decennial Census

Income

Median Household and Per Capita Income

According to the U.S. Census Bureau, American Community Survey, 3-year estimates, the 2010 estimated median household income in Grundy County was $62,436. This was higher than both La Salle and Livingston counties which had median household incomes of $52,136 and $51,336 respectively. The figures for the State of Illinois and the U.S. were $55,010 and $51,222 respectively. Another recent measure which is furnished by the Bureau of Economic Analysis tracks per capita income. In 2007 the per capita income in Grundy County was $33,178. This was higher than La Salle County at $31,573, but slightly lower than Livingston County at $34,400.

Poverty Rate

According to the U.S. Census Bureau, American Community Survey, 3-year estimates, 8.3 % of Grundy County residents lived below the poverty line in 2010. The poverty rate among children under 18 was 10.3%. Grundy County compared favorably against all benchmark areas in both poverty measures (see **Figure 6**).

2010 Poverty Status

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston Co.
Population in Poverty	14.4%	13.1%	**8.3%**	11.1%	10.5%
Children in Poverty	20.1%	18.5%	**10.3%**	16.4%	12.7%

Figure 6 Source: U.S. Census Bureau, 2008-2010 American Community Survey 3-Year Estimates

Housing and Households

Household Types

Married couple families are the largest household type group in Grundy County. While this is also the largest group in all of the benchmark areas, a greater proportion of Grundy County households are married couples (see **Figure 7**).

2008 Estimated Households by Type and Presence of Own Children*

	The United States		Illinois		**Grundy Co.**		La Salle Co.		Livingston Co.	
Total Households	114,694,201		4,786,787		**18,773**		45,273		14,241	
Single Male Householder	13,067,150	11.39%	553,697	11.57%	**2,237**	**11.92%**	5,471	12.08%	1,649	11.58%
Single Female Householder	16,999,226	14.82%	735,190	15.36%	**2,350**	**12.52%**	7,507	16.58%	2,327	16.34%
Married-Couple Family	60,032,267	52.34%	2,496,554	52.16%	**11,139**	**59.34%**	25,332	55.95%	8,101	56.89%
With own children	27,564,656	24.03%	1,189,297	24.85%	**5,272**	**28.08%**	10,982	24.26%	3,522	24.73%
No own children	32,467,611	28.31%	1,307,257	27.31%	**5,867**	**31.25%**	14,350	31.70%	4,579	32.15%
Male Householder	4,690,889	4.09%	191,940	4.01%	**739**	**3.94%**	1,704	3.76%	515	3.62%
With own children	2,358,947	2.06%	87,622	1.83%	**446**	**2.38%**	946	2.09%	342	2.40%
No own children	2,331,942	2.03%	104,318	2.18%	**293**	**1.56%**	758	1.67%	173	1.21%
Female Householder	13,575,547	11.84%	567,244	11.85%	**1,621**	**8.63%**	4,080	9.01%	1,240	8.71%
With own children	7,988,457	6.97%	318,719	6.66%	**1,027**	**5.47%**	2,443	5.40%	810	5.69%
No own children	5,587,090	4.87%	248,525	5.19%	**594**	**3.16%**	1,637	3.62%	430	3.02%
Nonfamily: Male Householder	3,704,076	3.23%	143,153	2.99%	**462**	**2.46%**	766	1.69%	272	1.91%
Nonfamily: Female Householder	2,625,046	2.29%	99,009	2.07%	**225**	**1.20%**	413	0.91%	137	0.96%

Figure 7 Source: Claritas 2008 Estimates

*In contrast to Claritas Demographic Estimates, "smoothed" data items are Census 2000 tables made consistent with current year estimated and 5 year projected base counts.

O*wner Occupancy Rates*

Grundy County has a high rate of owner occupancy. In 2010, an estimated 75.1 % of occupied housing units were owner occupied. This owner occupancy rate in Grundy was higher than the U.S. and Illinois, and Livingston County, and slightly lower than LaSalle County (see **Figure 8**).

2010 Owner vs Renter Occupancy Rates

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston Co.
Owner Occupied	65.1%	67.5%	**75.1%**	74.5%	75.3%
Renter Occupied	34.9%	32.5%	**24.9%**	25.5%	24.7%

Figure 8 Source: U.S. Census Bureau, 2008-2010 American Community Survey 3-Year Estimates

Housing Type

Detached single-family homes are the predominant housing type in Grundy County. In 2010, an estimated 69.3 % of housing units in Grundy County were detached single family homes. Grundy County had a higher proportion of detached single family homes than the state and the nation, but a lower proportion than neighboring La Salle and Livingston counties (see **Figure 9**).

2010 Estimated Proportion of Housing Units by Units in Structure

	U.S.	Illinois	**Grundy Co.**	La Salle Co.	Livingston Co.
1 Unit Attached	5.8%	5.8%	**12.1%**	2.3%	2.2%
1 Unit Detached	61.6%	58.4%	**69.3%**	80.5%	77.2%
2 Units	3.9%	6.0%	**1.3%**	3.4%	2.6%
3 to 19 Units	13.9%	17.1%	**9.8%**	6.7%	10.5%
20 or More Units	8.3%	10.0%	**2.1%**	2.5%	2.4%
Mobile Home or Trailer	6.6%	2.7%	**5.2%**	4.6%	5.1%
Boat, RV, Van, etc.	0.1%	0.0%	**0.0%**	0.0%	0.0%

Figure 9 Source: U.S. Census Bureau, 2008-2010 American Community Survey 3-Year Estimates

Age of Structures

Grundy County's building stock is much newer than all benchmark areas. Grundy has both a greater proportion of structures built 2005 or later, and the smaller proportion of structures built prior to 1939 than the United States, Illinois, and both the neighboring counties (see **Figure 10**).

2010 Proportion of Structures by Age

	United States	Illinois	**Grundy Co.**	LaSalle Co.	Livingston Co.
Built 2005 or Later	5.0%	3.9%	**9.8%**	3.7%	1.7%
Built 2000 to 2004	8.6%	6.9%	**18.6%**	5.1%	5.0%
Built 1990 to 1999	14.0%	10.6%	**15.4%**	11.7%	8.5%
Built 1980 to 1989	14.1%	8.8%	**8.9%**	6.3%	8.5%
Built 1970 to 1979	16.3%	14.4%	**12.9%**	11.3%	11.2%
Built 1960 to 1969	11.3%	12.0%	**8.9%**	9.1%	12.7%
Built 1950 to 1959	11.2%	13.2%	**8.0%**	11.9%	14.5%
Built 1940 to 1949	5.7%	7.0%	**4.0%**	7.9%	6.8%
Built 1939 or Earlier	13.9%	23.1%	**13.7%**	33.0%	31.0%

Figure 10 Source: U.S. Census Bureau, 2008-2010 American Community Survey 3-Year Estimates

Grundy County Land Use and Development Trends

The following description of the land use patterns in Grundy County is taken from the 2005 Grundy County Comprehensive Plan. This information, which chiefly describes the land use pattern in the unincorporated portions of the County, is followed by a description of growth of the County's municipalities.

"The total area of the county is about 430 square miles or 274,560 acres. Of this total, 253,500 acres or 92.3% of the county is unincorporated. Since the majority of the developed land in the county is located within or adjacent to Morris, Coal City, Minooka, Channahon and Gardner, the remainder of the planning area has a predominantly open character.

The planning area is devoted to the following in order by acreage: agriculture and vacant; transportation (road and railroad right-of-way, airport, and other terminal facilities); public and semipublic (schools, cemeteries, and public and private open space); industrial; utilities (power plants and power line right-of-way); residential; and business and commercial uses. The latter six categories include all land classified as developed. Developed land in the unincorporated area accounts for 15.1.% of the total planning area as compared to only 7.7% in 1964.

The remainder of the planning area is classified as undeveloped and includes vacant land, water areas; and all farm land except farm residences. Farm land is classified as undeveloped only because of its non-intensive character. Agriculture is the dominant land use in this category, accounting for 215,200 acres or 84.9% of the total planning area."

Since 2004 the population in the unincorporated areas of Grundy County has continued to see growth. This is particularly true in the northeast portions of the county.

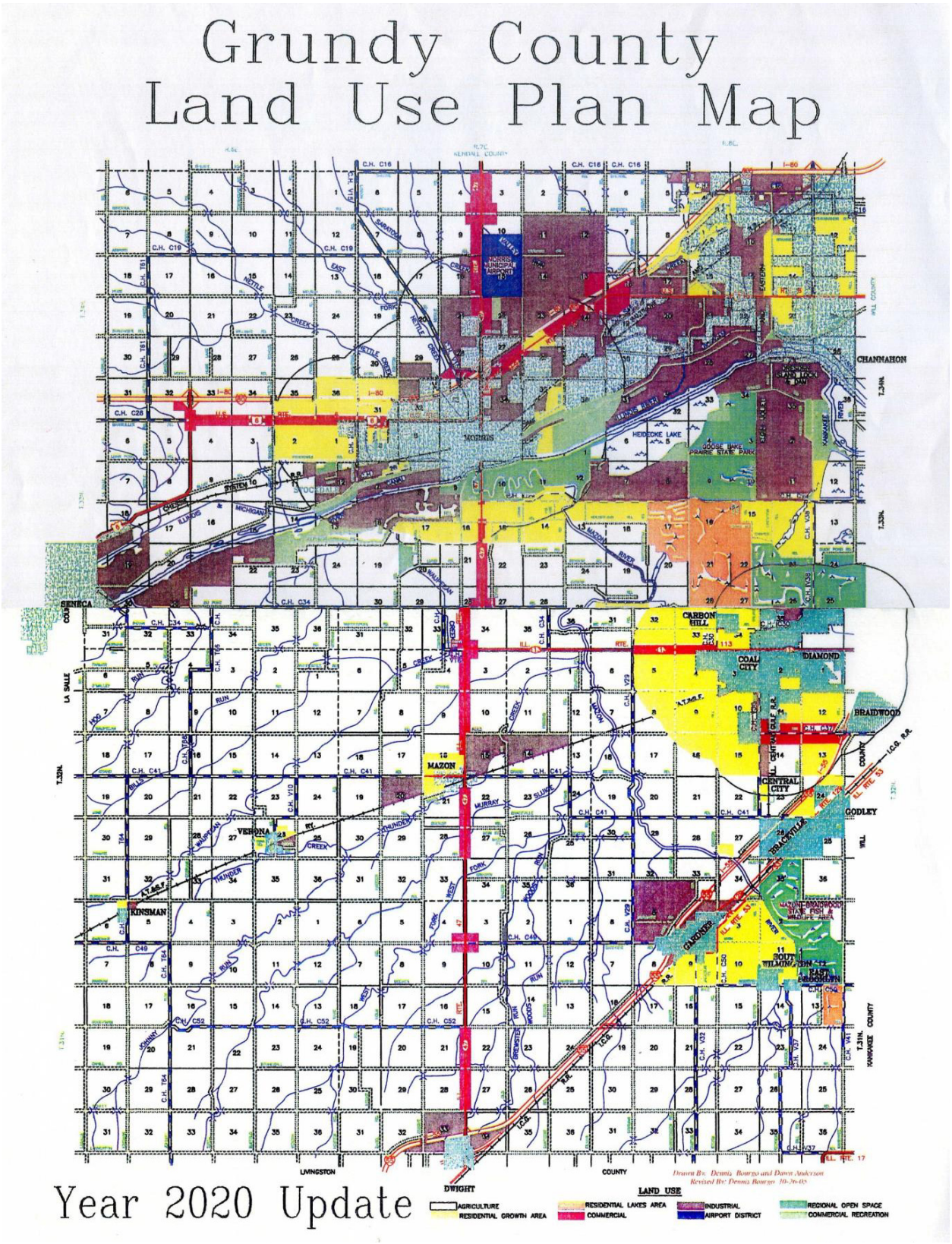


Figure 11 Source: Note: Yellow on this map represents residential growth area

Morris

The city of Morris is the largest city in Grundy County and is the county seat. Morris is in the northern part of the county and sits along the Illinois and Michigan Canal. This canal is the reason Morris is located where it is and is a focal point for the city's growth. Morris's Comprehensive Plan zones large areas of the city for development but the growth is planned to take 15-20 years. The city wants to grow slowly and maintain its agricultural lands and open spaces. Morris believes these areas create an identity and are valuable assets for the future.

By comparing the maps shown below, it becomes clear where and how Morris plans to grow in the future. The areas north and northeast of the city have the largest tracts of land being zoned for future development. The currently undeveloped farmland is being zoned commercial (red) along I-80 and industrial (pink) along I-80 and north of the canal. It can be assumed that this area is being specifically developed to take advantage of the great transportation routes.

The region west of the city is being zoned for residential growth. These seem to be the only areas where the city is planning on expanding residential development (yellow). There are currently residential zones south of the canal but most of that land is zoned as conservation and there is no indication for future development. The open spaces west of the city and bordering the canal are being developed as parks, except for a small portion being zoned for residential along the canal. Even with this small residential zone on the canal, most of the land around the waterway is being conserved as an open space and follows Morris' comprehensive plan.

City of Morris Existing Land Use Map

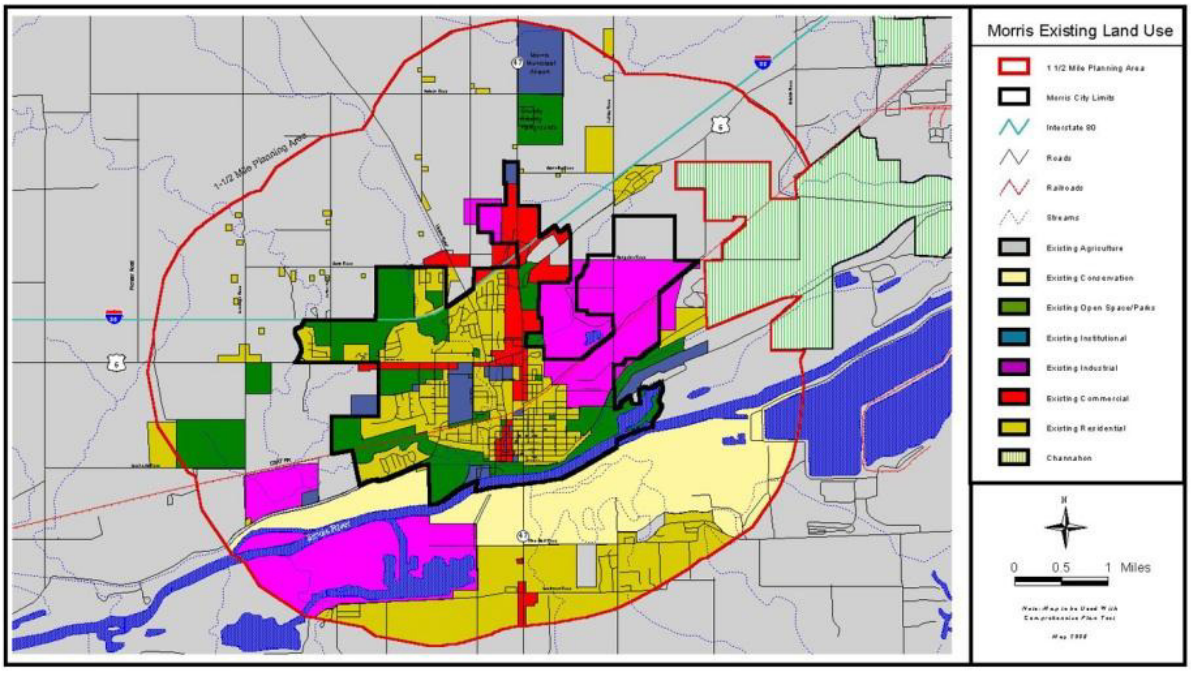


Figure 12 Source: http://city.mornet.org/html/existing_landuse_map.htm

City of Morris Future Land Use Map

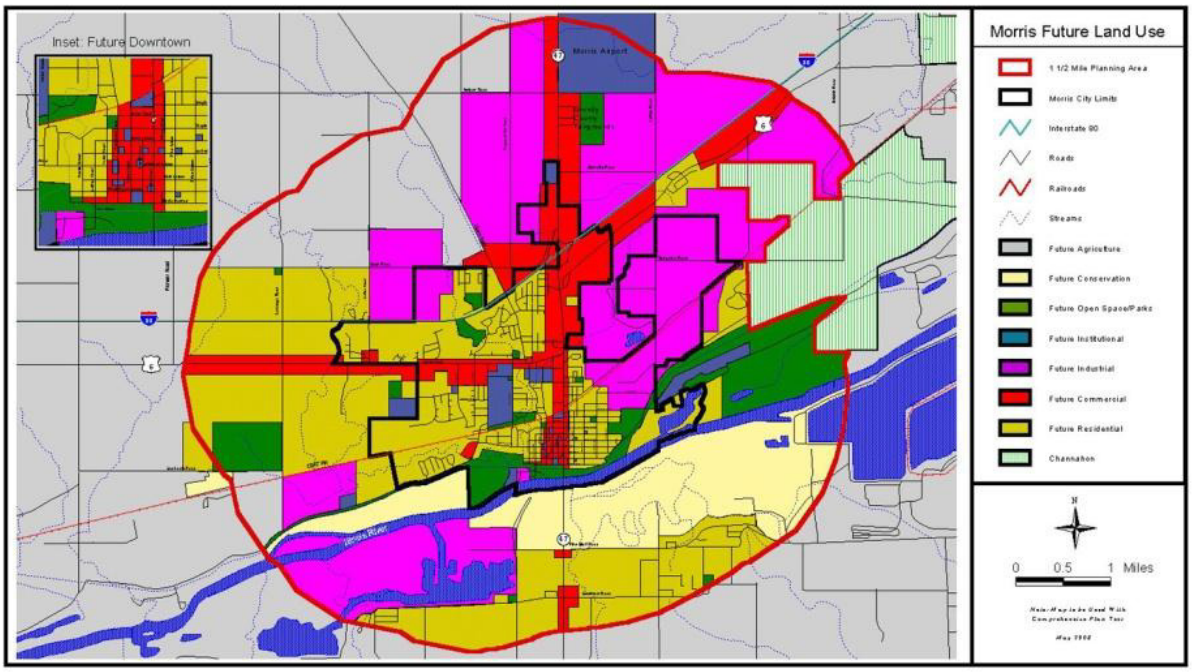


Figure 13 Source: http://city.mornet.org/html/futureland_map.htm

Minooka

Minooka is located in the northeast corner of Grundy County. Some portions of the city are in Will and Kendall counties. Minooka is a high growth village at the epicenter of the urban sprawl affecting Grundy County and it must take great care to absorb future growth. According to the U.S. Census the village had a population of 3,971 in 2000. By 2010 the population had risen to 10,924.

According to Minooka's 2005 Comprehensive plan, the village has designated a long strip of land along Aux Sable Creek for park and conservation use. This area is depicted in green on the future land use map below. Protecting this high quality open space is important as it provides open space for citizens to enjoy and will help restore the wetland ecosystem. Additionally, an important benefit for restricting and reducing development along the creek is diminishing the amount of risk for flooding up and down stream.

Large parcels of farmland in the north and northwest are planned for low density residential land use (yellow). The other significant changes that the city is planning for is the industrial use (pink) in the center of the town that connects to I-80 and the train tracks. Like Morris, it can be assumed that these industrial zones are being created because of the great transit routes the area offers.

City of Minooka Future Land Use Map

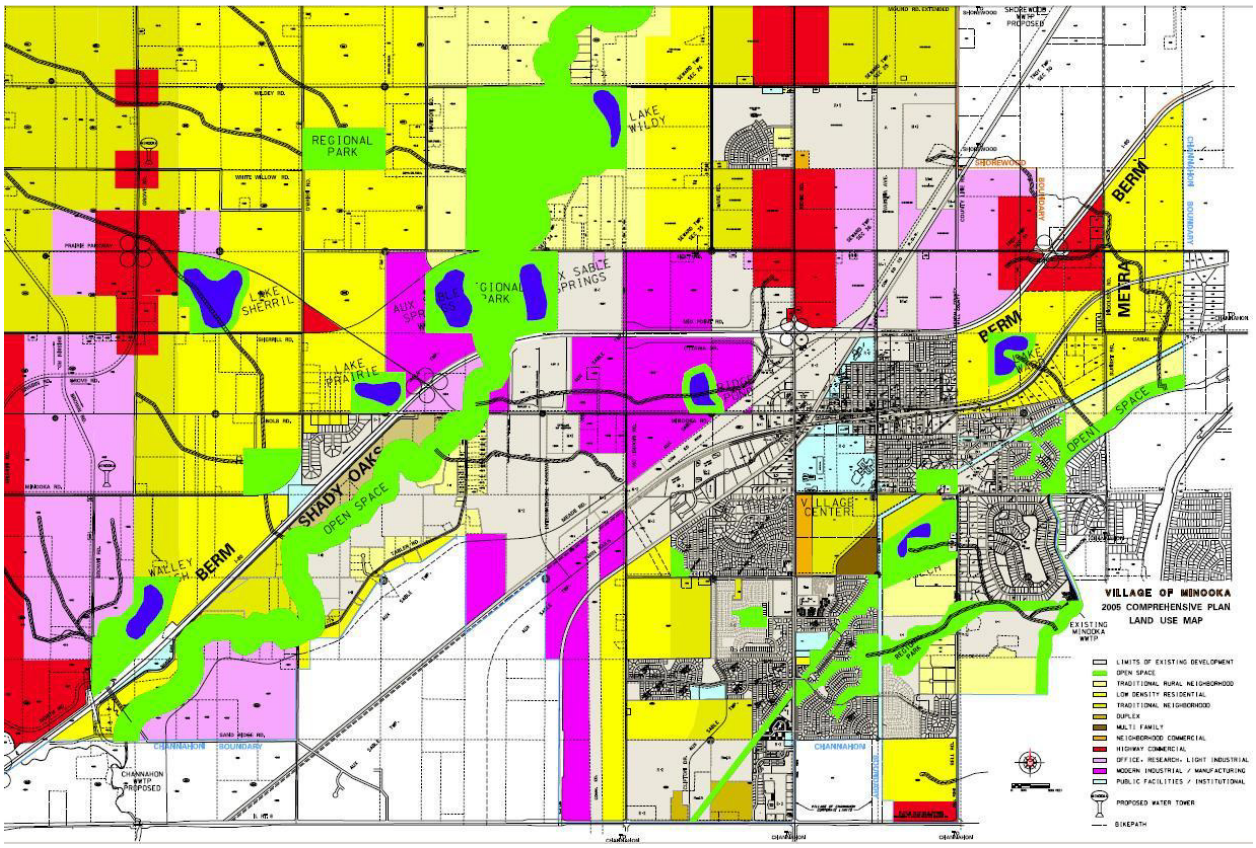


Figure 14 Source**:** http://www.minooka.com/Community/Maps/2005LandUse.pdf

Channahon

The Village of Channahon is located just south of Minooka and straddles Grundy and Will counties. The city's early development focused along the Illinois and Michigan Canal where small industries located. The area went largely undeveloped until the housing market boom in the Chicago suburbs starting in the 1990's. New growth has been rapid due to the previously mentioned sprawl development pressures from suburban Chicago. In 2000 the city had a population of 7,344. By the 2010 Census, the city's population had grown to 12,560.

The future land use map included below shows Channahon is annexing large portions of land south of Minooka for development. This area is within Grundy County and is a major region for future growth. As shown in the map, Channahon borders the Illinois River and Illinois and Michigan Canal. The main new residential growth (yellow) builds off of their current neighborhoods in the center of town. The largest sections of land are planned for heavy industrial use (dark purple) along the river. There is farmland sandwiched in between the river to the south and the railroad tracks to the north. This is where the most growth is being planned.

Village of Channahon Future Land Use Map

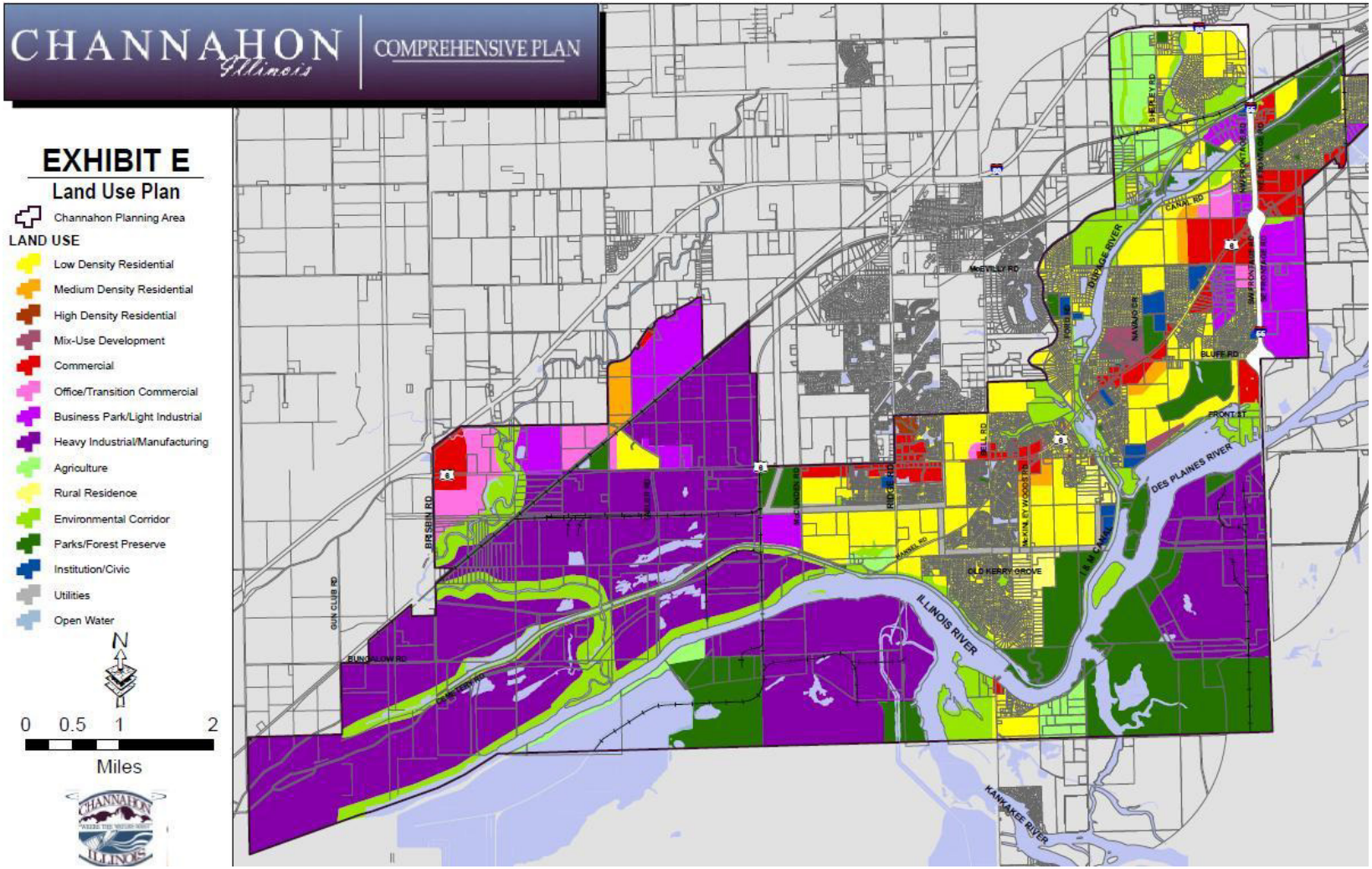


Figure 15 Source: http://www.channahon.org/Adobe/Maps/2008%20Comprehensive%20Plan%20rev2010.pdf

Other Municipalities

According to the future land use map from the 2007 Coal City comprehensive plan the village is targeting residential growth to the southwest, as well as growth in the interstitial land between Coal City and neighboring Diamond and Carbon Hill. At full build out, these three communities would become contiguous. Coal City and Carbon Hill are growing, although not at the same rate as Minooka or Channahon. In 2000 Coal City had a population of 4,797; in 2010 the population had grown to 5,587. Carbon Hill dropped from a population of 392 in 2000 to 345 in 2010. Diamond, on the other hand, is a high growth community. Diamond grew from 1,393 in 2000 to 2,527 in 2010. The map below shows where future growth around these communities is likely to occur.

Small Jurisdiction Land Use

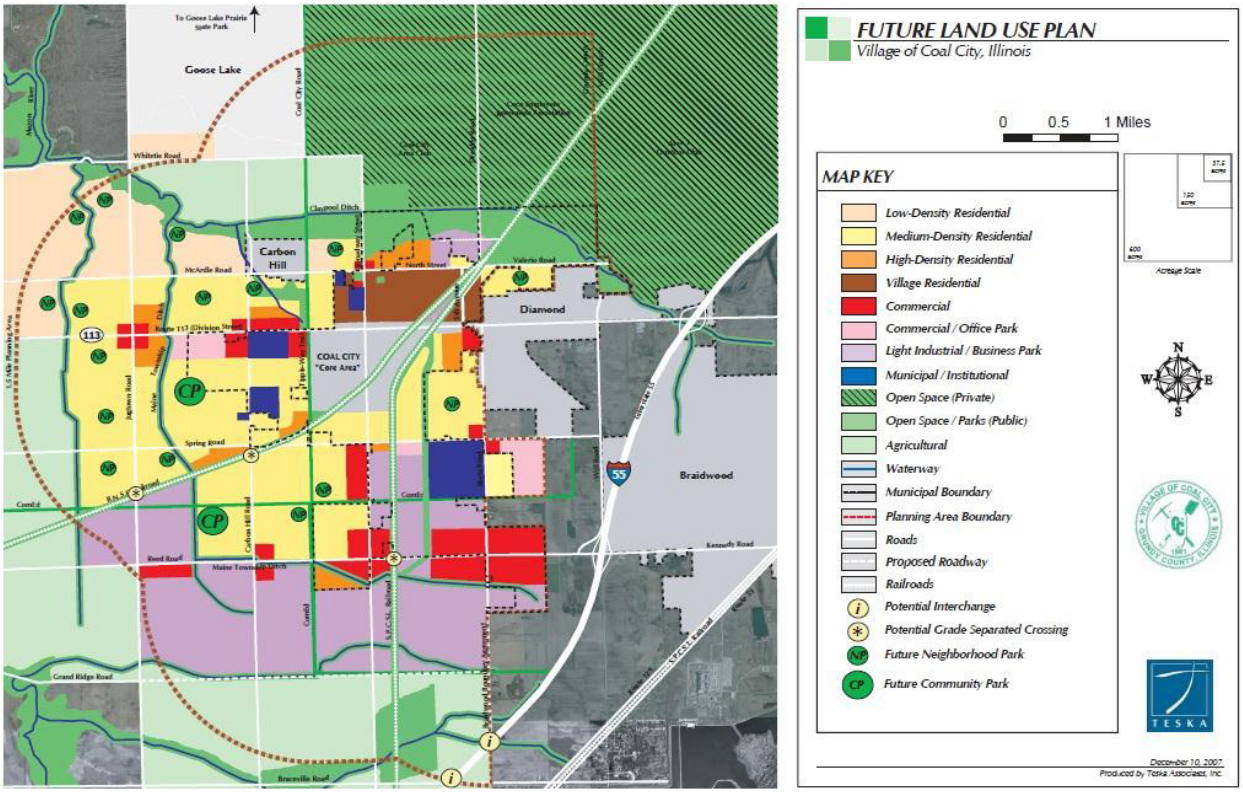


Figure 16

Major Employers in Grundy County

Information on the major employers in Grundy County, Illinois was retrieved from the Grundy County Economic Development website (http://www.gedc.com/majoremployers.html) on September 18, 2012. Due to the changing nature of the workforce, it is recommended that the reader recheck the website periodically to verify current data for major employers.

Grundy County Large Employers		
Company	Products/Services	Employees
Morris Hospital	Health, Medical	1000
Exelon - Dresden Station	Electric Generation	850
LyondellBasell	Polymer Resins	400
"D" Construction	Major Construction	350
Wal-Mart	Retail Merchandise	347
Costco	Distribution Center	260
Jewel-Osco	Retail Merchandise	250
Minooka CCSD 201	Public Education	210
Chicago Aerosol	Manufacturer - Aerosol Products	200
ITW Filtration	Plastic Filters	190
U.S. Cold Storage	Warehousing, Cold Storage	165
Minooka CHSD 111	Public Education	151
Coal City CUSD 1	Public Education	147
Menards	Retail Merchandise	140
Aux Sable Liquid Products	Natural Gas Extraction Facility	136
Northfield Block	Manufacturer - Block, Paver	124
Rezin Orthopedics	Orthopedics Practice	120
Reichhold Chemicals	Synthetic Chemicals	112
Utility Concrete Products	Pre-Cast Manufacturer	111
Akzo Nobel	Specialty Chemicals - Cationic Surfactants	100
A & R Distribution	Intermodal Distribution	83
ALDI, Inc.	Distribution	75
Morris SD 54	Public Education	74
Ryder Systems/Kraft	Distribution - Food	68
Ritchie Brothers	Large Equipment Auctioneers	67
BMW	Distribution - Auto Parts	65
Genco/Alberto Culver	Distribution - Consumer Products	61
Morris CHSD 101	Public Education	59

Figure 17

In addition to employers within the county, it is important to note that many residents of the county commute to neighboring counties for employment opportunities. Additionally, residents of neighboring counties

commute to Grundy County for employment opportunities. These commuting patterns indicate the need for maintaining road access in the event of natural disasters in order to insure economic stability. In reviewing neighboring counties' data, the top three employers for each county are listed in the illustration below. Workforce numbers for employers from Illinois Department of Commerce and Economic Opportunity Community Profiles.

County	Employer	Workforce
Kankakee	Riverside Medical Center	2100
	Shapiro Developmental Center	1240
	Provena St. Mary's Hospital	800
Kendall	Caterpillar, Inc	2200
	Public Schools	1600
	Menard's Distribution Center	1100
LaSalle	Public Schools	3150
	Commonwealth Edison	800
	JC Whitney	670
Livingston	RR Donnelley	800
	Pontiac Correctional Center	565
	Caterpillar, Inc	550
Will	Provena St. Joseph's Medical Center	2500
	Silver Cross Hospital	1800
	Hollywood Casino	1756

Figure 18 Surrounding County Major Employers

Planning Process

Grundy County received a planning grant through the Federal Emergency Management Agency (FEMA) to prepare the Natural Hazards Mitigation Plan. The County contracted with University of Illinois Extension to facilitate the planning process, as well as compile the final document. The risk assessment portion of the process was supplemented with a contract with the Illinois State Water Survey to perform the Earthquake and Flood Risk Assessment utilizing FEMA HAZUS Software.

The chart below illustrates the planning schedule for the Steering Committee. Jurisdiction participation was solicited after the April 26 planning meeting, so participating jurisdictions were asked to attend six steering committee meetings. Minutes of each meeting can be viewed in the appendix of this document.

Grundy County Planning Calendar

Date	Time	Event	Location	Topic

4/26/2012	11am	Organizing Meeting		Scheduling
6/14/2012	1pm	Steering Committee 1	EOC	Planning to Plan
7/26/2012	1pm	Steering Committee 2	EOC	Risk Assessment
8/30/2012	1pm	Steering Committee 3	EOC	Planning Goals
9/20/2012	1pm	Steering Committee 4	EOC	Initial Project Identification
10/18/2012	1pm	Steering Committee 5	EOC	Jurisdictional Project Grids
11/29/2012	email	Steering Committee 6		Draft Plan Review
1/17/2013	1pm	Steering Committee 7	EOC	Final Plan Review

Figure 19

Community Engagement in the Planning Process

The Grundy County Steering Committee recognized the importance of public input into the planning process. Multiple approaches were utilized to inform the public of the planning process, as well as solicit input from both the general public and community leaders. These efforts are detailed below.

Although most of the large media outlets covering Grundy County are broadcast from the nearby Chicago Metropolitan area, the committee utilized press releases, public meetings, industry sector focus groups, and community surveys to not only inform the public, but gather suggestions, opinions, and project ideas. Additionally, jurisdictional representatives to the Steering Committee were encouraged to talk with community members, friends and neighbors to gather as much information as possible on the community mindset in regards to mitigation.

Local newspapers and radio were helpful throughout the planning process. They not only ran the multiple press releases sent out from the Steering Committee, but sent reporters to cover the public events and ran news articles about the process.

Community Surveys were also available in both online and hard copy format, with the online link open from mid July 2012 through October 1, 2012. Steering Committee members and Extension Staff also had hard copy surveys available for the public to complete. These surveys focused upon the community's knowledge of and experience with natural disasters and their impact.

To ensure that all industry sectors were included in the process, seven focus groups were held over a two day period to gather input from the following Sectors:

-Ag and Natural Resources
-Business
-Education
-Health and Human Services
-Utilities
-Transportation
-Public Safety

Names of the individuals and organizations invited to participate, as well as notes from each group are included in the appendix.

Finally, a public meeting was held on August 30, 2012 in Morris at the County Board Chambers. The objective of this meeting was not only to inform the public of the planning process, but also encourage public comment

as to what can be done to reduce the risk to life and property from natural hazards throughout Grundy County. Notice of the public meeting was sent to all jurisdictions, media outlets, and neighboring jurisdictions to ensure all interested parties were made aware of the event.

Community Survey Results

Over the course of several months, a total of 108 surveys were collected from the citizens of Grundy County. The surveys were available in both hardcopy and through a Survey Monkey web link (see appendix XX). While the number of responses were low, enough responded for a statistical confidence of 95%.

Most of the respondents lived within the boundaries of a City (84.1%), and have lived in Grundy County over 5 years (93%). Interestingly, 86.8% of respondent households have experienced a natural disaster within Grundy County over the past years. **Figure 20** illustrates which natural hazards respondents have experienced.

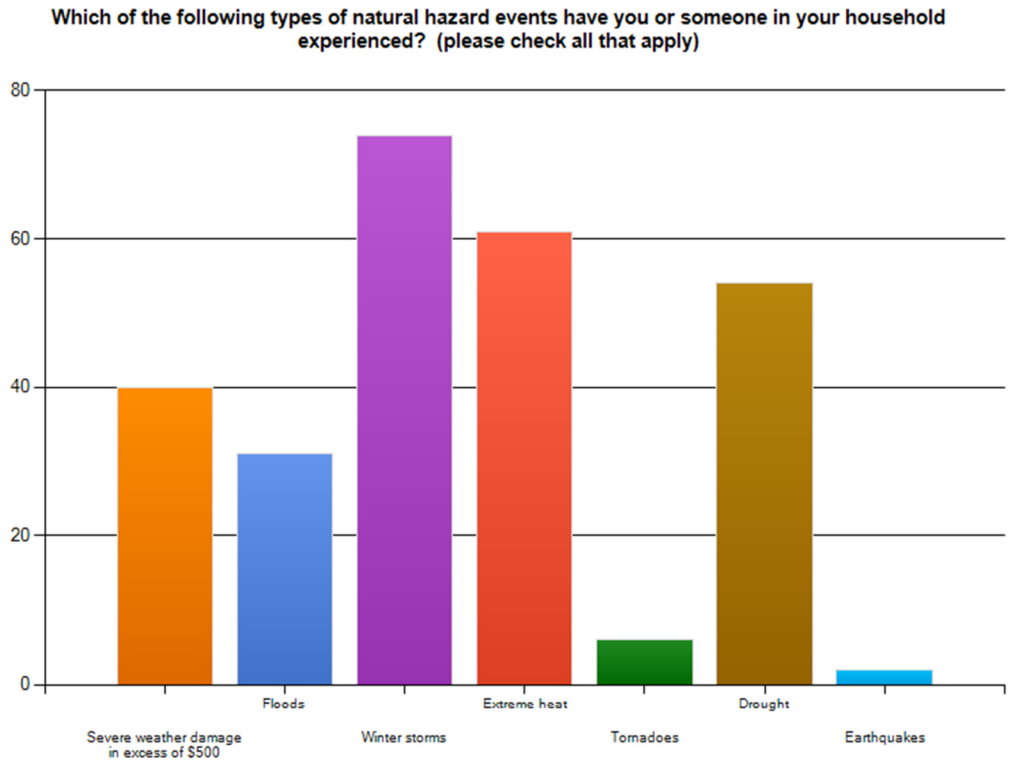


Figure 20 Natural Hazards Respondents Have Experienced

Perhaps due to this high level of personal experience, 42% of respondents provided suggestions on ways jurisdictions could reduce damages and hardships from natural disasters. These responses are categorized in the following figure.

Survey Mitigation Responses

SHELTER

- Community storm shelter. Build levee to stop flood from flooding homes on south side.
- Evacuation locations
- Construct a tornado shelter for residents living in the trailer court. Provide more training information on how to reduce risks.
- Have evacuation sites for families in case of tornado's or blizzards in schools/churches with beds/blankets/restrooms.

EDUCATION

- Education of public severe weather warning improved sirens, NOAA weather radio.
- Be aware of storm warnings and do whatever you're instructed to do.
- To be more informed about preparations.
- Preparedness at a personal level. Less reliance on emergency services during a disaster allows them to provide service to those who cannot help themselves.
- Community alerts and information on what to do, in various natural hazard events.
- Stay informed.
- Community information seminars
- Educate people on the limitations of help they can expect from the government.
- Education and early notification
- Better safety awareness
- Be more prepared and know when to stay indoors when natural disasters are approaching, when necessary.
- Warning Sirens and education
- People should not make unnecessary trips by auto during blizzards or when severe storms are occurring in the area.

PREPAREDNESS

- Having a "bug out" bag ready if needed.
- Preparedness plans, and sound government buildings
- Better notification and prevention measures
- Preparedness at a personal level. Less reliance on emergency services during a disaster allows them to provide service to those who cannot help themselves.
- Be prepared
- Practice natural disaster drills

Survey Mitigation Responses, cont.

- Be ready and proactive
- Prepare to take care of themselves for at least a week while government agencies spend their limited time clearing roads and tending to larger emergencies and injured people.

- We live on the outskirts of town and I feel more tornado sirens are needed in the area. The closest one to us is extremely hard to hear when they test it, so I don't feel that during a storm you would be able to hear it and our cable usually goes out as does the internet, etc.
- Prepare supply package for at least 2-3 days. Safe meeting place for family in case of separation due to hazardous events.
- Be prepared; have a plan A, B, or C if needed.
- The community; having good communications available. For the individuals; first and foremost, having and exercising common sense regarding the hazards associated with the different types of natural hazards.
- Prepare
- Self-awareness of how to react if hazardous events do occur.
- Be more active in training demonstrations.
- Get insurance against such things like floods; have a plan of action for such events.
- Review home owners insurance to make sure of adequate coverage.

INFRASTRUCTURE

- Training; reinforce infrastructure
- Improve the infrastructure.
- It is my understanding that the city's Public Works and gas pumps are usually the first to go (either they are flooded and inaccessible or no electricity). The new city hall/police department does not have a generator to run the entire building or the "back up" emergency operations center.
- Get insurance against such things like floods. Have a plan of action for such events.
- We need "back up" generator power at sewer and water treatment plants and the outdoor warning sirens need to be expanded.

EARLY WARNING

- Advanced warning notices
- Warning notices issued when a potential storm threatens
- Warning Sirens and education.
- Early notification through the use of cell phones getting information automatically.

OTHER

- Fundraisers or everybody just coming together to help in whatever way they can.
- A community or citizen-based, and government educated response team with minimal interaction to severe situations. Enough to free up first responders to handle more serious events.

Figure 21 –Survey Mitigation Responses

While 54% of respondents feel at least adequately prepared for natural hazards, they are concerned about the impacts of natural disasters, especially severe storms and winter storms. (**Figure 22**) This parallels the previous chart which indicates that most respondents (77.3%) have experienced a severe winter storm in the last five years.

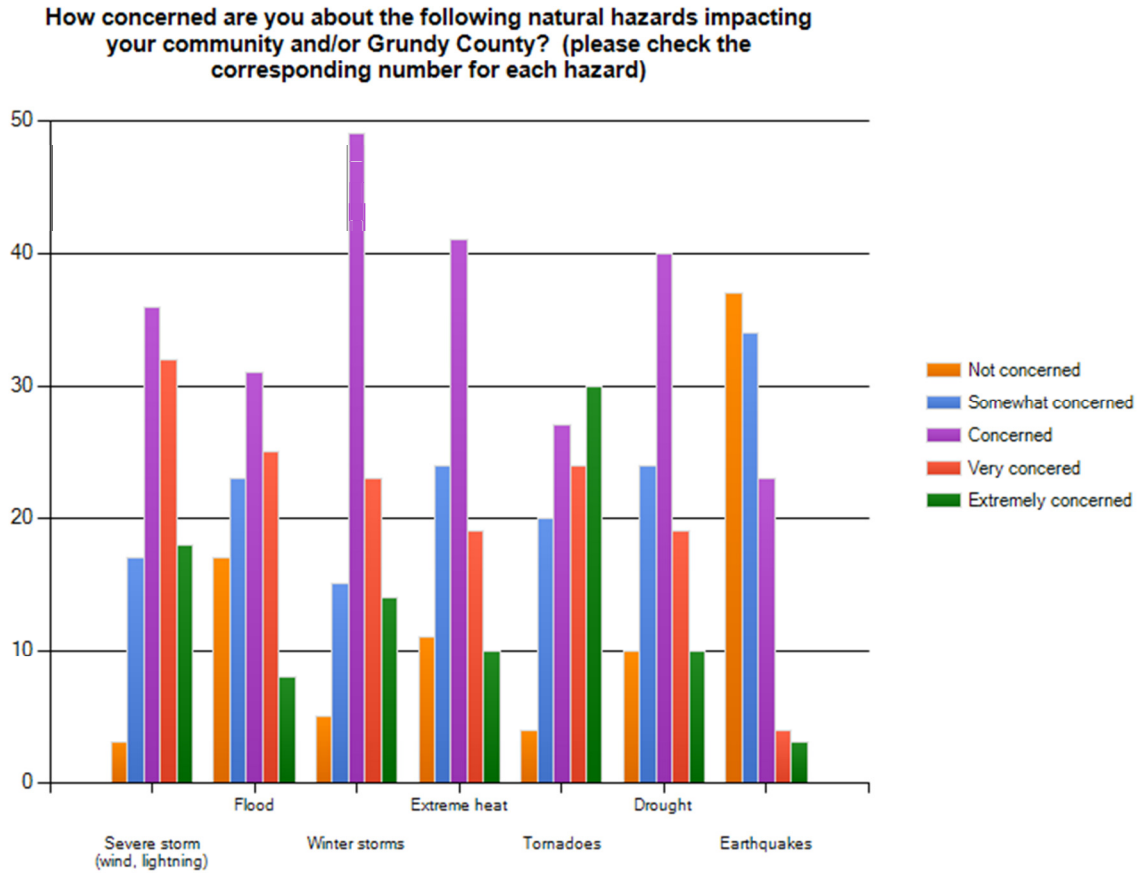


Figure 22 Natural Hazard Concern

Since many of the suggestions generated from the survey revolved around education and preparedness, it is interesting to note that the highest vote getter in response to the question about where the best place to receive information was the internet (68%), while the lowest ranked included books (8%) and newspaper ads (11%). A full list of the responses is illustrated in **Figure 23**.

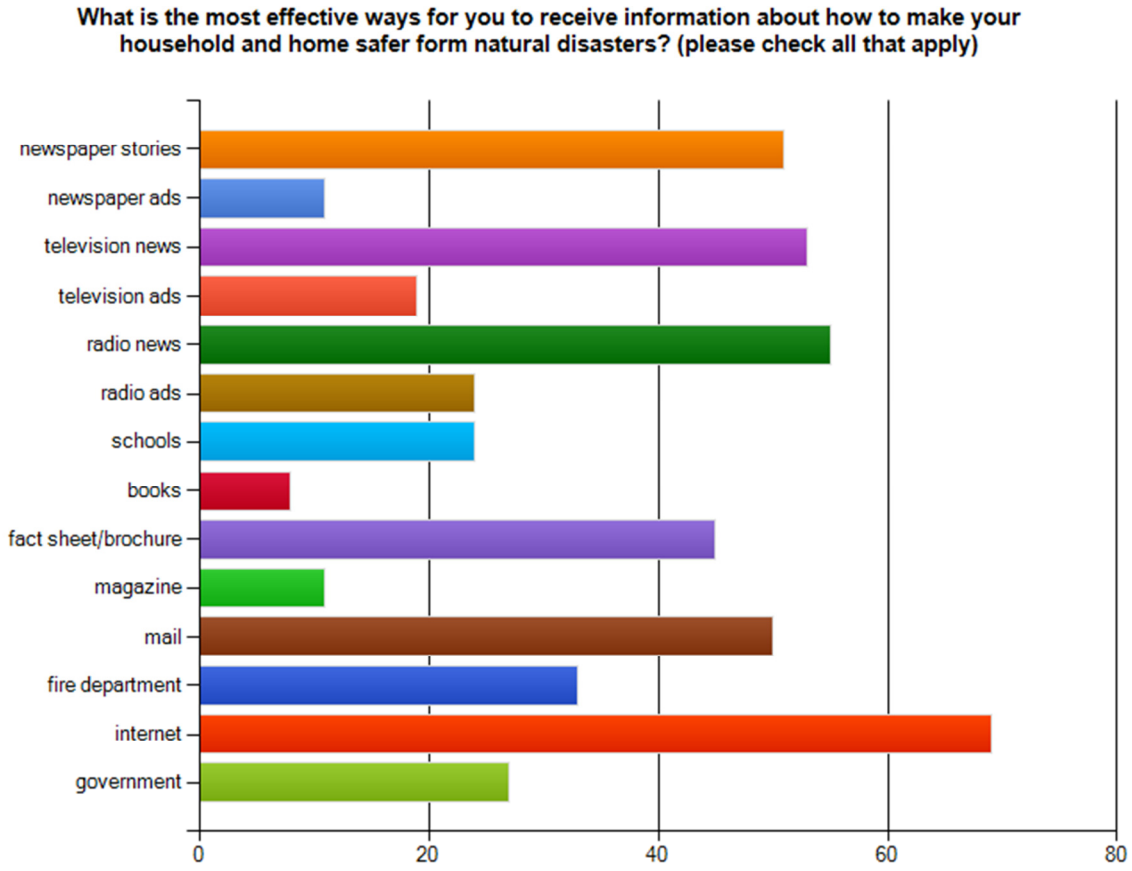


Figure 23 Information Mediums

The full survey results are included in the attachments.

Review and Incorporation of Existing Plans, Studies, Reports, and Technical Information

All known existing plans within Grundy County were gathered by U of I Extension Staff. At one of the Task Force meetings the community representatives were given a Documents Form to be completed in consultation with the leaders in their community, providing them with a list of plans and other documents that should be considered during preparation of the plan. Natural hazards mitigation can be incorporated into existing plans and ordinances during updates. If a community does not have particular regulations that would promote hazard mitigation, such as building codes, these could be considered for adoption. Other documents could provide helpful information for assessing risks or determining appropriate mitigation projects. A combined listing of community documents is shown in **Figure 24**.

In 2011 Grundy County conducted a threat hazard identification and risk assessment which included not only natural weather related hazards, but pandemics, and man-made hazards as well. This document was

considered in the preparation of this plan and the identification of potential mitigation action items. Additionally, the City of Morris is the site of the Exelon Corporation owned Dresden Generating Station, a nuclear power plant. Per Nuclear Regulatory Commission requirements, this plant has a detailed disaster response plan. The nuclear response plan was also reviewed and considered in the creation of this plan.

	Grundy County	Braceville	Carbon Hill	Coal City	Diamond	Dwight	East Brooklyn	Gardner	Kinsman	Mazon	Minooka	Morris	South Wilmington	Verona
Document														
Comprehensive Plan	X	X			X	X						X		
Subdivision Ordinance	X				X							X		
Zoning Ordinance	X	X			X							X		
Building Codes	X	X			X							X		
Land Use Plan					X							X		
Existing Land Use Map												X		
Flood Ordinance	X				X	X						X	X	
Flood Insurance Rate Map					X									
Repetitive Flood Loss List														
Elevation Certificates for Bldgs														
Capital Improvement Plan														

Historic Preservation Ordinance														
Storm Water Management Plan	X				X							X		
Hazard Mitigation Plan														
Emergency Management Plan	X					X						X		
Drainage Ordinance												X		
Critical Facilities Map	X													
Hazard Vulnerability Analysis	X													
Infrastructure Map														
Topographic Map														
Other												X		
Community Website												X		
Community Action														
Siren	X				X									
Weather Radio	X													
Storm Spotters														
Local Weather Station	X													

Watershed Repairs														
Road Treatment														

Figure 24 Existing Plan Table

Risk Assessment

On July 26, 2012, the Grundy County Hazard Mitigation Steering Committee met, with one of the key agenda items the determination of risk level for natural hazards in all Grundy County jurisdictions. This included the methodology adopted for the process. Information on the 2010 Illinois State Hazard Mitigation Plan Methodology was reviewed, as well as the risk assessment level for Grundy County included within the state plan. The steering committee opted a more simplistic approach of High/Moderate/Low risk as to each Natural Hazard.

As part of the risk assessment process, committee members reviewed historical weather data (see following section) for all natural hazards affecting the county. The risk level for each jurisdiction was done by consensus of the committee after reviewing not only the aforementioned historical weather data, but also the potential of loss to both property and life. Additionally, the committee utilized local knowledge of the topography of the jurisdictions.

During the risk assessment discussion, the group related past experiences that resulted in previous mitigation related activities, including greater coordination that resulted after the severe blizzard event of 2011. The resulting comments on implemented improvements in response to severe winter storms led the group to lower the risk from severe winter storms to moderate, while the 2010 Illinois State Hazard Mitigation Plan has the entire county rated at severe, which is the highest risk category from the State Plan.

The only potential weather event the committee rated as “high” was the across the board rating of severe storm/tornado. Not only do these types of weather events present a severe risk to all areas of the county, but they also present a mitigation challenge for the jurisdictions. Not a single designated “Tornado Shelter” exists within Grundy County, nor was the committee confident that there were many structures within the county that could be easily retrofitted to be designated as such.

The final risk assessment as determined by the committee is summarized in the following chart (**Figure 25**).

Summary of Grundy County Risk Assessment

Jurisdiction	Extreme Temperature	Flood	Severe Storm-Tornado	Drought	Earthquake	Severe Winter Storm
Grundy County	MOD	MOD	High	Low/MOD	MOD	MOD
Braceville	MOD	Low	High	Low	MOD	MOD
Carbon Hill	MOD	Low	High	Low/MOD	MOD	MOD
Channahon	MOD	Low	High	Low/MOD	MOD	MOD
Coal City	MOD	Low	High	Low/MOD	MOD	MOD
Diamond	MOD	MOD	High	Low/MOD	MOD	MOD
Dwight	MOD	Low	High	Low/MOD	MOD	MOD
East Brooklyn	MOD	High	High	Low/MOD	MOD	MOD
Gardner	MOD	Low	High	Low/MOD	MOD	MOD
Godley	MOD	Low	High	Low/MOD	MOD	MOD
Kinsman	MOD	Low/Mod	High	Low/MOD	MOD	MOD
Mazon	MOD	Low/Mod	High	Low/MOD	MOD	MOD
Minooka	MOD	Low	High	Low/MOD	MOD	MOD
Morris	MOD	Low	High	Low/MOD	MOD	MOD
South Wilmington	MOD	MOD	High	Low/MOD	MOD	MOD
Seneca	MOD	Low	High	Low/MOD	MOD	MOD
Verona	MOD	MOD	High	Low/MOD	MOD	MOD

Figure 25

Historical Weather Data

2010 Illinois Natural Hazard Mitigation Plan Ratings for Grundy County

The historical occurrence of natural hazards is one of four main criteria that were used in the Illinois Natural Hazard Mitigation Plan to create hazard ratings for each county in the state. Based upon historical frequency and probability, vulnerability, severity of impact, and a population criterion, the plan includes a rating for each type of natural hazard for each county. Ratings (from low to high) of low, guarded, elevated, high and severe were assigned based upon the aforementioned criteria. Grundy County was given the following ratings:

Hazard Ratings for Grundy County Assigned in the 2010 Illinois Natural Hazard Mitigation Plan

Severe Storms	Floods	Severe Winter Storms	Drought	Extreme Heat	Earthquake	Tornado
Severe	Elevated	Severe	Guarded	Elevated	Guarded	Elevated

Figure 26 Source: 2010 Illinois Natural Hazard Mitigation Plan

The previous version of the Illinois Natural Hazard Mitigation Plan, which was released in 2007, had slightly different ratings for Grundy County; severe winter storms and tornados were both rated "high." In the 2010 version, these hazards have been upgraded and downgraded one rating level, respectively.

Federal Disaster Declaration History Since 1981

Most of the federally declared disasters that Grundy County has been a part of since 1981 have been flood events.

FEMA DR#674 – In December of 1982 a federal disaster was declared for several Illinois counties including Grundy. This disaster declaration was the result of a series of severe storm, flooding, and tornado events which hit the area.

FEMA DR#735 – Grundy County was one of several counties that were a part of this 1985 disaster which was the result of flooding, severe storms and ice jams. This disaster also affected counties along the Kankakee, Wabash, and Illinois rivers

FEMA DR#1129 – This July 1996 declaration which included Grundy County was the result of serious flooding.

FEMA DR#1729 – Heavy rains in late August of 2007 led to this September disaster declaration. A total of six counties including Cook, DeKalb, Grundy, Kane, Knox, LaSalle and Warren were included in this disaster. By October of 2007 more than $3.8 million in individual and business assistance had been approved for the affected counties.

FEMA DR#1800 – Severe storms and heavy rain between September 13th and October 5th 2008 caused widespread flooding. Grundy County was part of the larger affected area. Sixty Grundy County households were approved for $213,452 in assistance through FEMA's Individuals and Households Program.

FEMA DR#1960 – Heavy snow fall between January 31st and February 3rd 2011 resulted in Grundy County's inclusion in a federal disaster which included most counties in Illinois.

Severe Storms

The National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center keeps a database of all severe weather events. With regard to severe storms the database keeps records of thunderstorm and high wind events, hail events, and tornados. According to the NCDC the Storm Events database keeps record of all thunderstorm and wind events, as well as hail events from 1955 forward[1]. However, the lack of damage inducing thunderstorm and high wind events before 1997 and the lack of any events before 1970 call into question the completeness of this data. The tornado events are reportedly tracked back to 1950.

The following Figure displays all of the damage or injury inducing thunderstorm and high wind events in Grundy County that are listed in the NCDC Storm Events Database.

Thunderstorm and High Wind Events Causing Damage or Injury in Grundy County 1955-Present

Location or County	Date	Time	Recorded Windspeed	Deaths	Injuries	Property Damage	Crop Damage
Morris	7/6/1994	2:52 PM	0 kts.	0	0	50K	0
Minooka	6/6/1995	2:50 PM	0 kts.	0	0	15K	0
GRUNDY	10/24/1995	12:00 PM	0 kts.	2	0	0	0
Morris	6/17/1996	5:30 PM	0 kts.	0	0	30K	0
Countywide	10/29/1996	5:30 PM	62 kts.	0	0	100K	5K
SE Part Of Cnty	4/5/1997	5:00 PM	52 kts.	0	0	70K	0
GRUNDY	4/6/1997	9:30 PM	59 kts.	0	0	10K	0
Morris	7/27/1997	5:42 PM	68 kts.	0	0	20K	0
Morris	6/28/1998	3:10 AM	61 kts.	0	0	60K	40K
GRUNDY	8/24/1998	1:03 PM	44 kts.	0	1	0	0
GRUNDY	11/10/1998	7:30 AM	56 kts.	0	4	0	0
Morris	6/10/1999	11:15 AM	50 kts.	0	0	150K	0
Minooka	7/21/1999	8:30 PM	55 kts.	0	0	50K	0
Mazon	5/31/2000	1:56 PM	65 kts.	0	2	100K	0
Mazon	9/11/2000	9:35 PM	70 kts.	0	0	50K	0
GRUNDY	3/9/2002	11:52 AM	51 kts.	4	4	200K	0
GRUNDY	1/23/2003	1:00 AM	N/A	1	0	0	0
Morris	7/7/2003	8:35 PM	61 kts.	0	0	2.5M	0
GRUNDY	11/13/2003	2:00 PM	51 kts.	0	2	0	0
Mazon	5/30/2004	10:00 AM	55 kts.	0	0	20K	0
Gardner	5/29/2006	3:20 PM	50 kts.	0	0	2K	0
Morris	10/2/2006	10:30 PM	56 kts.	0	0	50K	150K
GRUNDY	2/3/2007	12:00 AM	N/A	1	0	0K	0K
Morris	6/18/2007	4:15 PM	60 kts.	0	0	50K	0K
Morris	8/23/2007	1:45 PM	60 kts.	0	0	100K	50K
Morris	8/23/2007	5:44 PM	54 kts.	0	0	25K	0K
Morris	7/10/2008	3:30 PM	52 kts.	0	0	50K	50K
Coal City	7/10/2008	4:24 PM	55 kts.	0	0	50K	50K
Morris	7/21/2008	7:02 AM	63 kts.	0	0	90K	50K
Paytonville	7/21/2008	7:02 AM	59 kts.	0	0	0K	0K
Morris	7/21/2008	7:05 AM	60 kts.	0	0	50K	0K
Morris	7/21/2008	7:08 AM	52 kts.	0	0	1K	0K
Morris	7/21/2008	7:08 AM	59 kts.	0	0	10K	50K
Minooka	8/4/2008	7:21 PM	61 kts.	0	0	25K	0K
Harrisonville	6/5/2010	8:20 PM	65 kts.	0	0	50K	0K
Paytonville	7/11/2010	7:50 PM	55 kts.	0	0	1K	0K
Morris	7/23/2010	4:45 PM	60 kts.	0	0	10K	0K
Morris	5/11/2011	5:15 PM	55 kts.	0	0	4K	0K
GRUNDY	6/20/2011	5:00 AM	55 kts.	0	0	50K	0K

Coal City	8/2/2011	9:01 PM	56 kts.	0	0	10K	0K

The following Figure displays the number of hail events in Grundy County that are listed in the NCDC Storm Events Database.

Figure 27 Source: National Climatic Data Center

Number of Hail Events by Jurisdiction 1955-Present

Notes: (1) denotes that this storm event affected an area larger than, but including Grundy County. Not all of the damage displayed in the records with (1) occurred in Grundy County.

Jurisdiction	Number of Hail Events
Unspecified – Grundy County	9
Coal City	10
Gardner	3
Gorman	1
Kinsman	4
Mazon	5
Minooka	1
Morris	16
Seneca	1

Source: National Climatic Data Center

Figure 28

The following Figure displays all of the damage or injury inducing tornado events in Grundy County that are listed in the NCDC Storm Events Database.

Tornados Causing Injuries or Property Damage 1950-Present

Location or County1	Date	Time		Magnitude	Deaths	Injuries	Property Damage	Crop Damage
GRUNDY	6/8/1958	6:30 PM	Tornado	F1	0	0	3K	0
GRUNDY	11/12/1965	2:35 PM	Tornado	F2	0	0	25.0M	0
GRUNDY	4/19/1973	5:45 PM	Tornado	F2	0	0	250K	0
GRUNDY	5/20/1975	3:50 PM	Tornado	F2	0	1	250K	0
GRUNDY	4/27/1984	5:10 PM	Tornado	F1	0	0	250K	0
GRUNDY	5/8/1988	5:00 PM	Tornado	F1	0	0	250K	0
Minooka	4/20/2004	6:10 PM	Tornado	F0	0	0	76K	0

Note: 1 - "GRUNDY" in all capital letters refers to an unspecified location within Grundy County

Figure 29 Source: National Climatic Data Center

Severe Winter Storms

From 1995 through Spring 2012 there were 21 snow or ice events in Grundy County or just over 1 per year. The following Figure displays the number of winter storms, ice storms, blizzards, and heavy snow events that have occurred in Grundy County since 1995.

Snow and Ice Events in Grundy County 1995 - Present

Date	Time	Type	Deaths	Injuries	Property Damage	Crop Damage

12/8/1995	12:00 PM	Winter Storm	0	0	0K	0K
1/15/1997	6:00 AM	Winter Storm	5	0	0K	0K
3/9/1998	4:00 AM	Heavy Snow	0	0	0K	0K
1/1/1999	7:00 PM	Heavy Snow	1	0	0K	0K
3/8/1999	5:00 PM	Heavy Snow	0	0	0K	0K
1/19/2000	12:00 PM	Heavy Snow	0	0	0K	0K
1/30/2002	7:00 PM	Winter Storm	0	0	0K	0K
3/2/2002	9:00 AM	Winter Storm	0	0	0K	0K
2/6/2007	7:00 AM	Winter Storm	0	0	0K	0K
2/13/2007	2:00 AM	Blizzard	0	0	0K	0K
12/1/2007	10:45 AM	Ice Storm	0	0	0K	0K
12/15/2007	1:00 PM	Heavy Snow	0	0	0K	0K
1/31/2008	2:00 PM	Winter Storm	0	0	0K	0K
2/1/2008	12:00 AM	Winter Storm	0	0	0K	0K
12/18/2008	10:00 PM	Ice Storm	0	0	0K	0K
12/18/2008	10:00 PM	Winter Storm	0	0	100K	0K
12/21/2008	1:00 AM	Blizzard	0	0	0K	0K
1/14/2009		Winter Storm	0	0	0K	0K
12/11/2010	2:00 PM	Winter Storm	0	0	0K	0K
2/21/2011	1:00 PM	Blizzard	0	0	0K	0K
1/20/2012	10:00 AM	Winter Storm	0	0	0K	0K

Figure 30 Source: National Climatic Data Center

Drought

According to the National Drought Mitigation Center there have been 49 reported impacts from droughts affecting Grundy County from January 2002 to mid-July 2012. These impacts fall into several categories. There were 28 agricultural impacts, 13 relief, response & restriction impacts, 5 plants & wildlife impacts, 5 water supply & quality impacts, 4 society & public health impacts, and 1 tourism & recreation impact. It should be noted that a single drought event can have multiple impacts which fall into different impact categories. Grundy County was affected in many ways including crop damage and drinking water issues.

Extreme Temperatures

The following Figure includes all the extreme temperature entries for Grundy County in the NCDC database. It should be noted that these temperature extremes affected an area larger than just Grundy County.

Temperature Extremes in Grundy County 1995-Present

Date	Time	Type	Deaths	Injuries
7/12/1995	11:00 AM	Heat	583	0
2/2/1996	12:00 AM	Extreme Cold	3	0
1/23/2003	1:00 AM	Extreme Cold/Wind Chill	1	0
1/29/2004	6:00 PM	Extreme Cold/Wind Chill	0	0
2/3/2007	12:00 AM	Extreme Cold/Wind Chill	1	0
2/7/2008	12:00 AM	Cold/Wind Chill	1	0

1/15/2009	2:00 AM	Extreme Cold/Wind Chill	0	0
6/22/2009	12:00 PM	Excessive Heat	1	0
1/1/2010		Cold/Wind Chill	1	0
12/13/2010		Cold/Wind Chill	1	0

Figure 31 Source: National Climatic Data Center
Note: The deaths shown were not all Grundy County residents. The temperature extremes listed affected areas larger than just Grundy County.

Earthquakes

There is no record of significant earthquake damage in Grundy County.

[1]Hazus Flood Hazard Analysis

The Federal Emergency Management Agency (FEMA) has developed and supports the use of Hazus methodology (http://www.fema.gov/plan/prevent/hazus), which uses geographic information systems (GIS) tools and fiscal data to assess risk in terms of potential losses for a given flood event or other natural disaster scenario. This analysis helps to identify potential impacts of natural hazards for planning and mitigation. Flood Insurance Rate Maps (FIRMs) show the expected extent of flooding inundation. However, risk exposure combines the extent and depth of flooding with social and economic impacts. The Hazus analysis conducted for Grundy County uses the computational power of Hazus with updated information on essential facilities, structures, and flood hazards to provide a solid, consistent framework to quantify the county's risk. The information generated can be used for planning mitigation efforts in order to reduce risk and for planning emergency response. Furthermore, the objective Hazus output will provide a baseline for evaluating success in reducing exposure to natural hazard risks when conducting future assessments.

The Hazus assessment is highly data dependent; the accuracy of the analysis depends on a number of important datasets, including essential facilities and general building stock inventories. Use of the national datasets is considered a Level 1 Hazus analysis. The Grundy County Hazus work included an update of the essential facilities database, a user-defined facility analysis using parcel and assessor's data provided by Grundy County, and use of updated flood data based on the August 2012 Digital Flood Insurance Rate Map (DFIRM). The Hazus flood analysis was performed to investigate the impact of the 1% annual chance flood (a.k.a., the 100-year flood).

[1] "*All population data utilized in the HAZUS analysis* is based on the default Hazus general building stock database. The demographics table in the Hazus database provides housing and population statistics at the census block level including distributions of income, population, demographics, and occupancies, based on the 2000 U.S. Census."

Repetitive Loss Data

A repetitive loss property, as defined by FEMA, is any NFIP insured structure that has been damaged by flood two or more times during a ten year period. Additionally, in order to qualify as a repetitive loss property, the damage must meet or exceed 25% of the market value at the time of the loss. FEMA's Community Information System Website was utilized as a source to determine repetitive loss structures within the county. As part of the flood analysis for Grundy County, and in accordance with FEMA requirement, repetitive loss data was reviewed. According to FEMA's BureauNet, there are 30 repetitive loss structures, representing 80 losses in Grundy County. See Appendix 11 for a detailed breakout of the counties repetitive loss data.

Flooding Hazards Used for Analysis

Two types of methods were used in the flood hazard analysis for Grundy County. A Level 3 hazard analysis was completed for all stream reaches that had cross sections with 1% annual chance flood elevations based on detailed engineering models. A Level 1 Hazus "Quick Look" analysis was run to estimate the flooding hazard on streams without detailed engineering models.

For the Level 3 analysis, cross sections and 1% annual chance flood elevations were taken from the August 2, 2012 Digital Flood Insurance Rate Map (DFIRM) database. A 1% annual chance flood elevation grid was built from this data, and then ground elevations were subtracted, creating a flood depth grid.

The Level 1 analysis was created using the floodplain boundaries for streams without cross sections or detailed engineering studies. The floodplain boundaries used in the analysis are designated as Zone A on the 2012 FIRM. Using the Quick Look tool in Hazus, the floodplain boundaries were overlaid on ground elevation data, and flood depths were estimated based on the extent of those boundaries.

Depth grids created by both methods were then merged and input into Hazus to complete the risk assessment analysis. For both analysis methods, the ground elevation data used was a Digital Elevation Model (DEM) grid derived from the 2008 countywide LiDAR acquired for Grundy County.

Essential Facilities

Essential facility data are an example of site-specific information used in Hazus for analysis. Essential facilities include schools, medical care facilities, emergency operation centers, police stations, and fire stations. The Hazus-MH 2.1 database was modified using community feedback from meetings and the National Geospatial-Intelligence Agency dataset. Locations of these facilities were confirmed using community feedback and Internet mapping services such as Google Maps.

Essential Facilities List

Figure 32 identifies the essential facilities that were used for the analysis. A complete list of the essential facilities is included as Appendix 1. A map of all the essential facilities is included as Appendix Y.

Essential Facilities List

Facility	Number of Facilities
Medical Care Facilities	7
Emergency Operations Centers	5
Fire Stations	11
Police Stations	6
Schools	27

Figure 32

At Risk Essential Facilities

The Hazus analysis identified Morris Hospital and Prairieland Kids Daycare, both located in the City of Morris, to be at risk for moderate flooding damages. A map of the essential facilities potentially at risk to flooding is shown in Figure 33.

1% Annual Chance Floodplain and Essential Facilities at Risk

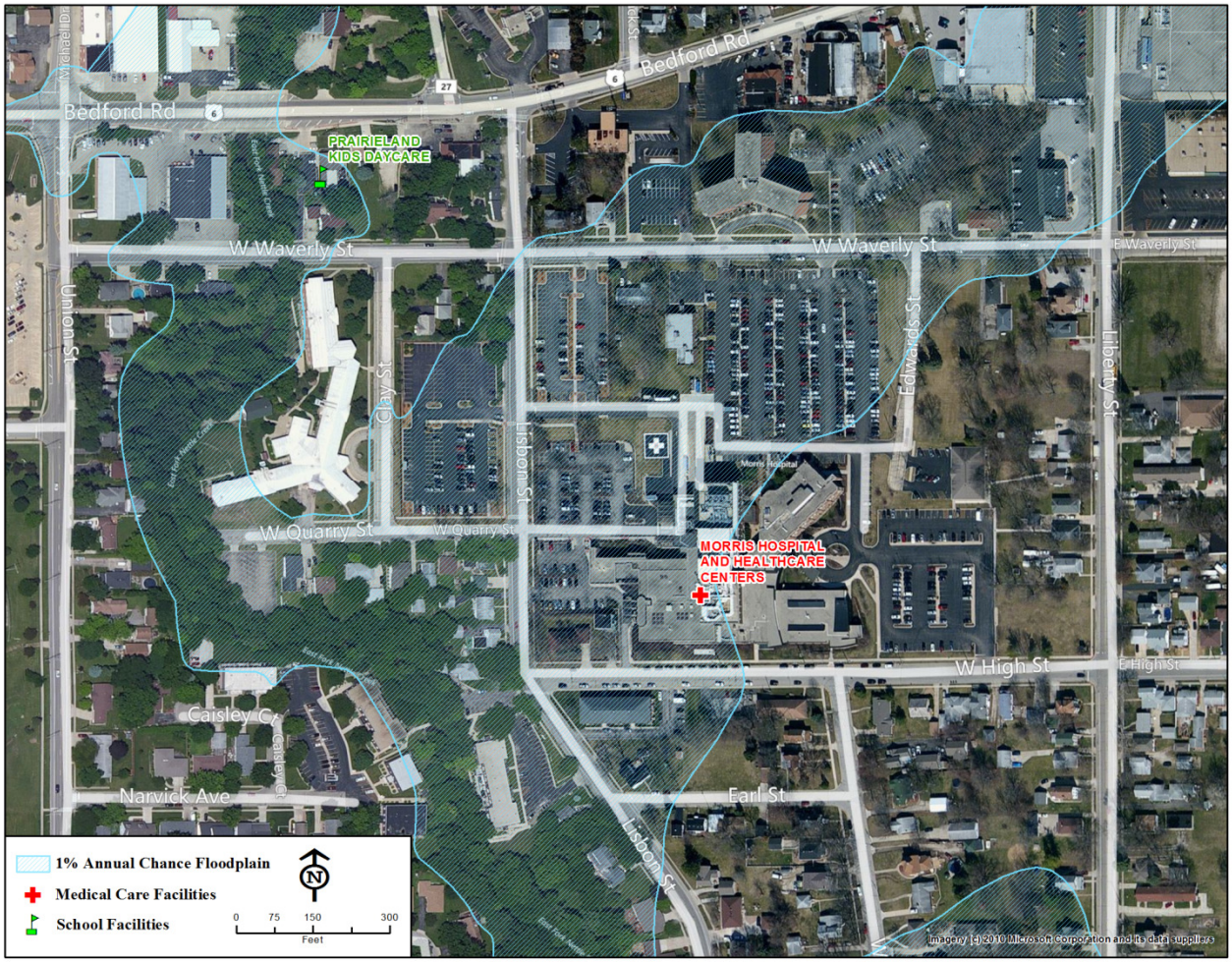


Figure 33

Essential facilities located within the flood boundary are at risk for damages similar to those of other buildings located within the flood risk area. These damages include structural failure, water damage, and loss of facility functionality. Not only are the structures vulnerable to damage, the contents and staff are also at risk.

User Defined Facilities (UDF)

A User Defined Facilities Figure was created using parcel and assessor's data provided by Grundy County. Using GIS, the parcel data were joined with the assessor's data and converted into a polygon feature class based on the parcels which contained information such as the assessed value of the property. The features were classified into several different occupancy classes that are compatible with Hazus. Figure 34 gives a brief explanation of these classes.

Hazus Building Occupancy Classes

Hazus Category	Occupancy Class	Hazus Category	Occupancy Class
Residential		**Industrial**	
RES1	Single Family Dwelling	IND1	Heavy
RES2	Mobile Home	IND2	Light
RES3A	Multi Family Dwelling -Duplex	IND3	Food/Drugs/Chemicals
RES3B	Multi Family Dwelling – 3-4 Units	IND4	Metals/Minerals Processing
RES3C	Multi Family Dwelling – 5-9 Units	IND5	High Technology
RES3D	Multi Family Dwelling – 10-19 Units	IND6	Construction
RES3E	Multi Family Dwelling – 20-49 Units	**Agriculture**	
RES3F	Multi Family Dwelling – 50+ Units	AGR1	Agriculture
RES4	Temporary Lodging	**Religion/Non-Profit**	
RES5	Institutional Dormitory	REL1	Church/Membership Organizations
RES6	Nursing Home	**Government**	
Commercial		GOV1	General Services
COM1	Retail Trade	GOV2	Emergency Response
COM2	Wholesale Trade	**Education**	

COM3	Personal and Repair Services	EDU1	Schools/Libraries
COM4	Business/Professional/Technical Services	EDU2	Colleges/Universities
COM5	Depository Institutions		
COM6	Hospital		
COM7	Medical Office/Clinic		
COM8	Entertainment & Recreation		
COM9	Theaters		
COM10	Parking		

Figure 34

Estimates for fair market value and content cost were calculated from the assessed value of the structure based on its occupancy class. The fair market values and content cost were then combined to create an estimate for the total replacement cost of the structures. Since religious and other tax exempt structures have no tax assessed values, they were not included in this analysis. Schools and other identified government buildings were included provided they had values for the total replacement cost from the Hazus essential facilities database.

Total Building Exposure

There are an estimated 17,995 structures located in Grundy County. The actual total may be higher due to the exclusion of certain non-taxable facilities detailed above. Estimates on the total replacement value of the structures are detailed in **Figure 35** below.

Total Building Exposure by Occupancy Type

Occupancy	Building Count	Building Exposure
Agricultural	1,219	$293,181,060
Commercial	897	$636,031,930
Educational	25	$208,300,878
Government	20	$31,407,820
Industrial	96	$5,880,654,000
Residential	15,738	$3,691,532,118
Total	**17,995**	**$10,741,107,806**

Figure 35

Despite only comprising 0.5% of the total structures, Industrial facilities represent 55% of the total exposure for Grundy County. This is due to the high dollar value of these facilities, most notably the Dresden Generating Station, a nuclear power plant located in northeastern Grundy County.

User Defined Facilities Flood Analysis

For the flood analysis, the parcels that fell within or touched the 1% annual chance flood plain boundary, taken from the Grundy County DFIRM, were extracted and converted into points. Using a combination of ArcGIS online Bing Maps service and 2005 United States Geological Survey (USGS) Digital Orthophotography, the points were moved onto the corresponding structures. Structure points that did not fall within the 1% annual chance flood boundary were removed so the analysis only included structures within the 1% annual chance flood plain boundary. The final points were then loaded into Hazus and a User Defined Facilities analysis was run. The results are listed in **Figure 36** below.

Estimated Losses by Occupancy

Occupancy	Number of Buildings Damaged	Building Damage Losses	Content Losses	Total Losses
Residential	628	$29,884,635	$17,693,990	$47,578,626
Commercial	48	$6,715,411	$11,392,807	$18,108,218
Industrial	8	$887,362	$3,643,039	$4,530,402
Agricultural	83	$4,866,453	$7,653,889	$12,520,343
Total	**767**	**$42,353,861**	**$40,383,725**	**$82,737,589**

Figure 36

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates the number of displaced people that will require accommodations in temporary public shelters. This estimate was based on the default Hazus general building stock database.

The model estimates 1,025 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 1,795 people (out of a total population of 37,535) will seek temporary shelter in public shelters.

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) finishes (dry wall, insulation, etc.); 2) structural (wood, brick, etc.); and 3) foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material-handling equipment required to handle the debris. This estimate was based on the default Hazus general building stock database.

The model estimates that 22,660 tons of debris will be generated. Finishes compose 30% of the total, and structures compose 40% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 906 truckloads (@ 25 tons/truck) to remove the debris generated by the flood.

Hazus Earthquake Analysis

Earthquake occurrence is not common within the state of Illinois. "However, a recent study of earthquakes around the world within stable interior parts of continents shows that earthquakes with magnitudes up to 6.8 can occur anywhere in these settings. A magnitude 6.8 earthquake would produce intensities of VII to IX (refer to Figure XI.1)." (IEMA, p. 112)

Probabilities of Future Earthquakes

The likelihood of an earthquake of magnitude 6.3 or greater occurring somewhere in the Central U.S. within the next 15 years is 40% to 63% and 86% to 97% within the next 50 years. An earthquake of this size would damage older structures, especially those of masonry construction. Serious damage could also occur to many schools in the region (ISGS, 1995).

Earthquake Occurrence in the Vicinity

According to the United States Geological Survey/National Earthquake Information Center (USGS/NEIC) database of earthquakes in 1973–present and significant U.S. earthquakes in 1568–1989, there have been 11 recorded earthquakes in a 160 kilometer radius of the approximate center of Grundy County. Two of those earthquakes have been under magnitude 3, three events were between magnitude 3 and 4, and the remaining six events were between magnitude 4 and 5.1. The strongest earthquake within this 160 km radius was a magnitude 5.1 event that occurred on May 26, 1909, approximately 43 km from the center of the county. At approximately 24 km from the center of the county, the closest earthquake was a magnitude 4.5 event, which occurred on January 2, 1912.

Earthquake Magnitude vs. Modified Mercalli Intensity Scale

Magnitude	Typical Maximum Modified Mercalli Intensity
1.0 – 3.0	I
3.0 – 3.9	II – III
4.0 – 4.9	IV – V
5.0 – 5.9	VI – VII
6.0 – 6.9	VII – IX
7.0 and higher	VIII or higher

Figure 37 http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

Abbreviated Modified Mercalli Intensity Scale

I. Not felt except by a very few under especially favorable conditions.
II. Felt only by a few persons at rest, especially on upper floors of buildings.
III. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV. Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI. Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII. Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X. Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI. Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Figure 38 http://earthquake.usgs.gov/learn/topics/mag_vs_int.php

Description of Earthquake Scenario

The Hazus assessment is highly data dependent; the accuracy of the analysis depends on a number of important datasets, including essential facilities and general building stock inventories. Use of the national datasets is considered a Level 1 Hazus analysis. For planning purposes, this scenario involves a Hazus Level 1 analysis of a theoretical moment magnitude 5.5 earthquake with an epicenter located in Grundy County at latitude 41° 17’ 30.8394” N, and longitude 88° 25’ 8.0394” W. This locates the epicenter within Section 24, Township 33 North, Range 7 East, or approximately 4.2 miles south of the City of Morris. Depth of origin used in the analysis was 10 kilometers below the surface.

Building Damage

The Hazus General Building Stock data was used for this analysis. The assessor's data was not used because it did not meet the data requirements of the Hazus earthquake model.

Hazus estimates that about 1,538 buildings will be at least moderately damaged. This is over 9% of the total number of buildings in the region. An estimated 31 buildings will be damaged beyond repair. Figure 38 below summarizes the expected damage by general occupancy for the buildings in the region. Figure 39 summarizes the expected damage by general building type.

Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	148	1.2	34	1.1	24	1.9	6	2.7	1	2.0
Commercial	580	4.5	136	4.4	81	6.4	20	8.5	2	6.8
Education	22	0.2	5	0.2	3	0.2	1	0.3	0	0.4
Government	23	0.2	4	0.1	3	0.2	1	0.2	0	0.3
Industrial	191	1.5	45	1.5	28	2.2	7	3.0	1	2.2
Other Residential	3,222	25.1	775	25.2	349	27.4	57	24.6	7	21.2
Religion	42	0.3	10	0.3	6	0.5	2	0.7	0	0.7
Single Family	8,631	67.1	2,072	67.2	779	61.2	140	60.1	21	66.5
Total	**12,859**	**100.0**	**3,081**	**100.0**	**1,273**	**100.0**	**234**	**100.0**	**32**	**100.0**

Figure 39

Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)

Wood	9,204	71.6	2047	66.4	562	44.1	52	22.4	3	8.7
Steel	303	2.4	63	2.0	51	4.0	12	5.2	1	2.2
Concrete	174	1.4	34	1.1	20	1.6	3	1.4	0	0.5
Precast	79	0.6	15	0.5	16	1.3	6	2.6	0	0.6
Reinforced Masonry	73	0.6	10	0.3	9	0.7	2	1.0	0	0.1
Unreinforced Masonry	2,360	18.4	739	24.0	497	39.0	143	61.2	28	86.5
Manufactured Housing	666	5.2	174	5.7	118	9.3	14	6.2	0	1.4
Total	**12,859**	**100**	**3,082**	**100**	**1,273**	**100**	**232**	**100**	**32**	**100**

Figure 40

Economic Loss

The total economic loss estimated for the earthquake is $277.25 million, which includes building and lifeline-related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

Building losses are broken into two categories: direct building losses and business interruption losses. Direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. Business-interruption losses are those associated with the inability to operate a business because of the damage sustained during the earthquake. Business-interruption losses also include temporary living expenses for those people displaced from their homes because of the earthquake.

Total building-related losses were $134.76 million; 14% of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 62% of the total loss. Figure 40 below provides a summary of the losses associated with building damages.

Building-Related Economic Loss Estimates

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							

	Wage	$0	$246,000	$3,097,100	$123,300	$196,400	$3,662,800
	Capital-Related	$0	$105,000	$2,656,100	$80,000	$51,600	$2,892,700
	Rental	$1,209,300	$812,400	$1,623,700	$50,200	$64,600	$3,760,200
	Relocation	$4,506,400	$637,700	$2,660,600	$281,100	$692,500	$8,778,300
	Subtotal	**$5,715,700**	**$1,801,100**	**$10,037,500**	**$534,600**	**$1,005,100**	**$19,094,000**
Capital Stock Losses							
	Structural	$8,475,800	$1,187,600	$3,055,300	$730,300	$1,063,300	$14,512,300
	Non Structural	$37,704,600	$8,584,600	$12,936,600	$3,948,400	$3,112,200	$66,286,400
	Content	$16,656,600	$2,943,300	$9,163,700	$2,967,400	$2,283,800	$34,014,800
	Inventory	$0	$0	$196,800	$568,600	$86,700	$852,100
	Subtotal	**$62,837,000**	**$12,715,500**	**$25,352,400**	**$8,214,700**	**$6,546,000**	**$115,665,600**
	Total	**$68,552,700**	**$14,516,600**	**$35,389,900**	**$8,749,300**	**$7,551,100**	**$134,759,600**

Figure 41

GIS Tornado Analysis

The following analysis was performed on a scenario consisting of an F4 tornado moving through the northeastern portion of Grundy County.

A historical tornado track from November 12, 1965 was selected and downloaded from the National Oceanic and Atmospheric Administration website. The track starts near Saratoga Rd approximately 1.2 miles northwest of the City of Morris and travels northeast passing through the northern outskirts of Morris and Channahon and the center of Minooka before leaving Grundy County after 12 miles. The original tornado was an F2 event that caused 90 injuries and 2 fatalities. Since the area has gone through significant development since 1965, a threat for greater damage and loss of life exists if the same area was hit today.

Description of Analysis

As stated above, the scenario for this analysis is a Fujita Scale F4 tornado moving through northeastern Grundy County. See Figure 41 below for a map of this scenario. Hazus software was not used for this analysis, however, similar GIS-based methodology was used to estimate potential damages based on current structure values and a historic tornado track.

This analysis provides an estimate of dollar losses for structures located in the tornado's path and does not provide an estimate for injuries/loss of life, shelter needs, or damage to infrastructure. In order to estimate the potential damages, GIS was used to create four different buffer zones around the tornado track with each representing a different damage percentage based on how close they are to the center of the track. These percentages can be seen in Figure 42. below. This methodology of creating buffers was based on the publication titled "A Study of the GIS Tools Available During Tornado Events and Their Effectiveness for Meteorologists, First Responders and Emergency Managers" presented at the American Meteorological Society Cloud Physics Conference in 2006 (Hubbard, MacLaughlin, 2006).

Once these zones were created they were overlaid on top of points derived from the Grundy County Assessor's database. Each point represents an existing structure and is attributed with an estimate of the total replacement value of the structure as calculated from its assessed value. The number of structures that fell in each tornado damage zone is listed in Figure 44. Depending on which damage zone each of these points were located in, the total replacement value of the structure was multiplied by the percentage listed in Figure 42 to give an estimate of the dollar losses that may result in such an event. These loss estimates are listed in **Figure 46.**

Tornado Damage Zones

Zone	Range (Feet)	Damage Percentage
1	0-150	100%
2	151-300	80%
3	301-600	50%
4	601-900	10%

Figure 42

F4 Tornado Event

Number of Structures in Each Tornado Damage Zone

Occupancy	Zone 1	Zone 2	Zone 3	Zone 4
Residential	44	46	123	135
Commercial	6	6	8	5
Industrial	0	2	1	2
Agriculture	0	1	3	4
Education	0	1	1	0
Total	**50**	**56**	**136**	**146**

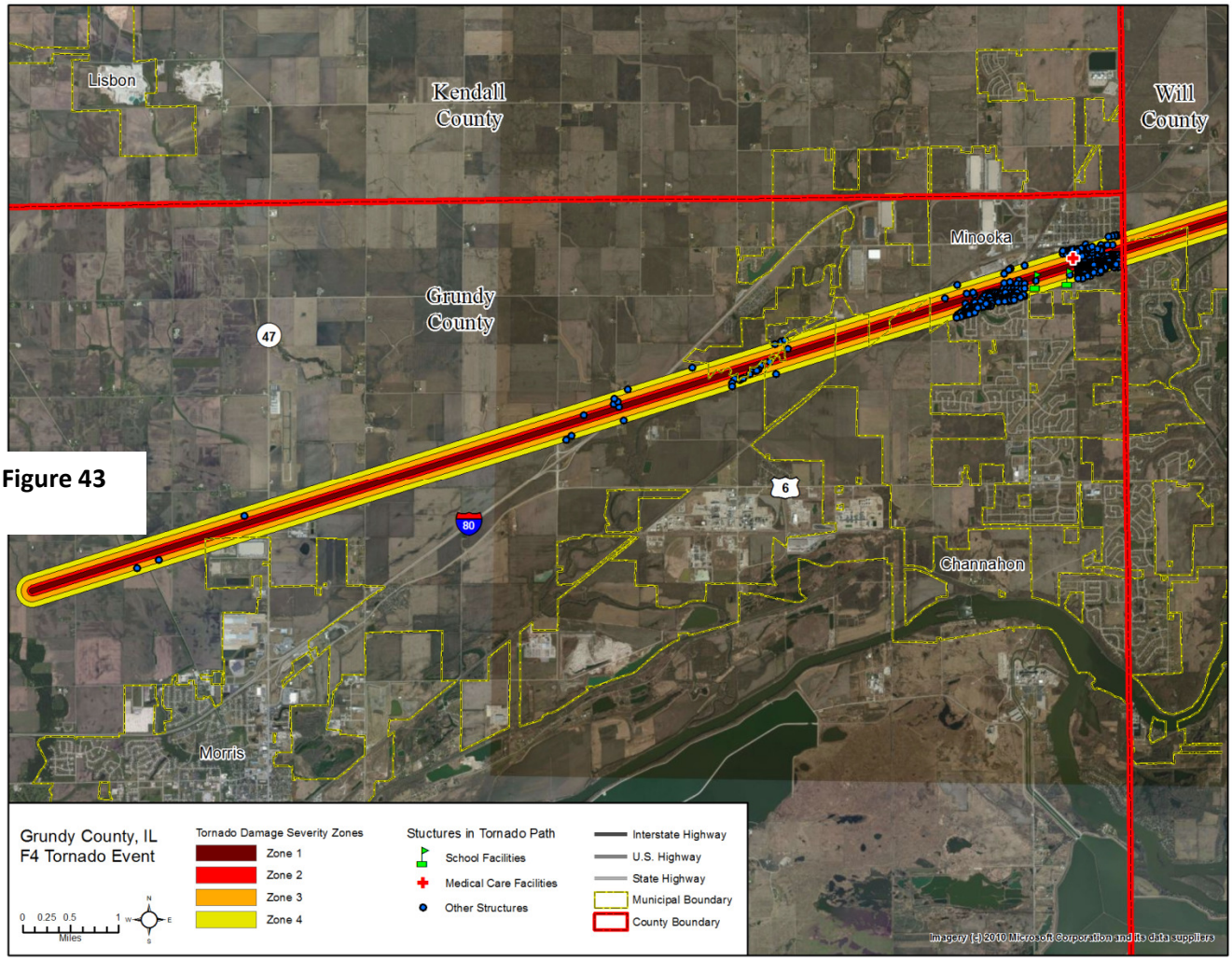


Figure 43

Figure 44

A total of 388 structures were damaged in this scenario. Three of these structures were essential facilities, which are listed in **Figure 45** below.

Essential Facilities Located in Tornado Path

Essential Facilities	City
Minooka Healthcare Center	Minooka
Minooka Jr High School	Minooka
Minooka Community High School	Minooka

Figure 45

Damage to or loss of these essential facilities can result in a great negative impact on the community during a disaster. The loss of a healthcare center can reduce the capacity to treat those injured during an event. The loss of schools can have impacts such as reduced options for temporary shelter as schools are often used in this capacity and can also increase the amount of time it takes to restore a level of normalcy to the community.

Economic Losses

The total loss estimate for this event is $93,898,805. As detailed in Figure 46 below, a significant amount of the total value consists of the two school facilities that fell within Zones 2 and 3. Usually residential losses are the largest contributor to the total replacement value loss estimates due to the much larger number of residential units damaged then other occupancy types. In this case, even though there are far more residential units damaged or destroyed, the two educational facilities are of such a high dollar value that they account for 43% of the total loss estimate. Since schools are not taxed and thus have no tax assessed value, the total replacement costs for Minooka Jr High and Minooka Community High School were taken from the Hazus essential facilities database.

Total Loss Estimates by Occupancy

Occupancy	Zone 1	Zone 2	Zone 3	Zone 4
Residential	$10,535,265	$9,019,476	$15,061,747	$3,234,460
Commercial	$3,398,700	$2,625,984	$2,435,760	$359,760
Industrial	$0	$1,683,420	$439,575	$4,449,232
Agriculture	$0	$178,176	$45,120	$61,224
Education	$0	$16,053,044	$24,317,860	$0
Total	**$13,933,965**	**$29,560,100**	**$42,300,062**	**$8,104,676**

Total Losses	**$93,898,803**

Figure 46

Bibliography:

Hubbard, S.A. and MacLaughlin, K. *A Study of the GIS Tools Available During Tornado Events and Their Effectiveness for Meteorologists, First Responders and Emergency Managers.* Conference publication, American Meteorological Society Cloud Physics Conference. 2006.

Illinois State Geological Survey. 1995. *Earthquake Occurrence in Illinois.* Illinois State Geological Survey, Champaign, IL. http://www.isgs.illinois.edu/research/earthquake-hazards/pdf-files/qk-fct-occur.pdf, accessed 25 June, 2010.

State of Illinois. Office of the Governor. 2007. *Illinois Natural Hazard Mitigation Plan.* Illinois Emergency Management Agency, Springfield, IL. http://www.state.il.us/iema/planning/MitigationPlanning.asp, accessed 08 April, 2010.

Natural Hazards Probability and Vulnerability

Grundy County, Illinois is situated approximately 70 miles to the southwest of Chicago. The migration to the suburbs and beyond, while stalled during the recent recession, has made Grundy County one of the fastest growing counties in Illinois. This rapid growth has also increased the counties vulnerability to natural hazards. The county, like most of Illinois, faces risks for multiple natural hazards, including floods, tornados, severe storms, severe winter storms, drought, earthquake, and extreme temperature. While these weather and related phenomenon are unpredictable in the long term, historical data can be used to determine annual probability of each event. The annual probability of flooding is included in the HAZUS – Analysis, while the remaining hazards are assessed for probability in the chart below. The methodology for determining the probability is a simple equation of the sum of the number of events divided by the number of years data has been collected.

Grundy County Natural Hazard Probability

Hazard	Extreme Temperature	Severe Storm	Drought	Earthquake	Winter Storm/Ice	Tornados
Number of Events*	10	40	49	0	21	7
Years of Data	16	56	10	55	55	61
Annual Probability	62.5%	71.4%	100%+	0%+	38.2%	8.7%

Figure 47 *Source: National Climate Data Center

Please note that the data included in the Figure above is through July of 2012. Record heat and drought that affected Grundy County during the late summer of 2012 is not reflected in this Figure.

As can be seen from the Figure, most of the natural hazards that affect Grundy County have occurred with some regularity over the recent past, with the exception of earthquakes. While not on a known major fault line, there does remain a low (but possible) risk for earthquakes in the county. Drought, on the other extreme, seems to be inevitable in Grundy County. The risk to life and property, however, is vastly different. Mitigation efforts to alleviate most risks to life and property are relatively mundane, while the potential for damage to life and property from drought is relatively small. Conversely, mitigation projects for earthquake protection are difficult and costly, while the potential for loss to life and property is extremely high. Balancing these factors would indicate that while preparedness for these events is justified, costly mitigation measures may not be justified.

Potential Loss Estimates

HAZUS software was utilized to assess potential damage estimates for flood, earthquake, and tornado events impacting Grundy County (see HAZUS Analysis, page 40-55). These are the natural hazards that generally cause the greatest damage to property. While other hazards certainly have the potential to paralyze a

community, especially severe winter storms, they rarely cause the extreme property loss of floods, earthquakes and tornados.

In the past twelve years, only one winter storm out of 21 in Grundy County met the $100,000 property damage loss threshold. Unfortunately, out of those same 21 winter storm events, six deaths were associated with those hazards, most likely related to poor road conditions, with five of the six deaths occurring during the January 15, 1997 winter storm event.

Economic losses from the ancillary problems related to severe weather events are incredibly difficult to calculate. Such problems as long term power outages, closed roads, and disruption of water and sewer services can be devastating to both residential and business concerns. Both households and businesses should be encouraged to take measures to reduce the risk from these types of disruptions.

Grundy County Mitigation Strategy

At the August 30, 2012 (Meeting #3) Steering Committee, the group reviewed the input and notes from the focus groups of targeted industry sectors that were held on August 8 and 9, as well as sample goals from other mitigation plans, both in Illinois and across the nation. After a great deal of discussion, as the group developed the following five goals, as well as the operational philosophy below. At the September 20 meeting (Meeting 4) the group formally adopted these goals for the Grundy County Hazard Mitigation Plan. Documentation of this process can be seen in the meeting minutes in the appendix.

Operational Philosophy: The Grundy County Natural Hazard Mitigation Steering Committee recognizes that while their mitigation goals specify their specific planning process, Grundy County is part of a much larger region, and as such their goals will have impacts on more than just Grundy County Citizens. With two major interstates (I-80 and I-55) running through the county, and the county's geographic location just outside one of the largest metropolitan areas in the nation, the steering committee recognizes their responsibility to a larger population, and will develop projects accordingly.

Goal 1: Protect the lives, property, and environment of Grundy County from natural disasters.

Goal 2: Protect the infrastructure within the county from damage as a result of natural disasters.

Goal 3: Educate the public on risks associated with natural disasters, and methodology to protect themselves.

Goal 4: Enhance coordination and communication between all levels of response and recovery agencies.

Goal 5: Incorporate natural hazards mitigation into community plans which will guide future development.

Mitigation Actions – Priorities and Implementation

Floodplain Management, participation in NFIP, and enforcement of the Floodplain Ordinance are expected of all participating Jurisdictions as a top priority for mitigating flood events. In Grundy County, this currently included the county, Braceville, Coal City, Diamond, Dwight, Mazon, Minooka, Morris, Seneca, South Wilmington, and Verona. Continued Participation in NFIP is listed as the first Mitigation action on the project grid that follows on the next few pages. Floodplain management is the cornerstone of participation in the National Flood Insurance Program (NFIP). Communities which participate in the NFIP are expected to adopt and enforce floodplain management regulations. These regulations apply to all types of floodplain development activities. The regulations ensure that any proposed floodplain development activities will not cause an increase in future flood damages. New and replacement structures are required to be elevated at or above the base flood elevation. In Illinois, most communities require structures to be protected one foot above the base flood elevation. Grundy County and it's jurisdictions have adopted the State of Illinois Model Floodplain Ordinance. That ordinance goes above-and-beyond NFIP minimum standards. In addition, the State of Illinois' floodway regulations are much more restrictive than NFIP minimums. By adopting the State of Illinois Model Floodplain Ordinance, the county not only complies with all NFIP regulations but exceeds them.

The lists of project samples were presented to the Steering Committee. It was suggested to the community representatives that the list be used as a basis for discussion with community leaders on projects that would be appropriate for their village or city. The project ideas came from public comment, focus groups, and FEMA best practices. Of course, communities were not limited to the projects on the list. Representatives were encouraged to be creative, and include project ideas that may be unique.

The projects were prioritized within the county by using the following method. It is important to recognize that the implementation of all actions is desirable regardless of prioritized order. Actions assigned to Priority A have a permanent or more far-reaching affect than actions under Priority B, although both address the most significant natural hazards in the county. Priority C actions all address the less significant natural hazards. Priority J actions are ready for implementation within the next year and can be accomplished within existing budgets. All actions will aid in the mitigation effort and should be implemented as opportunities arise.

Project Prioritization Method

Priority A projects permanently eliminate property damages and/or eliminate or reduce injuries and deaths in a specific area OR have a high probability to systematically reduce property damages, injuries and deaths across a wide area. Priority A projects address the most significant natural hazards – extreme heat, flood, severe storm, tornado, and winter storm.

Priority B projects reduce property damages in a specific area OR have the potential to reduce property damages, injuries and deaths across a wide area OR educate the public on disaster preparedness and mitigation. Priority B projects address the most significant natural hazards – extreme heat, flood, severe storm, tornado, and winter storm.

Priority C projects eliminate or reduce property damages, injuries and deaths from the less significant natural hazards OR educate the public on disaster preparedness and mitigation related to the less significant natural hazards – dam failure, drought, earthquake and mine subsidence.

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

COST/BENEFIT ANALYSIS

A cost/benefit analysis will be needed for any of these projects to be implemented. A cost/benefit analysis will be performed at the time of project selection. The committee assigned preliminary cost/benefit assessments to each identified project, using general terms of ***high***, ***medium***, and ***low*** related to both the cost and benefit. A ***high*** rating on cost means it is unlikely the jurisdiction could accomplish the project without outside funding, while a ***high*** rating on benefit relates to how well the project would mitigate the situation. A ***low*** cost rating, conversely, means that is likely the jurisdiction can accomplish the project without outside funding.

TYPE OF PROJECT

Each project included on the grid was categorized by the type of project. Below is a key for the project types included on the grid.

Project Type

C=Construction Project

E=Education Project

P=Policy Project

COM= Communication

PR- Preparedness

R=Response

BO=Buyout

ds

Jurisdictional Project Grid

azard ype	Possible Funding	Project Description	Priority	Lead Implementer/Contact	Proposed Schedule	Benefit /Cost
ood	NA	Maintain compliance with NFIP requirements, where applicable.	J	All jurisdictions	immediate	H/L
ood	FEMA	Clean and Reshape the channel of the Mazon River in Southeast Grundy County	B	County	1-5 yrs	H/H
l Hazards	Local	Encourage Public and Businesses to purchase and monitor NOAA All Hazards Radio	J	EMA Director	Immediate	H/L
ood	Local/IDOT	Identify Roadways that often pose a hazard to motorists and mark with appropriate signage	B	Highway Dept	1-2 yrs	M/M
l Hazards	Local	Develop and Present public awareness campaigns for all natural hazards	J	EMA Director	1-2 yrs	M/M
l Hazards	Local/USDA	Establish a county wide public warning system for natural hazards using a variety of means, including IPAWs, to get information to the public	A	EMA/County Board	3-5 yrs	H/M
l Hazards	Local	Convert the multijurisdictional hazard mitigation steering committee into an advisory committee to keep the plan up-to-date and identify additional projects	J	EMA Director	Immediate	M/L
ll Hazards	HUD/ USDA	Develop and complete a water backups system by connecting to Godley Water Supply	B	Braceville Village Board	3-4 years	M/H
evere orms	FEMA/ USDA	Install lightening protection on Well Housing	B	Braceville Village Board	1-2 Years	H/L
ood	Local	Schedule regular catch basin clean out and maintenance	B	Village Maintenance	Immediate	M/M
ood	Local	Schedule regular ditch inspection/clean out/maintenance	B	Village Maintenance	Immediate	M/H
rnado	FEMA	Construct underground tornado shelter with generator for trailer court residents and others with no basements within their neighborhoods.	A	Village Bd	3-5 yrs	H/H
ood	Local/USDA	Install backup generators for lift stations	B	Village Bd	2-5 yrs	H/M

2	Diamond	C	Earthquake	FEMA/Local	Retrofit WTP and WWTP to better withstand Earthquakes	B	Village Bd	4-5 years	H/L
5	Diamond	P	Flood	Local	Strict enforcement of Village adopted Will County Storm Water Regulations.	J	Village Bd	Immediate	H/L
3	Diamond	E	All Hazards	Local	Put Educational Information on Village Website	J	Village Bd	1 yr	M/L
1	Diamond	BO	Flood	FEMA	Buy out properties in the floodplain for green space adjacent to the village.	A	Village Bd	3-5 yrs	H/H
1	Diamond	P	All Hazards	Local	Maintain membership in IPWMAN for public works mutual aid.	J	Village Bd	Immediate	M/L
1	Diamond	C	Flood	FEMA/Local	Continue participating with Grundy County on Hydrological Study Grant they applied for covering the region and multi-jurisdictions.	B	EMA/Village Bd	Immediate	M/M
1	Dwight	P	All	Local	Participate in county wide Mutual Aid agreements	j	Village Board	Immediate	H/L
2	Dwight	C	Flood	Local/DNR	Clean Channel of Gooseberry Creek	B	Village Board	1-2 yrs	H/M
1	Mazon	C	All Hazards	FEMA	To provide a storm shelter in neighborhoods where risks appear greatest, i.e. no basements, poor construction, vulnerable populations.	A	Village Bd	3-5 yrs	H/H
1 ,2	Mazon	C	Flood	Local	Erect levee to stop flooding of homes on the south side of Village as well as diverting water back to the creek.	A	Village Public Works	3-5 yrs	H/H
1	Mazon	PR	All Hazards	Local/USDA	Enhance the early warning system, especially to the two elementary schools, and other at risk locations	B	Fire Dept	1-3 yrs	H/M
1	Minooka	C	All Hazards	FEMA	In-Ground Shelter/heating and cooling center at the Village Hall and EOC	A	Village Bd	3-5 yrs	H/H
4	Minooka	COM	All Hazards	Local	Multi-band Radios for inter-operability	B	Emergency Services	3-5 yrs	M/M
1	Minooka	PR	Tornado	Local/FEMA	Village operated Siren System with PA Capabilities	B	Emergency Services	2-5 yrs	M/M
1	Minooka	PR	All Hazards	Local	Provide Shelter Kits/services, cots, blankets, pillows	B	Social Services Network	1-2 yrs	M/L
4	Minooka	P	Winter Storms and Floods	Local	Emergency Patrol and Rescue having access to snow mobiles, ATV's, and boats	J	Emergency Services	1 yr	H/L
1	Morris	C	Flood	Local/USDA	West Side Sewer Overflow project to reduce basement flooding during heavy rainfall	A	City Public Works	3-5 yrs	H/H

2	Morris	C	All Hazards	Local/USDA	Require Backup generators for essential city services, including Fire dept, City Water Wells, and city sewer treatment, etc.	A	City Council	3-5 yrs	H/H
2	Morris	P	All Hazards	Local	Install a web portal system that would allow city employees to work from home or be notified of emergency actions that needed to be addresses during natural disasters or emergency events	B	City Clerk/IT	2-4 yrs	M/M
4	Morris	PR	All Hazards	Local	Improve Capabilities to prepare for and respond to all disasters	J	Emergency Services	immediate	L/L
1	Morris	C	All Hazards	Local/USDA	Purchase mobile generator's for backup power at lift stations and water supplies during power outages	A	Public Works	2-5 yrs	H/M
4	Morris	P	All Hazards	Local	Participate in County-Wide mutual aid agreements and multi-jurisdictional hazard mitigation/long term recovery committee	J	City Council	Immediate	H/L
1	Morris	E	All Hazards	Local	Encourage all City of Morris Residents and businesses to purchase and use NOAA all Hazard Radios	B	EMA	1-2 yrs	H/L
1	Morris	R	All Hazards	Local/DOJ	Purchase thermal imaging camera and emergency lighting for police, fire and public works use during emergency situations	A	Police Dept	1-3 yrs	M/M
2	Morris	PR	All Hazards	Local	Prune and remove trees as needed in public right of ways	J	Public Works	1-2 yrs	H/L
1	Seneca	C	All Hazards	FEMA	Develop and maintain a multi use shelter for severe weather, heating and cooling.	A	Village Bd	3-5 yrs	H/H
4	Seneca	P	All Hazards	Local	Apply for and maintain membership in IPWMAN for public works mutual aid	J	Village Bd	Immediate	H/L
2	Seneca	C	Flood	Local/USDA	Install and maintain a back-up generator for lift station	B	Water Dept	1-2 yrs	H/M
3	Seneca	E	All Hazards	Local	Develop a public awareness campaign for homes and business to purchase NOAA Radios at a discount	B	EMA	1-2 yrs	H/L
3	Seneca	E	All Hazards	Local	Provide Educational information on the Village website and Facebook Page	B	IT/Village Staff	1 year	H/L
2	South Wilmington	C	Flood	FEMA	Clean and Reshape the channel of the Mazon River in South Wilmington	B	County and Village	1-5 yrs	H/H

4	South Wilmington	P	All Hazards	Local	Participate in County-Wide mutual aid agreements and multi-jurisdictional hazard mitigation/long term recovery committee	J	Village Board	Immediate	h/l

Figure 48

PLAN MAINTENANCE, EVALUATION, AND MONITORING

Maintenance of the plan is assigned primarily to the Emergency Management Director. Each Steering Committee Member will assist with the review and revision process on an annual basis, according to the Disaster Mitigation Act of 2000. The annual meeting will take place on the third Thursday in January each year. All participating Steering Committee Communities will be invited to the meeting which will be Public Noticed a minimum of 48 hours prior to the start of the meeting. The public will be invited to participate in the review process.

Minutes from each annual meeting will be maintained by the Grundy County Emergency Management Director, for the purpose of review upon plan updates. The plan will be updated every five years, in accordance with Federal Emergency Management Agency (FEMA) rules.

The standard method for reviewing, updating and revising of this plan will be performed under the following conditions:

- Conduct an annual review of the Grundy County Multi-Jurisdictional Hazard Mitigation Plan.
- Significant plan implementation issues are identified
- There are changes to the Mitigation Actions and/or Projects
- Significant revision is made to the Grundy County Threat, Hazard Identification & Risk Analysis
- A disaster provides an opportunity to evaluate disaster effects and if mitigation projects are still valid
- There is a political event that would require a review
- There are enough changes to the plan to require reprinting, once updated, the plan will be submitted to all proper organizations for their review.

While implementation of the plan is the responsibility of each jurisdiction, the Grundy County Emergency Management will maintain contact with each jurisdiction, and serve as a resource to those communities. Participating jurisdictions will utilize the approved plan as reference and guidelines when engaging in other planning processes, including but not limited to comprehensive planning, economic development planning, and capital improvement plans. Additionally, record will be kept of mitigation projects completed.

Appendix

Appendix 1: Listing of Essential Facilities and Water Facilities

Essential Facilities

Emergency Operations

Name	City
Braceville Emergency Services	Braceville
Minooka Emergency Operations Center	Minooka
Emergency Planning and Management Office	Morris
Morris Municipal Building	Morris
Verona Emergency Operations Center	Verona

Fire Protection

Name	City
Braceville Fire Protection District	Braceville
Minooka Fire Protection District	Channahon
Coal City Fire Protection District	Coal City
Gardner Volunteer Fire Department	Gardner
Mazon Fire Protection District	Mazon
Minooka Fire Protection District	Minooka
Lyondell Chemical Company	Morris
Morris Fire Protection & Ambulance District	Morris
South Wilmington Volunteer Fire Dept.	South Wilmington
Verona-Kinsman Fire Protection District	Verona

Medical

Name	City
Morris Hospital Ridge Road Facilities	Channahon
Minnoka Health Care Center	Minooka

Immediate Care of Morris Hospital	Morris
Morris Healthcare Rehabilitation Center	Morris
Morris Hospital And Healthcare Centers	Morris
Renaissance Home Health Service Inc.	Morris
Walnut Grove Retirement Community	Morris

Police

Name	City
Coal City Police Dept	Coal City
Gardner Police Dept	Gardner
Mazon Police Dept	Mazon
Minooka Police Dept	Minooka
Grundy County Sheriff's Dept	Morris
Morris Municipal Building Police Station	Morris

Schools

Name	City
Braceville Elem School	Braceville
Coal City Elem School	Coal City
Coal City High School	Coal City
Coal City Intermediate School	Coal City
Coal City Middle School	Coal City
Step by Step Child Care Center, Inc.	Diamond
Gardner Elem School	Gardner
Gardner-South Wilmington Twp H S	Gardner
Mazon-Verona-Kinsman Elem School	Mazon
Mazon-Verona-Kinsman Middle Sch	Mazon
Aux Sable Elementary School	Minooka

Minooka Central Community High School	Minooka
Minooka South High School	Minooka
Minooka Elem School	
Minooka Intermediate School	Minooka
Minooka Jr High School	Minooka
Minooka Primary Center	Minooka
Ashley Road Baptist Academy	Morris
Grundy Area Vocational Center	Morris
Morris Christian School	Morris
Morris Community High School	Morris
Nettle Creek Elem School	Morris
Prairieland Kids Daycare	Morris
Premier Academy Morris	Morris
Saratoga Elem School	Morris
Shabbona Middle School	Morris
Step by Step Child Care Center, Inc.	Morris
White Oak Elementary	Morris
South Wilmington Grade School	South Wilmington
Grundy County Special Ed Coop.	Morris
Royal Child Care and Learning Center	Minooka
Two Rivers Headstart	Morris
Minooka United Methodist Church Pre-school	Minooka
Methodist Pre-school	Morris
Early Childhood Center	Coal City
Kids Corner	Coal City
Rainbow Pre-school	Morris

Water Facilities

Potable Water Facilities

Name	City
Braceville	Braceville
Carbon Hill	Carbon Hill
Carbon Hill	Carbon Hill
Coal City	Coal City
Coal City	Coal City
Coal City	Coal City
Diamond Estates Lift Station	Diamond
Diamond Water Tower #1	Diamond
Diamond Well #1, #2, and #4	Diamond
Diamond Well #3 and Water Treatment Plant (Will County)	Diamond
McGinty Lift Station	Diamond
Gardner	Gardner
Gardner	Gardner
Gardner	Gardner
Gardner	Gardner
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Bookwalter Woods Mhp	Grundy County Unincorporated Areas
Coal City	Grundy County Unincorporated Areas
Hawthorn Estates Subd	Grundy County Unincorporated Areas

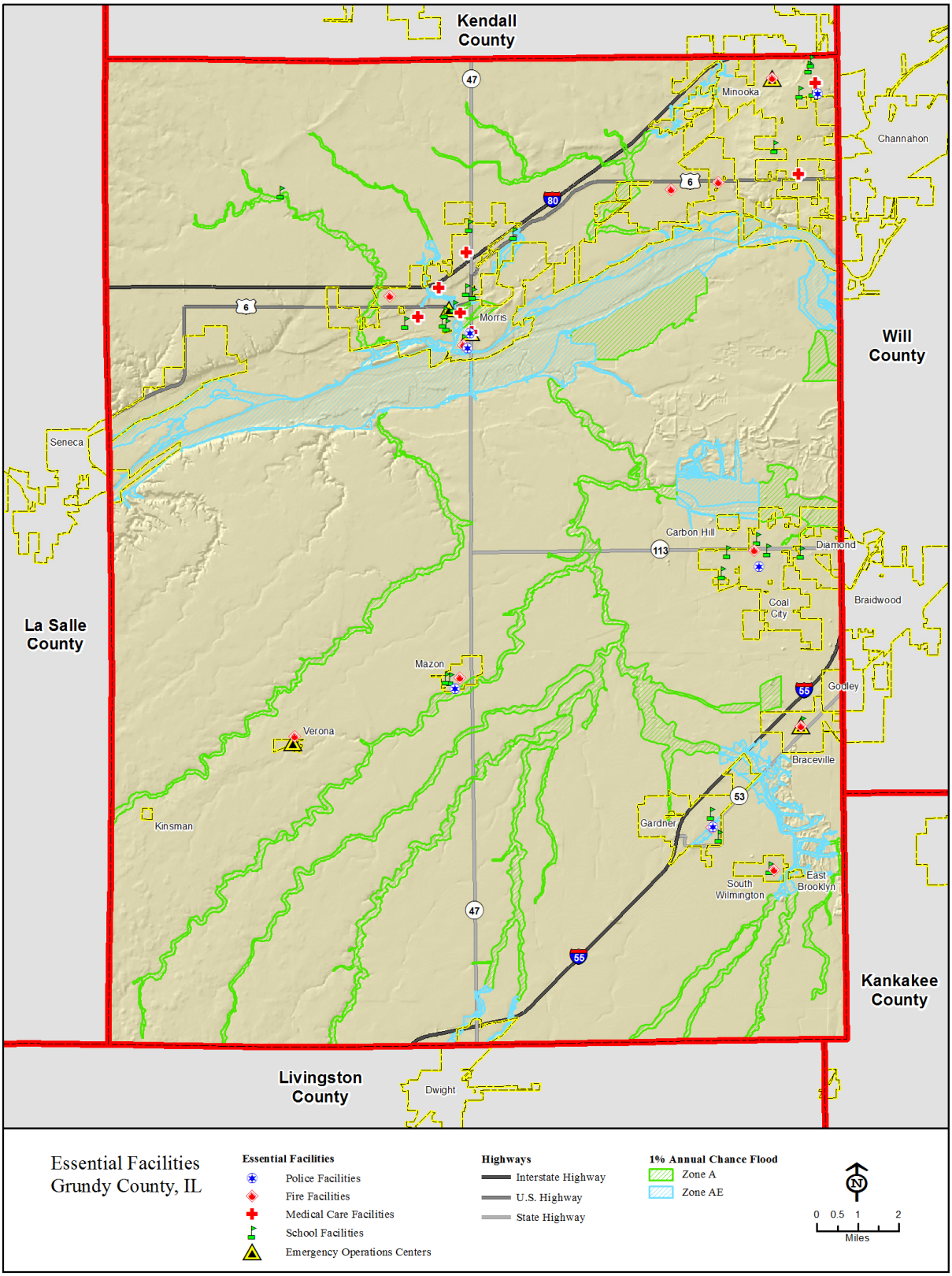
Hawthorn Estates Subd	Grundy County Unincorporated Areas
Heatherfield Subd	Grundy County Unincorporated Areas
Illinois American Nettle Creek Div	Grundy County Unincorporated Areas
Illinois American Ridgecrest Div	Grundy County Unincorporated Areas
Kinsman	Grundy County Unincorporated Areas
Lisbon North Inc	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Mazon	Grundy County Unincorporated Areas
Prairie Oaks Estates Homeowners Assn	Grundy County Unincorporated Areas
Ridgecrest North Subd	Grundy County Unincorporated Areas
Ridgecrest North Subd	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Shady Oaks Mhp	Grundy County Unincorporated Areas
Minooka	Minooka

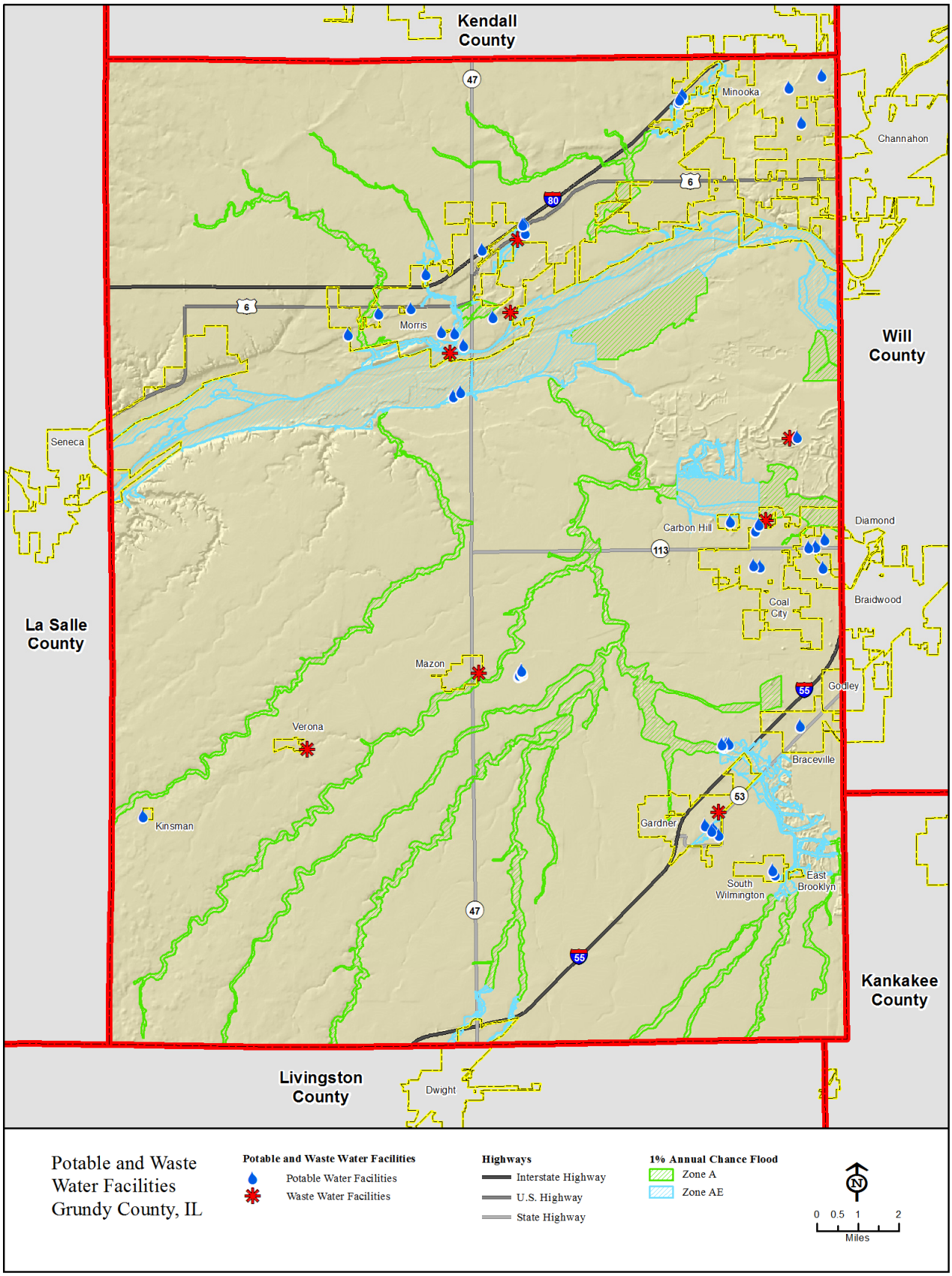
Minooka	Minooka
Minooka Public Works	Minooka
Well House #9	Minooka
City Of Morris Eastside Water Tower	Morris
City Of Morris Northside Water Tower	Morris
City Of Morris Westside Water Tower	Morris
Morris	Morris
Morris	Morris
Morris	Morris
South Wilmington	South Wilmington
South Wilmington	South Wilmington
South Wilmington	South Wilmington

Waste Water Facilities

Name	**City**
Coal City Sewage Treatment Plant	Coal City
Prairie Oak Estates Sewage Treatment Plant	Coal City
Gardner Sewage Treatment Plant	Gardner
Mazon Sewage Treatment Plant	Mazon
Citizens Util Co-Ridgecrest	Morris
City Of Morris Sewage Treatment Plant	Morris
Morris Waste Water Treatment Facility	Morris
	Verona
Verona Sewer Treatment Facility	Diamond
Diamond Waste Water Treatment Plant (Will Co)	

Appendix 2: Maps of Facilities


Kendall County
Will County
La Salle County
Kankakee County
Livingston County
Minooka
Channahon
Morris
Seneca
Carbon Hill
Diamond
Braidwood
Coal City
Mazon
Verona
Kinsman
Gardner
Braceville
Godley
South Wilmington
East Brooklyn
Dwight
47
80
6
113
55
53
Essential Facilities
Grundy County, IL
Essential Facilities
Police Facilities
Fire Facilities
Medical Care Facilities
School Facilities
Emergency Operations Centers
Highways
Interstate Highway
U.S. Highway
State Highway
1% Annual Chance Flood
Zone A
Zone AE
N
0 0.5 1 2
Miles



Community Survey

Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan

Citizen Survey

Tornados, severe storms, floods, and other natural hazards in Illinois have caused death, injuries, and millions of dollars in property damage in the last 60 years.

Mitigation of natural hazards means reducing the damage and hardship that can result from them.

Your input is needed in the development of a plan to lessen the impact of natural hazard events on our communities. The information provided from this survey will assist the Steering Committee working on this plan to determine activities that should be implemented to protect lives and property in the event of a natural hazard event. Your experiences and ideas are an important part of this effort.

Please submit this completed survey by (date) to: University of Illinois Extension, 180, South Soangetaha, Suite 108, Galesburg, IL 61401 If you prefer, you can also complete this survey online by going to https://www.surveymonkey.com/s/7XV5LP6

---

1. What is your zip code? _____
2. Do you live in a community with others or in the country? ___ town ___ country

PERSONAL EXPERIENCE / PREPAREDNESS

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

   ☐1 Yes (go to question #4) ☐2 No (go to question #5)

4. Which of the following types of natural hazards events have you or someone in your household experienced? (please check all that apply)

   ☐1 Severe weather damage in excess of $500 ☐2 Floods ☐3 Winter storms
   ☐4 Extreme heat ☐5 Tornadoes ☐6 Drought ☐7 Earthquakes
   ☐8 Other (please specify): _____

5. On a scale of 1 to 5, how prepared do you feel you and your household are for the probable impacts of natural hazard events likely to occur within Grundy County?

1 Not at all prepared	*2 Somewhat prepared*	*3 Adequately prepared*	*4 Well prepared*	*5 Very well prepared*
☐1	☐2	☐3	☐4	☐5

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

Natural Hazard	*Not concerned*	*Somewhat concerned*	*Concerned*	*Very concerned*	*Extremely concerned*
a. Severe storm (wind, lightning)	☐1	☐2	☐3	☐4	☐5
b. Flood	☐1	☐2	☐3	☐4	☐5
c. Winter storms	☐1	☐2	☐3	☐4	☐5
d. Extreme heat	☐1	☐2	☐3	☐4	☐5
e. Tornados	☐1	☐2	☐3	☐4	☐5
f. Drought	☐1	☐2	☐3	☐4	☐5
g. Earthquakes	☐1	☐2	☐3	☐4	☐5
h. Other (please specify):	☐1	☐2	☐3	☐4	☐5

7. What is 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)

☐1 newspaper stories ☐2 newspaper ads ☐3 television news
☐4 television ads ☐5 radio news ☐6 radio ads ☐7 schools
☐8 books ☐9 fact sheet/brochure ☐10 magazine ☐11 mail
☐12 fire department ☐13 internet ☐14 government
☐15 Other (please specify): _____

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

☐1 Yes ☐2 No

9. To the best of your knowledge, is your property located in close proximity (less than 1 mile) to an earthquake fault line?

☐1 Yes ☐2 No

10. Do you have flood insurance?

☐1 Yes ☐2 No

11. Do you have earthquake insurance?

☐1 Yes ☐2 No

12. How vulnerable is your infrastructure (streets, water, sewer, electricity, etc) to:

Natural Hazard	*Minimally Vulnerable*	*Moderately Vulnerable*	*Severely Vulnerable*	*Don't Know*
a. Severe storm (wind, lightning)	☐1	☐2	☐3	☐99
b. Flood	☐1	☐2	☐3	☐99
c. Winter storms	☐1	☐2	☐3	☐99
d. Extreme heat	☐1	☐2	☐3	☐99

Natural Hazard	*Minimally Vulnerable*	*Moderately Vulnerable*	*Severely Vulnerable*	*Don't Know*
e. Tornados	☐1	☐2	☐3	☐99
f. Drought	☐1	☐2	☐3	☐99
g. Earthquakes	☐1	☐2	☐3	☐99
h. Other (please specify):	☐1	☐2	☐3	☐99

13. How vulnerable to damage are the critical facilities (police stations, fire stations, emergency operation centers, etc.) within your community to:

Natural Hazard	*Minimally Vulnerable*	*Moderately Vulnerable*	*Severely Vulnerable*	*Don't Know*
a. Severe storm (wind, lightning)	☐1	☐2	☐3	☐99
b. Flood	☐1	☐2	☐3	☐99
c. Winter storms	☐1	☐2	☐3	☐99
d. Extreme heat	☐1	☐2	☐3	☐99
e. Tornados	☐1	☐2	☐3	☐99
f. Drought	☐1	☐2	☐3	☐99
g. Earthquakes	☐1	☐2	☐3	☐99
h. Other (please specify):	☐1	☐2	☐3	☐99

14. What actions do you think could be taken by individuals or the community to reduce damages and hardships caused by natural hazard events?

_____

_____

_____

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

☐1 Yes ☐2 No ☐3 Don't recall

16. Was the presence of a natural hazard risk zone (flood zone, fault zone, etc.) disclosed to you by a real estate agent, seller, or landlord before you purchased or moved into your home?

☐1 Yes ☐2 No ☐3 Don't recall

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

☐1 Yes ☐2 No

18. Would you be willing to spend money to modify or 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; improving home exteriors to withstand higher winds; and so on)?

☐1 Yes ☐2 No ☐3 Maybe

19. Which of the following incentives would help to encourage you to spend money to retrofit your home for the possible impacts of natural disasters? (please check all that apply)

☐1 low interest rate loan ☐2 insurance premium discount ☐3 mortgage discount

☐4 property tax break ☐5 grant funding (with cost share) ☐6 none

☐7 Other (please specify): _____

20. 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?

☐1 Yes ☐2 No

GENERAL INFORMATION

21. How old are you? _____

22. What is your gender?

☐1 Male ☐2 Female

23. How long have you lived in Grundy County?

☐1 Less than 1 year ☐2 1 – 4 years ☐3 5 – 9 years ☐4 10 – 19 years

☐5 More than 20 years

24. Do you have access to the Internet?

☐1 Yes ☐2 No

25. Do you own or rent your home?

☐1 Own ☐2 Rent

26. What type of structure do you live in?

☐1 single family home ☐2 duplex ☐3 apartment (3-4 units in structure)

☐4 apartment (5 or more units in structure) ☐5 condominium / townhouse

☐6 manufactured home ☐7 trailer

☐8 Other (please specify): _____

27. Please check all that apply regarding your experiences in Grundy County with these natural hazard events:

	Dam Failure	Drought	Earth-quake	Extreme heat	Flood	Thunder -storm	Winter storm	Tornado	Mine subsidence
Experienced in									

Grundy County									
Personal injury / health concern									
Wind damage to home									
Wind damage to place of work									
Wind damage to outbuilding									
Water damage to home									
Water damage to place of work									
Water damage to outbuilding									
Lightning damage to building									
Lightning damage to electrical power									
Other damage to home									
Other damage to place of work									
Other damage to outbuildings									
Power outage									
Sewer backup									
Impassable road									
Traffic accident									
Crop damage									
Other:									

Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan

1. In what ZIP code is your home located? (enter 5-digit ZIP code; for example, 00544 or 94305)	
Answer Options	**Response Count**
	107

answered question	**107**
skipped question	**1**

Number	Response Text	Categories

2. Do you live in a community with others or in the country?

Answer Options	Response %	Response Count
Town	84.1%	90
Country	15.9%	17
	answered question	**107**
	skipped question	**1**

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

Answer Options	Response %	Response Count
Yes (go to question #4)	86.8%	92
No (go to question #5)	13.2%	14
	answered question	**106**
	skipped question	**2**

4. Which of the following types of natural hazard events have you or someone in your household experienced? (please check all that apply)

Answer Options	Response %	Response Count
Severe weather damage in excess of $500	41.2%	40
Floods	33.0%	32
Winter storms	77.3%	75
Extreme heat	63.9%	62
Tornadoes	6.2%	6
Drought	56.7%	55
Earthquakes	2.1%	2
Other (please specify)		1
	answered question	**97**
	skipped question	**11**

Number	Other (please specify)	Categories

5. On a scale of 1 to 5, how prepared do you feel you and your household are for the probable impacts of natural hazard events likely to occur within Grundy County?

Answer Options	Response %	Response Count
1 Not at all prepared	6.0%	5
2 Somewhat prepared	39.8%	33
3 Adequately prepared	31.3%	26
4 Well prepared	19.3%	16
5 Very well prepared	3.6%	3
	answered question	**83**
	skipped question	**25**

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

Answer Options	Rating Average	Response Count
Severe storm (wind, lightning)	3.43	107
Flood	2.85	105
Winter storms	3.24	107
Extreme heat	2.92	106
Tornadoes	3.54	106
Drought	2.94	104
Earthquakes	2.03	102
Other (please specify)		2
	skipped question	**1**

Number	Other (please specify)	Categories
1	Nuclear Plant disaster	
2	Chemical and Nuclear due to location	

7. What is 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 %	Response Count
newspaper stories	50.5%	51
newspaper ads	10.9%	11
television news	52.5%	53
television ads	19.8%	20
radio news	54.5%	55
radio ads	23.8%	24
schools	23.8%	24
books	7.9%	8
fact sheet/brochure	45.5%	46
magazine	10.9%	11
mail	50.5%	51
fire department	32.7%	33
internet	68.3%	69
government	26.7%	27
Other (please specify)		5
	answered question	**101**
	skipped question	**7**

Number	Other (please specify)	Categories
1	cell phone	
2	txt message	
3	Public seminars.	
4	Word of mouth	
5	Work I am the Fire Chief	

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

Answer Options	Response %	Response Count
Yes	6.5%	7
No	93.5%	100
	answered question	**107**
	skipped question	**1**

9. To the best of your knowledge, is your property located in close proximity (less than 1 mile) to an earthquake fault line?

Answer Options	Response %	Response Count
Yes	3.7%	4
No	96.3%	103
	answered question	**107**
	skipped question	**1**

10. Do you have flood insurance?

Answer Options	Response %	Response Count
Yes	10.5%	11
No	89.5%	94
	answered question	**105**
	skipped question	**3**

11. Do you have earthquake insurance?

Answer Options	Response %	Response Count
Yes	9.4%	10
No	90.6%	96
	answered question	**106**
	skipped question	**2**

12. How vulnerable is your infrastructure (streets, water, sewer, electricity, etc) to:						
Answer Options	**Minimally Vulnerable**	**Moderately Vulnerable**	**Severely Vulnerable**	**Don't Know**	**Rating Average**	**Response Count**
Severe storm (wind, lightning)	19	45	29	13	2.34	106
Flood	28	48	14	16	2.17	106
Winter storms	17	48	29	12	2.34	106
Extreme heat	33	47	13	14	2.07	107
Tornadoes	8	38	47	14	2.63	107
Drought	34	43	14	16	2.11	107
Earthquakes	45	21	18	20	2.13	104
Other (please specify)						0
					answered question	**107**
					skipped question	**1**

13. How vulnerable to damage are the critical facilities (police stations, fire stations, emergency operation centers, etc.) within your community to:						
Answer Options	**Minimally Vulnerable**	**Moderately Vulnerable**	**Severely Vulnerable**	**Don't Know**	**Rating Average**	**Response Count**
Severe storm (wind, lightning)	22	49	19	17	2.29	107
Flood	47	32	9	19	2.00	107
Winter storms	18	57	14	18	2.30	107
Extreme heat	47	33	9	18	1.98	107
Tornadoes	17	45	27	18	2.43	107
Drought	48	33	6	19	1.96	106
Earthquakes	34	33	9	26	2.26	102
Other (please specify)						1
					answered question	**107**
					skipped question	**1**

Number	**Other (please specify)**	**Categories**
1	Police station only- old building very vulnerable	

14. What actions do you think could be taken by individuals or the community to reduce damages and hardships caused by natural hazard events?

1	Community storm shelter. Build levee to stop flood from flooding homes on south side.
2	Education of public severe weather warning improved sirens, NOAA weather radio
3	having a "bug out" bag ready if needed
4	preparedness plans, and sound government buildings
5	be aware of storm warnings and do whatever your instructed to do.
6	to be more informed about preparations
7	training & reinforce infrastructure
8	N/A
9	Improve the infrastructure.
10	Better notification and prevention measures
11	Fundraisers or everybody just coming together to help in whatever way they can.
12	evacuation locations
13	Construct a tornado shelter for residents living in the trailer court. Provide more training/information on how to reduce risks.
14	Preparedness at a personal level. Less reliance on emergency services during a disaster allows them to provide service to those who cannot help themselves.
15	be prepared
16	practice natural disaster drills
17	A community or citizen based, and government educated response team with minimal interaction to severe situations. Enough to free up first responders to handle more serious events.
18	Community alerts and information on what to do, in various natural hazard events
19	Be prepared
20	Advanced warning notices
21	Stay informed
22	Be ready and proactive
23	Prepare to take care of themselves for at least a week while govt agencies spend their limited time clearing roads and tending to larger emergencies and injured people.
24	We live on the outskirts of town and I feel more tornado sirens are needed in the area. The closest one to us is extremely hard to hear when they test it, so I don't feel that during a storm you would be able to hear it and our cable usually goes out as does the internet, etc.
25	Prepare supply package for at least 2-3 days. Safe meeting place for family in case of separation due to hazardous events.
26	It my understanding that the city's Public Works and gas pumps are usually the first to go (either flooded and inaccessible or no electricity). The new city hall/police department does not have a generator to run the entire building or the back up emergency operations center.
27	To be prepared
28	Community information seminars
29	Educate people on the limitations of help they can expect from the government.
30	Be prepared, have a plan A, B, or C if needed
31	The community; having good communications available. For the individuals; first and foremost, having and exercising common sense regarding the hazards associated with the different types of natural hazards.
32	Education and early notification
33	Warning notices issued when a potential storm threatens
34	Have evacuation sites for families in case of tornado's or blizzards in schools/churches with beds/blankets/restrooms.
35	Prepare
36	Self awareness of how to react if hazardous events do occur
37	better safety awareness
38	Be more prepared and know when to stay indoors when natural disasters are approaching, when necessary.
39	Warning Sirens and education.

40	BE MORE ACTIVE IN TRAINING DEMONSTRATIONS
41	People should not make unnecessary trips by auto during blizzards or when severe storms are occurring in the area.
42	early notification through the use of cell phones getting information automatically
43	We need back up generator power at sewer and water treatment plants and the outdoor warning sirens need to be expanded
44	get insurance against such things like floods, have a plan of action for such events.
45	Review home owners insurance to make sure of adequate coverage.

15. 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 %	Response Count
Yes	29.0%	31
No	60.7%	65
Don't recall	10.3%	11
	answered question	107
	skipped question	1

16. Was the presence of a natural hazard risk zone (flood zone, fault zone, etc.) disclosed to you by a real estate agent, seller, or landlord before you purchased or moved into your home?

Answer Options	Response %	Response Count
Yes	33.0%	35
No	51.9%	55
Don't recall	15.1%	16
	answered question	106
	skipped question	2

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

Answer Options	Response %	Response Count
Yes	79.4%	85
No	20.6%	22
	answered question	107
	skipped question	1

18. Would you be willing to spend money to modify or 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; improving home exteriors to withstand higher winds; and so on)?

Answer Options	Response %	Response Count
Yes	28.0%	30
No	19.6%	21
Maybe	52.3%	56
	answered question	107
	skipped question	1

19. Which of the following incentives would help to encourage you to spend money to retrofit your home for the possible impacts of natural disasters? (please check all that apply)

Answer Options	Response %	Response Count
low interest rate loan	47.2%	50
insurance premium discount	69.8%	74
mortgage discount	46.2%	49
property tax break	78.3%	83
grant funding (with cost share)	62.3%	66
none	7.5%	8
Other (please specify)		3
	answered question	**106**
	skipped question	**2**

Number	Other (please specify)	Categories
1	end of "economic downturn"	
2	I just installed a 20 kw Generator	
3	Guarantee to win the lottery - I have no money!	

20. 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 %	Response Count
Yes	84.6%	88
No	15.4%	16
	answered question	**104**
	skipped question	**4**

21. How old are you?

Number	Response Text	Categories
	47.66	Average Age

22. What is your gender?

Answer Options	Response %	Response Count
Female	44.3%	47
Male	55.7%	59
	answered question	**106**
	skipped question	**2**

23. How long have you lived in Grundy County?

Answer Options	Response %	Response Count

Less than 1 year	0.0%	0
1-4 years	6.7%	7
5-9 years	31.4%	33
10-19 years	9.5%	10
More than 20 years	52.4%	55
	answered question	**105**
	skipped question	**3**

24. Do you have access to the internet?

Answer Options	Response %	Response Count
Yes	95.2%	100
No	4.8%	5
	answered question	**105**
	skipped question	**3**

25. Do you own or rent your home?

Answer Options	Response %	Response Count
Own	93.3%	98
Rent	6.7%	7
	answered question	**105**
	skipped question	**3**

26. What type of structure do you live in?

Answer Options	Response %	Response Count
Single family home	86.8%	92
Duplex	9.4%	10
Apartment (3-4 units in structure)	1.9%	2
Apartment (5 or more units in structure)	0.0%	0
Condominium/townhouse	0.9%	1
Manufactured home	0.9%	1
Trailer	0.0%	0
Other (please specify)		0
	answered question	**106**
	skipped question	**2**

27. Please check all that apply regarding your experiences in Grundy County with these natural hazard events:									
Answer Options	**Dam Failure**	**Drought**	**Earth quake**	**Extreme heat**	**Flood**	**Thunder storm**	**Winter storm**	**Tornado**	**Mine sub.**
Experienced in Grundy County	2	59	11	70	51	81	78	20	5
Personal injury/health concern	0	2	2	14	5	7	10	6	1
Wind damage to home	0	0	0	1	1	51	13	3	0
Wind damage to place of work	0	0	0	1	3	18	8	3	0
Wind damage to outbuilding	1	0	1	0	1	24	6	4	0
Water damage to home	0	0	0	0	14	19	3	0	0
Water damage to place of work	0	0	0	0	9	11	3	0	0
Water damage to outbuilding	0	0	0	0	8	8	2	1	0
Lightning damage to building	0	0	0	0	1	28	2	2	0
Lightning damage to electrical power	0	0	0	1	3	39	7	2	0
Other damage to home	0	1	1	1	5	19	8	1	1
Other damage to place of work	0	0	0	2	5	17	7	0	0
Other damage to outbuildings	0	0	0	0	5	10	7	3	0
Power outage	1	4	0	20	11	72	45	9	0
Sewer backup	0	0	0	0	14	12	6	2	0
Impassable road	1	0	0	2	30	34	48	6	0
Traffic accident	0	0	1	1	11	21	26	3	0
Crop damage	0	26	0	16	15	15	2	4	0
Other (please specify)									

Focus Group Minutes

Name: Education _____ Date: 8/8/12

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	• student safety • sending home on buses • lightening damage to electronic damage • labor costs associated with early dismissal	• have held for strong winds • advanced warning from EMA has been invaluable via e-mail • ALL Hazards • busing ongoing • continued participation in drills
Floods	• property damage from Prolodgiso Ponds (sp) not being pumped • serve as an emergency shelter • school dismissal	• improve North End of Morris Drainage • continued communication with EMA and municipalities
Drought	• football fields hard can increase damage • cost for watering • rural schools on their own wells	
Extreme Heat	• athletics and hydration • early dismissal	• establish detail athletic practice schedule for heat
Earthquake	• natural gas heat	
Tornado	• student safety • property damage • red cross emergency shelter	• plans for emergency locations in the event one building is closed • checking on supplies on a regular schedule • sign out system for students in the event of disaster
Winter Storms (snow, ice)	• school dismissal	• good communication currently exists • cancelation policies can affect latchkey kids

Name: Education_____ Date: 8/8/12

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	• student safety • sending home on buses • lightening damage to electronic damage • labor costs associated with early dismissal	• have held for strong winds • advanced warning from EMA has been invaluable via e-mail • ALL Hazards • busing ongoing • continued participation in drills
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Drought	• football fields hard can increase damage • cost for watering • rural schools on their own wells	
Extreme Heat	• athletics and hydration • early dismissal	• establish detail athletic practice schedule for heat
Earthquake	• natural gas heat	
Tornado	• student safety • property damage • red cross emergency shelter	• plans for emergency locations in the event one building is closed • checking on supplies on a regular schedule • sign out system for students in the event of disaster
Winter Storms (snow, ice)	• school dismissal	• good communication currently exists • cancelation policies can affect latchkey kids

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Extreme Cold	• student safety can cause school dismissal	• wind chill determination may need to be standardized
Flash Floods		• transportation issues can be an issue • bus may not get thru

General Questions: Drought, water fields, three day a week watering schedules

Phone tree from EMA, make sure all e-mail list is current each year, special needs students may need special consideration; develop plan; list offsite;

E-mails do not necessarily convey confidence rating

Perhaps notification if road commissions notify when trucks are being pulled from the roads

Regional Superintendent can coordinate a call system to specialized list

Train teachers to drive buses on voluntary??? basis (Illinois Central)

Name: Agriculture Date: _____

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail, lightning)	08/04 – Wind Damage (101 mph) Route 52 Grain Elevator, Bins, Silos; buckled • Storms damage buildings including storage sheds, livestock barns • Lightning can cause crops to catch fire	• Having a schedule to review disaster plans, and make sure they are implemented. • A better warning system (sirens) for rural areas, or an automated cell phone/landline alert system • Weather radios
Floods	Flooding in 2008; Retiled, redid waterways, re-seeded • Limited crop damage in bottom areas	• Keep drainage ditches cleaned out and banks stable (ongoing) • Annual evaluation of drainage system (ongoing)
Drought	• Reduces crop production • Mental anxiety/anguish for farmers • Farm water availability issues for farms on wells; livestock	• Adopting crop insurance (ongoing) • Create a list for rural residents on wells of communities and companies that will bring in water • Educational materials for people/companies hauling water about safe water transport • Education on proper drought procedures
Extreme Heat	• Livestock deaths (but limited livestock in the county)	• Identify additional cooling centers especially for County Fair • Obtain funding to build additional cooling center • More electricity in the barns to run additional fans • Check on neighbor program

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Earthquake	• Damage to pipelines along fault lines could create a natural gas shortage; subsequent impacts on people and livestock • Stress crop distribution system; rail, river	
Tornado	• Damage agricultural buildings; elevators, storage buildings along path of tornado	• Create a list of who has what equipment to aid in disaster response and cleanup
Winter Storms (snow, ice)	• Loss of power	• Create educational materials about properly installing and using generators • County radios in township snow plows (ongoing) • Convene and train rural road commissioners • Create educational materials on what to do and not do in a winter storm
Extreme Cold	• Similar to the winter storms and extreme heat	
Flash Floods	• Disruption of transportation systems	• High water signs on rural roads (ongoing)

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Wild Fires		

Name: Business Date: _____

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	Storms on 08/04 knocked down tower which supplied internet to business community. Also affected cell phone users. Affected ability to take payments and conduct business. • Business Interruption • Damage to Buildings	• Keeping paper back up of important documents and information • Have manual credit card paper to process payments during an outage • Have a land-line phone back up • Regular maintenance and pruning of trees • Making sure you have proper insurance to cover disaster related expenses
Floods	• Business Interruption • Damage to Buildings • Damage to Equipment • Limited Access to Business	• Ensuring paper files are stored properly i.e. not in the basement • Back-up system for water removal (pump).
Drought	• Plant and flower stores and landscapers have seen decreased sales • Recreation and tourism has been adversely affected	• Have financial reserves in businesses that are agriculturally based to make it through the drought • Crop Insurance
Extreme Heat	• Recreation and tourism has been adversely affected • Increased maintenance costs for machinery and equipment • People are fatigued more easily and are not as efficient	• Having flexible hours at golf courses or outdoor based businesses to allow operation during non-peak heat hours. • Education and reminders for workforces who work in extreme temperatures to drink plenty of water and stay hydrated.

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Earthquake	• Business interruption due to natural gas system disruption • Transportation system crippled due to bridge and overpass closures	
Tornado	• Business Interruption • Damage to Buildings • Damage to Equipment • Limited Access to Business	• Create evacuation plan for businesses especially small and medium sized businesses • Training new staff on disaster plans, and conduct ongoing trainings.
Winter Storms (snow, ice)	• Business Interruption • Damage to Buildings • Damage to Equipment • Limited Access to Business • Liability for slips and falls outside and inside of businesses	• Used Wal-Mart as a staging area for semis during blizzard (ongoing)
Extreme Cold	• Equipment Damage • Risk for people who work outside	• Advertise heating centers; Wal-Mart, Churches (ongoing) • Educational materials aimed at having businesses understand their insurance coverage; policy reviews
Flash Floods	• Same as floods	

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies

Need for cash, inability to use credit cards.

Possibly create insurance educational materials for distribution to small businesses

Advertise at service clubs, church groups, chambers

Name: Public Safety Date: _____

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	• Equipment failure; Central dispatch system failed unable to communicate due to misalignment of dishes	• Identify secondary back up system in case of failure of regular and primary back up system. • Obtain satellite phones to be deployed in the field when communication system goes down. • Explore interoperability with neighboring communication systems (West Com) (ongoing)
Floods	• Blocking of roads can hinder responders from responding. • Responders may need to aid in evacuations when there is severe flooding	• Create protocol to utilize reverse 911 system to notify residents of flooding • Create online real-time updated map that shows flooded areas of the County
Drought	• Threat of fires	• Implement burn bans when appropriate (ongoing)
Extreme Heat	• Threat of heat stroke for public safety responders (fire fighters)	• Increased number of crews to relieve one another (ongoing) • Alternate duty uniforms including shorts (ongoing) • Law enforcement is available to transport at risk populations to cooling centers during extreme heat (ongoing)

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Earthquake	• Closure of overpasses and bridges until post-earthquake I-DOT inspections, can hinder response	
Tornado	• Potential for public safety facility to be damaged/destroyed	• Require tornado shelters in mobile home parks • Mutual aid agreements to utilize neighboring stations/facilities (ongoing)
Winter Storms (snow, ice)	Last Event: blizzard of February 2011 – Shut down public safety departments • Can affect roads which can increase ambulance transport times. • Can affect mechanical equipment (generators)	• Create a standing task force to deal with impact of storms (ongoing) • Create plan to deploy resources at substations dispersed throughout the county ahead of a severe storm (ongoing)
Extreme Cold	• Can affect fire and law enforcement personnel who are working outside	• Increased number of crews to relieve one another (ongoing) • Educational materials to let people know not to use open flames and space heaters in order to prevent fires
Flash Floods	• Levy failure on cooling lake at power plant is possible	

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Any	• Language barriers; how to disseminate public Information and answer emergency calls with non-English speakers	• Identify possible third-party translation services

Effective fore planning and utilization of information that blizzard was coming could have minimized impact, as a result a task force was created.

I-tech; mobile communication system

Language barriers; how to disseminate public information to non-English speakers

Name: Transportation Date: _____

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	Last disaster was the 8 lightning strikes at Lyondell last summer, shut down power and all the backups . Potential for explosion because chemicals stored chilled under pressure, power went out. • Downed limbs can disrupt roads for a limited time • Disruption can be compounded when power lines are down over roadways • Storms can shut down public transportation service • Power outages can disrupt businesses, particularly with perishable items.	• Removing trees from right of way (ongoing) • Installing snow fences and hedges (ongoing) • Back-up generators (ongoing)
Floods	• Roads can be flooded, disrupting transportation system due to drainage system • Mowing policies and inability to remove dirt from side of the road causes debris to collect in ditches.	• Planning ahead and establishing rules for development along the waterway. • Ditch cleaning (ongoing) • Add additional culverts (ongoing) • Hydrologic studies when bridges are replaced (ongoing) • Purchase of right of way to elevate commonly flooding roads (ongoing)
Drought		

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Extreme Heat	• Reduced demand for public transportation services • People need public transportation to reach cooling centers • In businesses the heat can adversely affect workers • Road buckling/pavement blow-ups	• Under-road drainage system to alleviate moisture
Earthquake	• Disruption of transportation systems	• Bridge retrofits (ongoing)
Tornado	• Same as thunderstorm	
Winter Storms (snow, ice)	Recent event: February blizzard of 2011, taxes equipment and manpower. • Impassable roads • Sliding off roads due to ice	• Winter storm tote kit including blankets and water
Extreme Cold	• Iced overpasses	• Salting bridges (ongoing)

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Flash Floods	• Same as flash flooding	• Scour prevention plans (ongoing)

Grundy County has had a large increase in shipping/logistics firms. Disruption to transportation would be very disruptive.

Granger is opening a new logistics firm in Minooka; one of their new initiatives is disaster response

Name: Health and Human Services Date: 8/9/12

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Severe Storms (thunder, wind, hail)	• power outages can affect elevator operation • clients can be affected	• generator for both elevator and kitchen services • brochures
Floods	• can prevent access to clients, but also getting food, medicine • food and nutrition services	• training for emergency procedures
Drought	• water could become an issue for isolated rural area	
Extreme Heat	• senior cooling center	• can establish cooling center once vetted for ADA accessibility - Housing authority facility will also include hot meal • set up a committee to establish
Earthquake	• can be a heating issue and transportation issue • access to clients may be an issue	• electric heating can be an option, if electricity is on • can adapt the access for emergency services across bridges, etc. for life threatening situation
Tornado	• food issues can be a problem for households • vulnerable populations	• printed material available through U of I extension • weather radio distribution • text and phone call alerts
Winter Storms (snow, ice)	• power outages and meal services • vulnerable populations may be without food • homeless population have PADS Program	• poverty simulation program
Extreme Cold	• SAME PROBLEMS AS OTHERS	

Natural Hazard	Effects on People/Property	Possible Mitigation Strategies
Flash Floods		

Heat wave was an urgent need where lives were saved- have used grants to buy AC

Due to AG, no official cooling center. Have recommended libraries, stores, theatres, etc.

poverty simulation may assist in broadening the uunderstanding of vunerable populations

FOCUS GROUP INVITATION LIST

The following were invited to attend one of the focus groups and those in bold attended a focus group session. All of the focus groups were held on August 3 and 4, 2012, at the Grundy County Extension Office.

AGRICULTURE

Tasha Bunting, Grundy County Farm Bureau
Natalie Mahler, Grundy County SWCD
Bill Stahler, Grainco FS
Ron Burling, Grundy County Farm Service Agency

EDUCATION

Dr. Kent Bugg, Coal City CUSD #1
Paul Nordstrm, Kendall Grundy Regional Office of Education
Kathy Perry, Superintendent, Saratoga Elementary School
Patrick Halloran, Superintendent, Morris Community High School District #101
Peter Pasteris, Nettle Creek Elementary School
Albert Gegenheimer, Minooka CCSD #201
Tony Whiston, Gardner Elementary School
Neil Sandburg, Grundy County Special Education Coop
Nancy Dillow, M-V-K Elementary District #2C
Lance Copes, Grundy Area Vocational Center

BUSINESS

Kevin Olson, Grundy Bank
Caroline Portlock, Grundy County Chamber of Commerce
Larry Kelley, Standard Bank
David Fischer, Manager, Morris Walgreens
Bob Joneson, Akzo-Nobel Morris
Dean Tambling, Country Mutual Insurance, Coal City

UTILITIES

Carmen Morales, Nicor Gas
Jeff Hettrick, ComEd
Kevin Murphy, Morris Water Department

PUBLIC SAFETY

Donna Holtan, Director, Grundy County 911 Center
Jackie Sparrow, M-V-K Ambulance Service
Al Yancey, Chief, Minooka Fire Department
James Sheldon, Chief, Coal City Fire Department
Kevin Callahan, Chief Deputy, Grundy County Sheriff's Department
Justin Meyer, Chief, Minooka Police Department
Tom Best, Chief, Coal city Police Department
Monty Serena, Chief, South Wilmington Fire Department

HEALTH & HUMAN SERVICES

Brent Newman, Grundy County Housing Authority
Chris Donley, Senior Programs, Grundy County Health Department
Kay Lynn Shoemaker, Administrator, Grundy County Health Department
Kevin Bernard, Morris Hospital and Healthcare Centers
Pam Heavens, Will-Grundy Center for Independent Living

TRANSPORTATION

Sherey Zerbian, Grundy County Public Transit
Bruce Hucker, Illinois Department of Transportation District #3
Nancy Norton-Ammer, Grundy Economic Development Council
Laura McCullough, Illinois Central School Bus

Publicity – Sample Poster

Grundy County

Hazard Mitigation Community Meeting

PLANNING FOR THE FUTURE IN THE EVENT OF A DISASTER

WE NEED YOUR INPUT AND IDEAS

Please join us on August 30, 2012 to share your ideas about weather related incidents, natural hazards, and community

Thursday, August 30, 2012

6PM

Grundy County Emergency Operations Center

Large Conference Room

1320 Union Street

Morris, Illinois

For more information call Jim Lutz at Grundy County Emergency Management Agency

(815)941-3200

Sample Press Release

Public Meeting Scheduled for Hazard Mitigation Planning

Release Date: August 1, 2012

Contact: Jim Lutz 815-941-3200

Morris, Illinois. On Thursday, August 30, at 6pm Grundy County Emergency Management Agency will be hosting a public meeting to gather input on the county's Multijurisdictional Hazard Mitigation Plan. The meeting will be held in the large conference room at the 1320 Union Street facility in Morris. According to Jim Lutz, Grundy County Emergency Management Director, this meeting is part of a larger planning process required by FEMA. "One of the components of hazard mitigation planning as prescribed by FEMA is public engagement.", commented Lutz. "This meeting will provide the public the opportunities to not only learn about the Mitigation planning process, but also to share ideas that might help their community reduce the risks from natural disasters."

Grundy County applied for FEMA (Federal Emergency Management Agency) Funds to develop the plan back in 2009, but funding was just released for the process earlier this year. The County had contracted with University of Illinois Extension to facilitate the plan, but a local committee representing all of the jurisdictions will actually be developing the plan. According to University of Illinois Extension County Director Beth LaPlante, "Our staff, together with the Illinois State Water Survey, is well versed in the planning process, but our local citizens and officials know Grundy County needs and issues. With this participatory planning process, the county will get the best possible plan."

The meeting on August 30 will focus upon gathering public input for plan, and will help the committee determine the public wishes in regards to project that would reduce the risk to life and property from Natural Disasters. For more information contact Jim Lutz, Grundy County Emergency Management Agency,1320 Union St. Rm. E-06,Morris IL 60450-2426, 815/941-3200.

EMA seeks ways to lessen disasters' blows

Public input sought as mitigation plan created

BY JESSICA SHUMAKER
jshumaker@morrisdailyherald.com

Members of the public, first responders and local emergency management personnel gathered at the Grundy County Administration Center Thursday night to discuss ideas for lessening the blow of natural disasters.

Carrie McKillip and Zach Kennedy, community development educators for the University of Illinois Extension, facilitated the meeting, which was focused on gathering community ideas and input as the two and Grundy County Emergency Management Agency leaders work to put together a county-wide hazard mitigation plan.

McKillip said the conversation about mitigating disasters stems from the need to put in place a plan in order to access funds from the Federal Emergency Management Agency, or FEMA.

"When we're talking about mitigation, we're talking about actions that will reduce or eliminate the impact of the natural disaster on people and properties," Kennedy said.

He noted that the FEMA funds for mitigation are not dollars for disaster recovery or response, but instead fund projects that help reduce the impact of natural disaster.

Part of putting together mitigation plans, McKillip said, is bringing together community officials and citizens.

"Part of the whole philosophy behind getting community input is you know your communities better than anybody else," she said. " ... You know where it floods, you know where there are dangerous trees, those kinds of things."

The two showed the different types of projects that fall under projects accepted by FEMA, from public information campaigns to making sure building codes are in place, and discussed how the hazards in different scenarios, like floods or extreme temperature, could be reduced through projects.

See 'EMA' • PAGE 12A

EMA

Continued from Page 1A

Following the meeting, Kennedy explained it was part of the bigger planning process to assemble a mitigation plan for the county. Previously, focus groups of different community representatives, like area educators and business owners, gathered to tackle the same list of disasters. After projects are assembled into a plan, the plan will be brought to the public for inspection.

Morris resident Ken Buck said it was a productive night. Of the groups involved, he was attending as a citizen. While he has an interest and background in emergency management, at the meeting he said he just wanted to add to the conversation.

"I'm always appreciative when my thoughts and ideas are accepted and taken into consideration," he said.

Cindy Wilson, fire and life safety education coordinator for Channahon and Minooka fire protection districts, was attending the meeting in a more formal capacity. She said in addition to being able to give feedback, it was also worthwhile hearing the conversation.

"I was looking for ideas to take back, too," she said.

Herald Photo by Jessica Shumaker - jshumaker@morrisdailyherald.com

Carrie McKillip, community development educator for the University of Illinois Extension, interacts with Morris Fire and Ambulance Protection District Chief Tracey Steffes at a meeting dedicated to gathering public input on how to reduce the impact of natural disasters. The meeting was held Thursday at the Grundy County Administration Center.

She added that in her role as a liaison to the community, it's also good to have a feel for what is happening to know what the public needs to know.

"I'm the one who has to go to the public and say, this is what they want," she said.

McKillip said the conversation that took place Thursday night is continuing, and it's not too late for citizens who missed the meeting. Citizens may participate by giving their input by the way of a citizen survey online at https://www.surveymonkey.com/s/7XV5LP6. Hard copies are also available through the Grundy County EMA.

Committee Meeting Minutes

Minutes
Grundy County
Hazard Mitigation Steering Committee
June 14, 2012

ATTENDANCE: Carrie McKillip, Beth LaPlante, Zach Kennedy (U of I Extension); Lisa Graff and Brad McVay, Illinois State Water Survey; Tracy Schmaedeke, Verona; Paul Passafiume, Braceville; Terry Kernc, Diamond; Craig Meece, Grundy County Sheriff; Molly Heins, Grundy EMA; Jim Lutz, Grundy EMA; Heidi Miller, Grundy County; and Robert Coleman, Morris Fire Protection District

The meeting was called to order at 1:02 PM by Carrie McKillip, University of Illinois Extension. Introductions were made around the table. Jurisdictional Reps were asked to complete the match card indicating their salary or hourly wage, to assist with calculating their contribution of time to the process. This information will be kept confidential, and donated time will be reported in aggregate. Grundy County will be required to document a match of 25%, or $14,000.

Multi-Jurisdictional Participation Requirements were discussed. Many of the jurisdictions who signed letters of intent were not present. The group determined that the official participation requirement for the plan adoption will be attendance at 50% of the steering committee meetings. Several participants offered to contact jurisdictions not present, and encourage them to attend next meeting.

Carrie gave a brief explanation of mitigation, and types of mitigation activities.

HAZUS and GIS Utilization in the planning process were explained by ISWS staff, and participants were asked to check the maps to see if the critical facilities were placed in the correct place for the HAZUS Runs. Maps for villages not in attendance were kept and will be mailed to the jurisdiction, along with a strongly worded letter requesting their participation.

The meeting schedule for Steering Committee and focus groups were discussed, and participants were encouraged to forward names to Jim for the Focus groups. It was also determined that the survey will be done mainly on-line, although hard copies will be available at the 4-H Show in July, and at various locations throughout the county. Participants were asked to scan the survey for errors and to let Carrie know.
The push for the Survey will be from mid-August until the end of September. Marketing of the survey will include press release, newspapers, water billings, web sites, and radio.
Flyers for the public meeting will be available by the 4th of July. Carrie will send them to Jim, who will print and distribute to the group.

Participants were asked to assist with the collection of existing planning documents and to bring them to the next meeting. These items will be scanned to ensure consistency with mitigation plan. Each jurisdiction was also asked to bring address of any facilities that should be listed in the plan as a potential high risk evacuation area, such as nursing homes, day care facilities, etc. These can be listed in the plan.

The next meeting will be @ 1PM on July 26. The focus of the July meeting will be risk assessment, and historical weather data will be available for this meeting.

Minutes

Grundy County

Hazard Mitigation Steering Committee

July 26, 2012

ATTENDANCE: Carrie McKillip, Beth LaPlante, Zach Kennedy (U of I Extension); Lisa Graff and Brad McVay, Illinois State Water Survey; Don Plott, Mazon; Jim Homa Braceville; Terry Kernc, Diamond; Jim Lutz, Grundy EMA; Kevin McNamara, Dwight; Jim Fielder, Seneca; Ken Briley, Minooka; Craig Cassen, Grundy County Hightway; Bill Cheshareck, Morris Norman Lardi, South Wilmimgton; and Robert Coleman, Morris Fire Protection District

The meeting was called to order at 1:02 PM by Carrie McKillip, University of Illinois Extension. Introductions were made around the table. New Jurisdictional Reps were asked to complete the match card indicating their salary or hourly wage, to assist with calculating their contribution of time to the process. The minutes of the June 14 meeting were reviewed and approved. Bob Coleman made the motion, with Terry Kernc seconding the motion.

The public engagement plan was discussed, as well as the need for additional input on invitees for the focus groups. Carrie and Zach will be conducting the focus groups on August 8 and 9 at the Grundy County Extension Office. In addition, the link for the survey monkey version of the survey was shared, and steering committee members were encouraged to invite citizens to complete the survey on line, as well as print copies of the survey and distribute them. Jim and Beth will get hard copies of the survey completed at the 4-H show this weekend. The link will remain open through the end of July.

The need for steering committee to publicize the public meeting was discussed. Posters can be gotten from Jim. Carrie encouraged each committee member to get 5-10 people from their jurisdiction to attend the public meeting.

Zach reviewed the 2010 Illinois State Natural Hazards Mitigation plan ratings Grundy County. Also, shared data on Federal disaster Declarations since 1981, historical weather data for the entire county. Lisa and Brad distributed HAZUS-data runs for floods, earthquakes, and tornado's in Grundy County.

Methodology for rating jurisdictional risks was then discussed. Zach reviewed the methodology for both the Illinois State Mitigation Plan, as well as a simpler methodology utilized in Mercer County. After discussion, the group determined they would prefer to use the three category simpler methodology. The Group determined the ratings would be Low/Moderate/High based upon the risk to life and property.

The group then spent the remainder of the meeting determining the ratings for each individual jurisdiction for all of the natural hazards. (See jurisdictional risk assessment grid.) The group was also asked to review the updated critical facility information; bring any plans and/or ordinances to the next meeting.

The next meeting will be @ 1PM on Aug 30. The focus of the Aug meeting will be to establish goals for the hazard mitigation plan. The public meeting is also scheduled for August 30 at 6pm.

Grundy County Hazard Mitigation Steering Committee
August 30, 2012
1 PM
Grundy County Emergency Operations Center

Attendance: Jim Lutz, Tracy Schumaedeke, Kevin McNamara, Robert Coleman, Craig Meece, Craig Cassem, Norman Lardi, Jr., Jim Homa, Jim Fiedler, Ken Briley, Terry Kernc, Carrie McKillip, Zach Kennedy, and Beth LaPlante.

The Meeting was called to order at 1:04 PM. Carrie McKillip reminded the group of the public meeting to be held that evening and encouraged them all to attend. The group then reviewed the agenda for the evening. McKillip also announced that the public survey was up on Survey Monkey and that the county would be able to respond to the Survey until October 1, 2012. Media releases about the survey went to all newspapers in the county. Hard copies of the survey will also be accepted.

Carrie then turned the focus of the meeting to determining the goals for the mitigation plan. After reviewing the sample goals distributed from various plans. The committee came to a consensus on five goals (see attached) with the caveat that mitigation in Grundy County impacts a far larger population than just Grundy County. It was determined to add an opening paragraph recognizing that fact.

Jim gave a report on the industry sector focus groups help on August 8 and 9. He stated how valuable these groups were to him by give a focused discussion that there is rarely time to have. Steering committee members were given copies of the notes from the focus groups.

Carrie reminder the committee of the next meeting, scheduled for September 20. In addition, due to some conflicts, the November 29 meeting was canceled, and a rough draft of the plan will be e-mailed to the steering committee in preparation for the January 17 Meeting, which will be the final plan review, as well as the Public Meeting to review the final plan.

Meeting Adjourned at 1:57 pm.

Minutes

Grundy County

Hazard Mitigation Steering Committee Meeting #4

September 20, 2012

1 pm Grundy County Emergency Operations Center

Attendance: Jim Lutz, Tracy Schmaedeke, Don Plott, Robert Coleman, Craig Meece, Ken Briley, Craig Cassen, Jim Fiedler, Terry Kernc, Joe Schroeder, Carrie McKillip, Zach Kennedy, Beth LaPlante

The meeting was called to order at 1:05 pm. The group was welcomed by Grundy EMA Director Jim Lutz. Extension staff reviewed the public meeting held on August 30. The event received good press coverage, both before and after the meeting. Although turnout was small, a good number of ideas were generated from the event.

Carrie McKillip reported that currently only 76 surveys have been submitted. McKillip encouraged the group to promote the survey hard for the next couple of weeks. Even though the survey was planned to be taken down on October 1, it can be left live longer than that, especially if people are still promoting the link.

McKillip reviewed the goals that the group developed at the last meeting. Terri Kernc made a motion, seconded by Tracy Schmaedeke, to adopt the goals as written. The motion passed unopposed.

McKillip led a discussion of how to build the jurisdictional project grids. Representatives were encouraged to look at projects suggested at the public meetings, focus groups, and other ideas that may impact their jurisdiction. McKillip explained that a project must be tied to one of the five goals, identify what hazard it addressed. Each jurisdiction was encouraged to have at least one project that would be considered a FEMA fundable project, although it was explained that inclusion on the grid certainly did not guarantee FEMA Funding. A review of the types of projects that are considered FEMA fundable was given, but committee members were also encouraged to visit the FEMA website and check out the “Best Practices” projects for mitigation.

Committee member were asked to bring a draft of their jurisdictional project grid to the meeting on October 18. At that meeting the grids will be reviewed and a plan maintenance methodology will be determined.

The meeting adjourned at 2pm.

Grundy County

Hazard Mitigation Steering Committee Meeting #5

October 18, 2012

1PM

Attendance: Jim Lutz, Beth LaPlante, Carrie McKillip, Zach Kennedy, Terry Kernc, Jim Fieldler, Joe Schroder, Robert Coleman, Ken Briley, Jeff Marques, and Don Plott

The meeting opened with Jim Lutz announcing regrets from both Tracy and Craig. Carrie updated group on progress on the draft of the plan, reminding the group that the November 29 meeting had been canceled, but the steering committee will have a draft of the complete plan by the end of November.

Steering Committee member turned in the Jurisdictional project grids they had completed. Carrie asked for them to put their phone numbers on the grids in case she had questions as she was putting them into the plan.

Zach reviewed the planning document grid, and reminded all jurisdictions to send him any planning documents, ordinances, etc. they may have not turned in at this point. Carrie and Zach also requested web addresses from any jurisdictions that may have websites.

Carrie led the group on a discussion of how the plan will be maintained. The group agreed unanimously that they would have an annual meeting, called by the County Emergency Management Director (Jim). Extension offered to facilitate the meeting each year. Jim has a plan maintenance section that he will tweak and send to Carrie for inclusion in the final document.

Discussion turned to the steering Committee review of the draft plan. He will have a pdf version of the draft plan by the end of November, and need to return any comments to Carrie by December 15. Once all the correction have been made, Carrie will submit the draft to IEMA with the crosswalk in January. The public meeting will be January 17, at 6pm. The final steering committee meeting will be earlier that day at 1pm.

Once notice of FEMA Approval is received, each jurisdiction the participated will have to adopt a resolution approving the plan. This adoption will make the jurisdictions eligible for mitigation funding. Carrie asked the group to try to get village board members to attend the public meeting on January 17, so they can get any questions answered regarding the plan.

Finally, Carrie passed around a summary of the survey responses and discussed briefly the results of the survey. A review of the survey will be included in the final plan.

Meeting adjourned at 1:45pm.

Grundy County

Hazard Mitigation Steering Committee Meeting #7

January 17, 2013

1PM

Minutes

Attendance: Jim Lutz, Don Plott, Jim Homa, Norm Lardi, Jim Fielder, Jeff Marquis, Bob Coleman, Ken Briley, Craig Meece, Kevin McNamara, Terry Kernc, Beth LaPlante, Zack Kennedy, and Carrie McKillip

Meeting was Called to Order by Jim Lutz at 1:03PM. Carrie welcomed the group and requested that all committee members submit their volunteer hours to Jim as soon as possible. These hours should include the time they spent reviewing the plan, working with other officials developing their jurisdictional projects, etc.

Carrie also requested the final Braceville projects so the project Grid could be be completed in the plan.

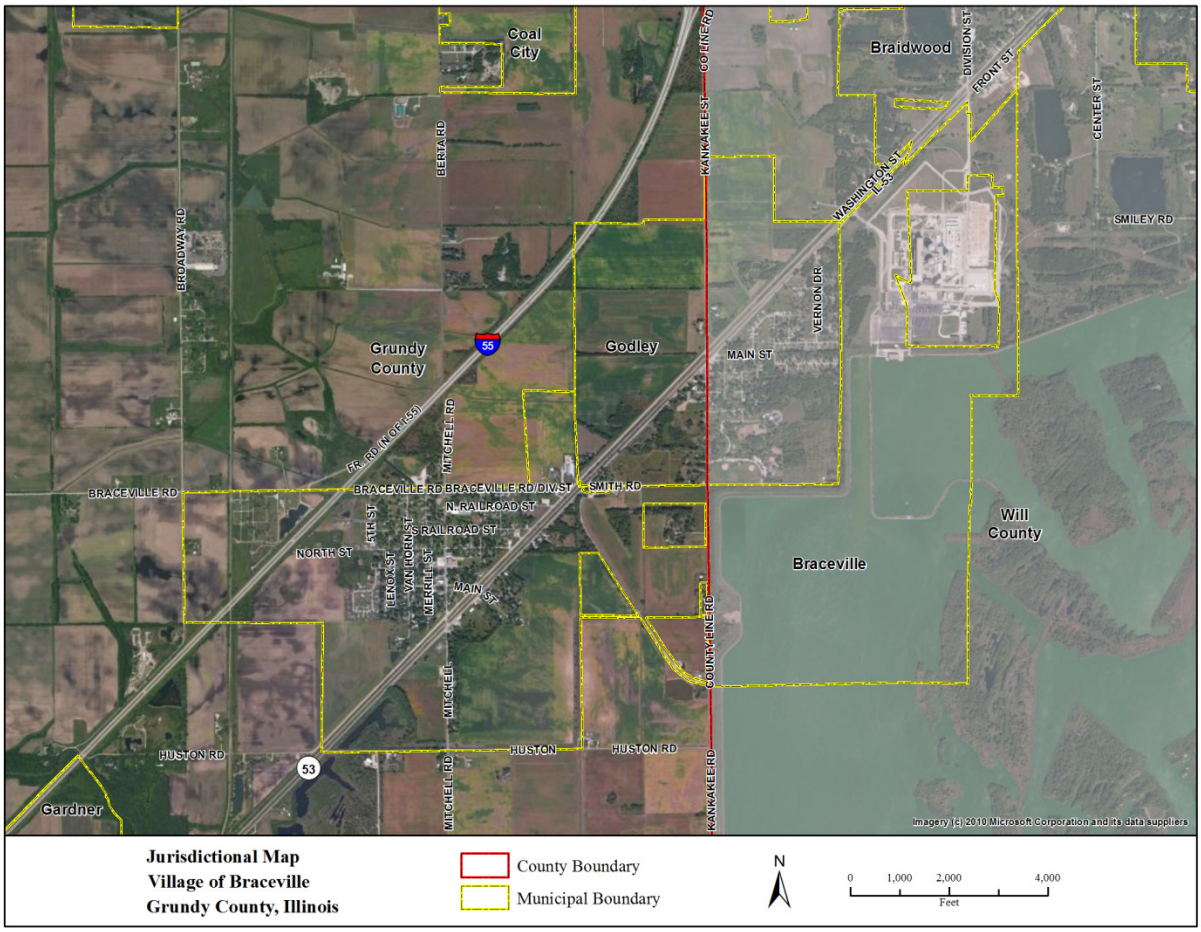
Steering Committee members were given a copy of the plan for one last review. Carrie also explained the remaining process after the public meeting later this evening. Once the final touches are put on the plan, it will be submitted to IEMA along with the "CrosswalK" indicating where the standards can be found in the plan.

The IEMA/FEMA Process will take some time, and there is no way to predict how long, but Carrie hopes to have the letter from FEMA by April. Once the letter is received, the Jurisdictional Adoption Process can begin. Jim will notify members when the resolutions can be adopted, and will get each jurisdiction as many hard copies of the plan as they need.

The Public Meeting Agenda for tonight was reviewed. Carrie and Jim both thanked all for their participation. Bob Coleman Motioned to adjourn, Jim Home seconded. All were in favor, meeting adjourned at 1:50PM.

Jurisdictional Maps

Braceville



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3RD ST.
PERRY ST.
MCARDLE RD
RATHBURN ST.
Grundy County
CARBON HILL RD
MCARDLE RD
Imagery (c) 2010 Microsoft Corporation and its data suppliers
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Municipal Boundary
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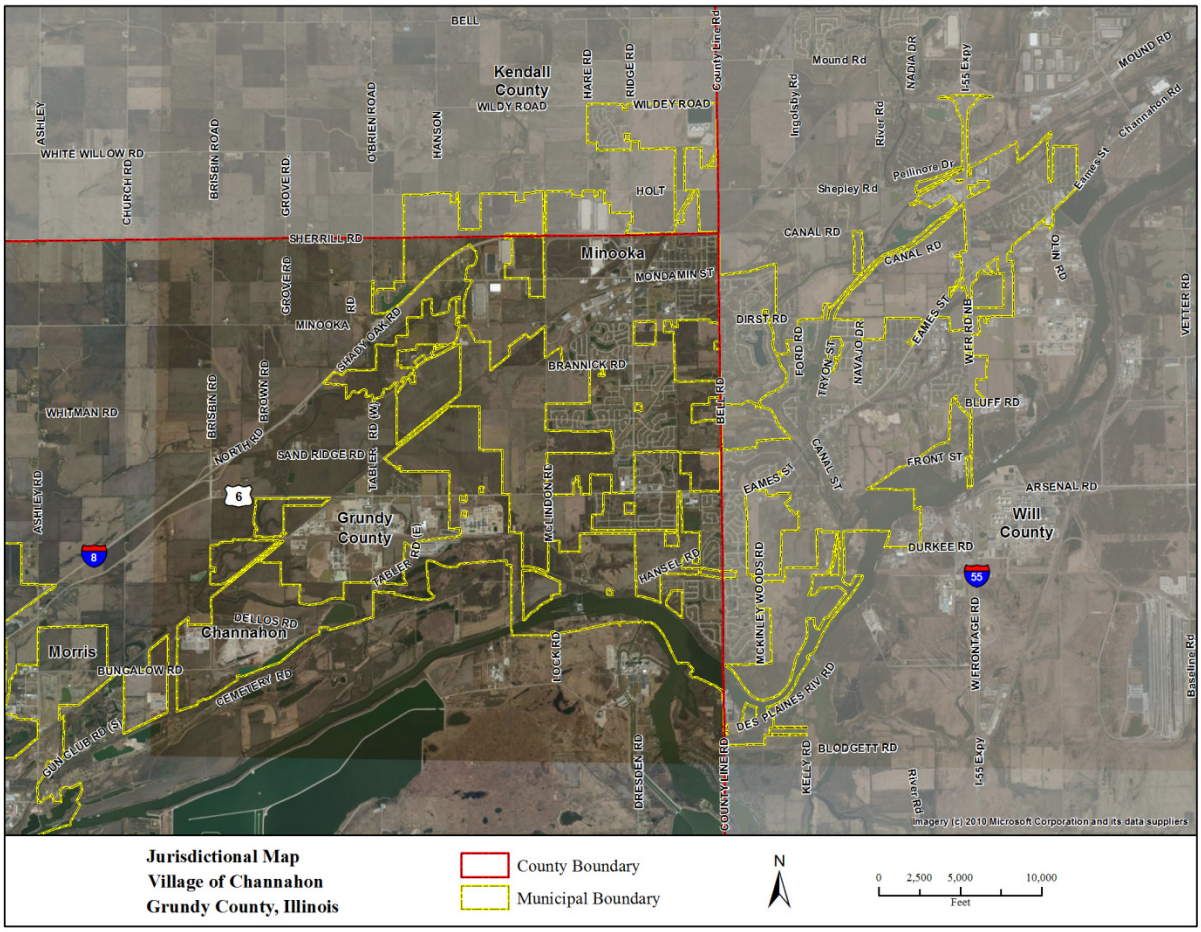
Channahon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Grundy County
Will County
Minooka
Channahon
Morris
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Mound Rd
NADIA DR
I-55 Expy
MOUND RD
Channahon Rd
ASHLEY
WHITE WILLOW RD
CHURCH RD
BRISBIN ROAD
GROVE RD.
O'BRIEN ROAD
HANSON
HOLT
Shepley Rd
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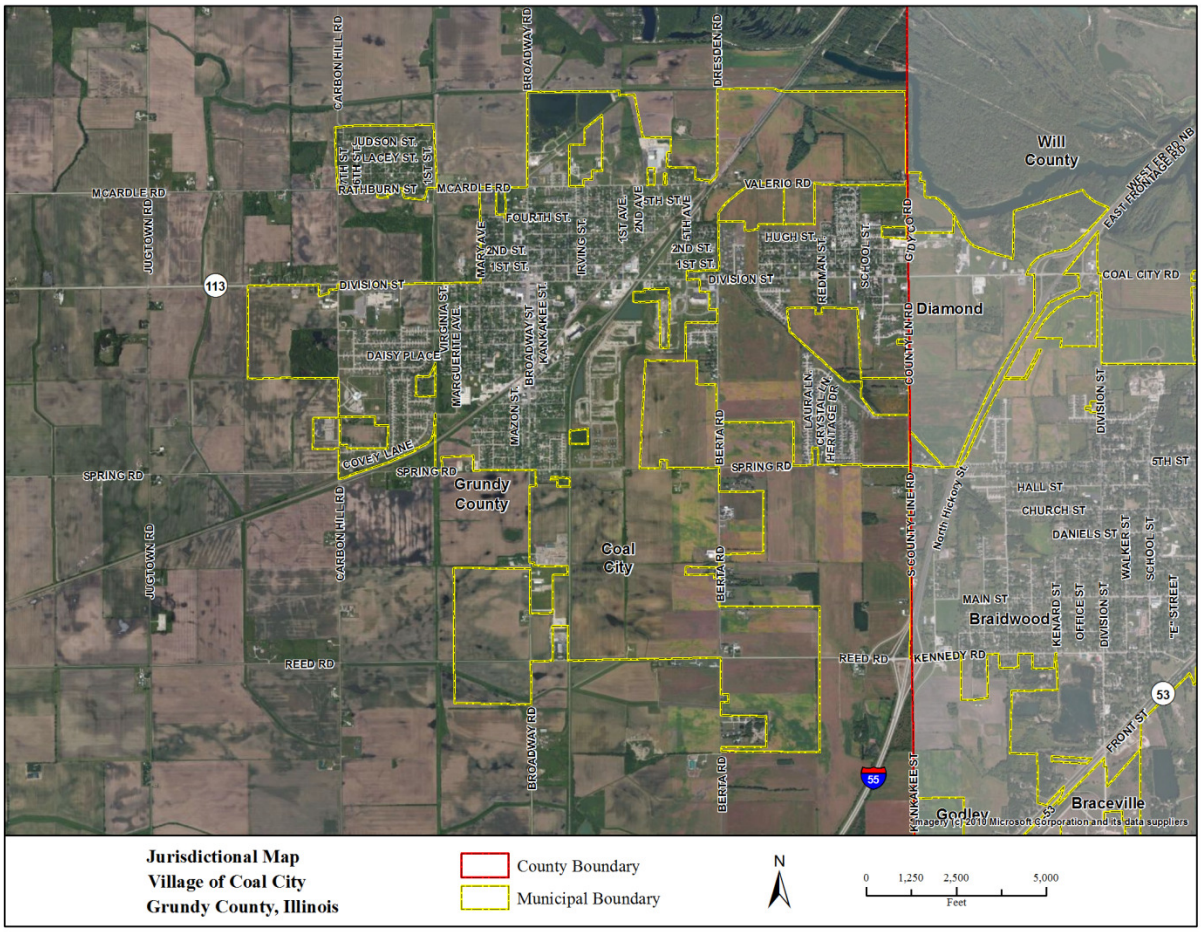
Coal City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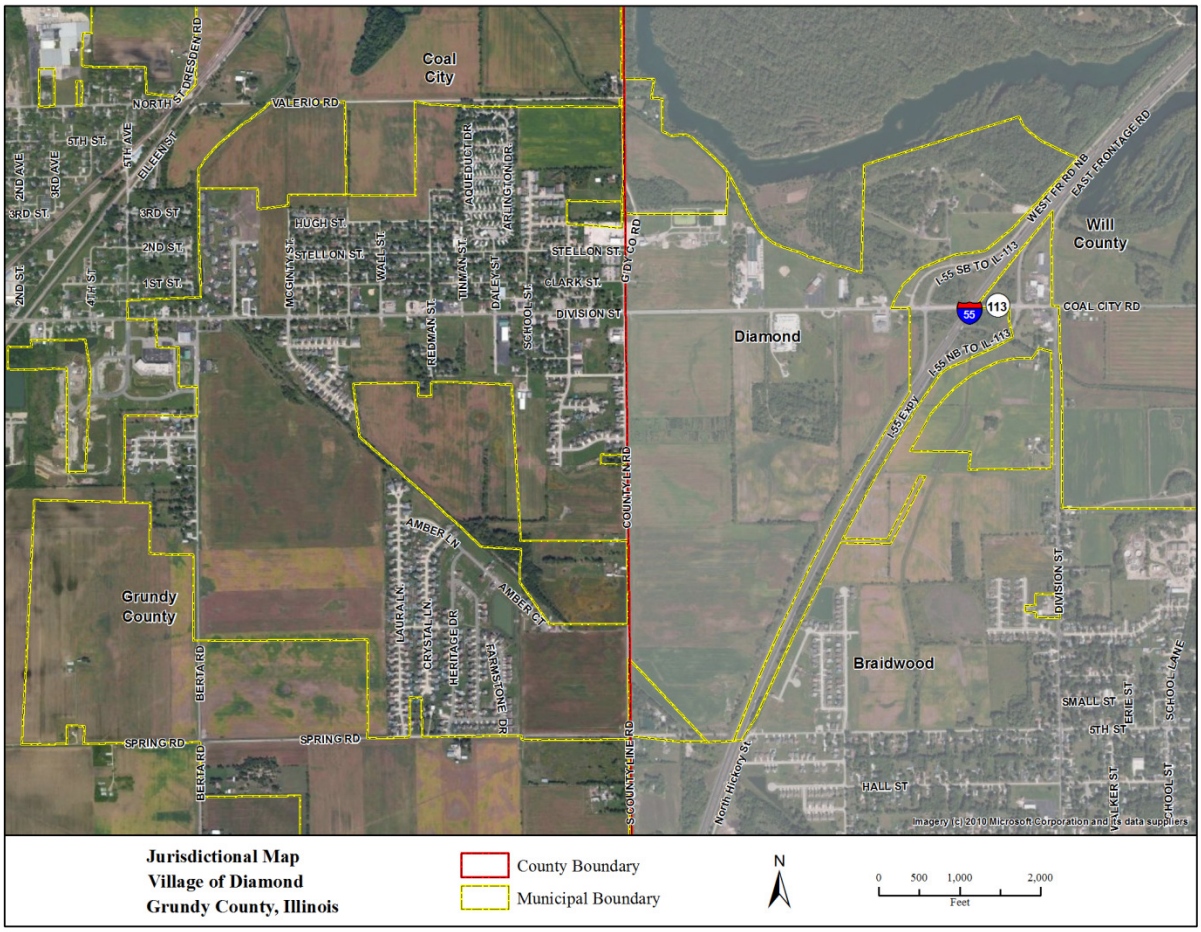
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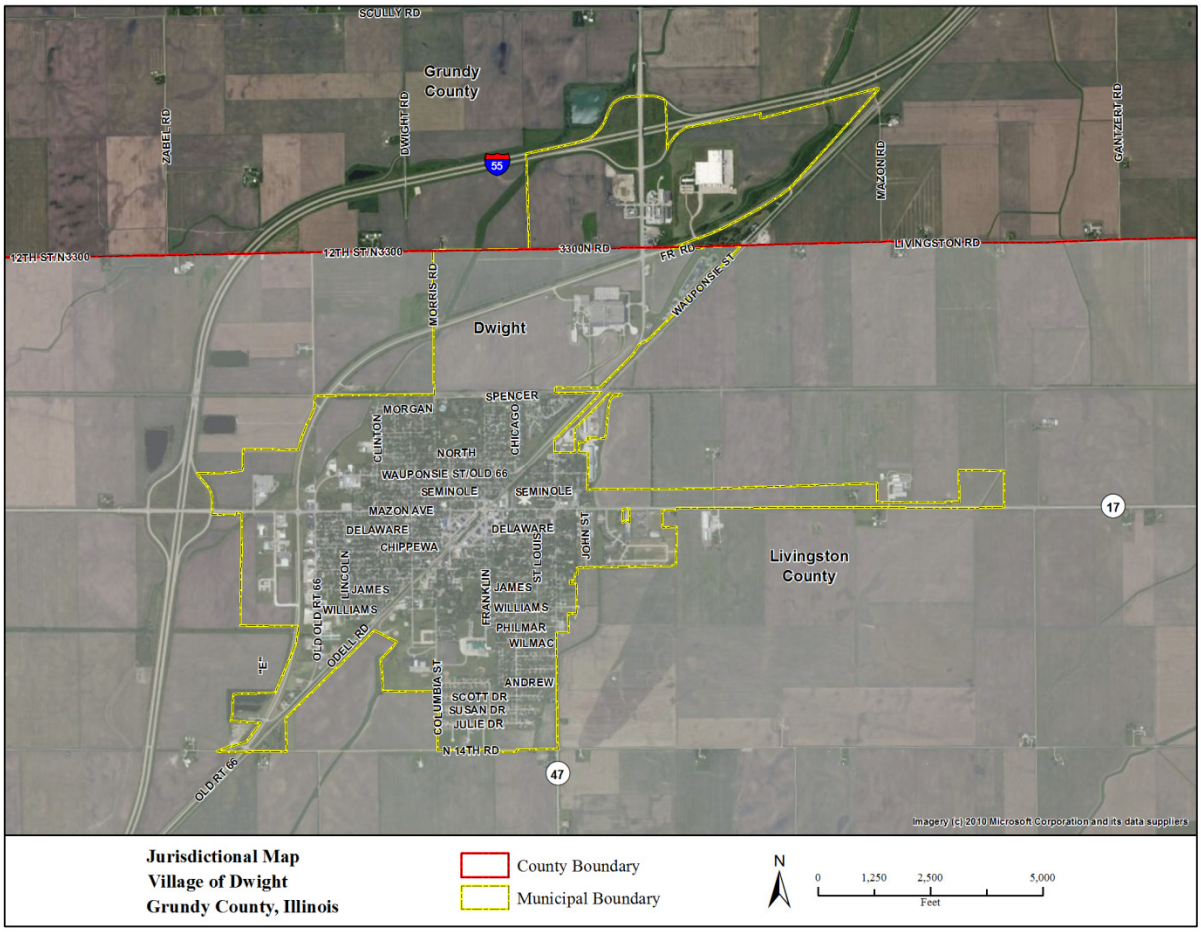
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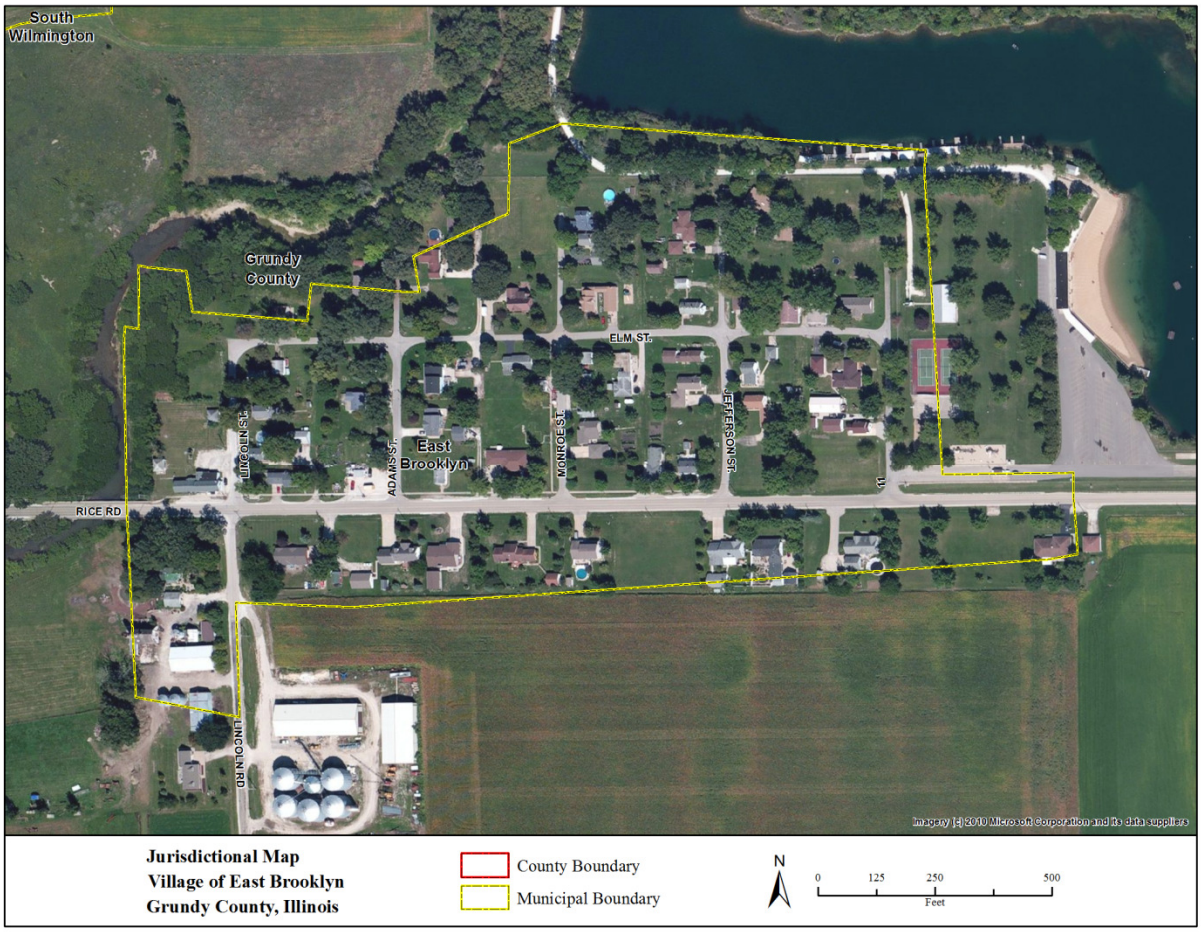

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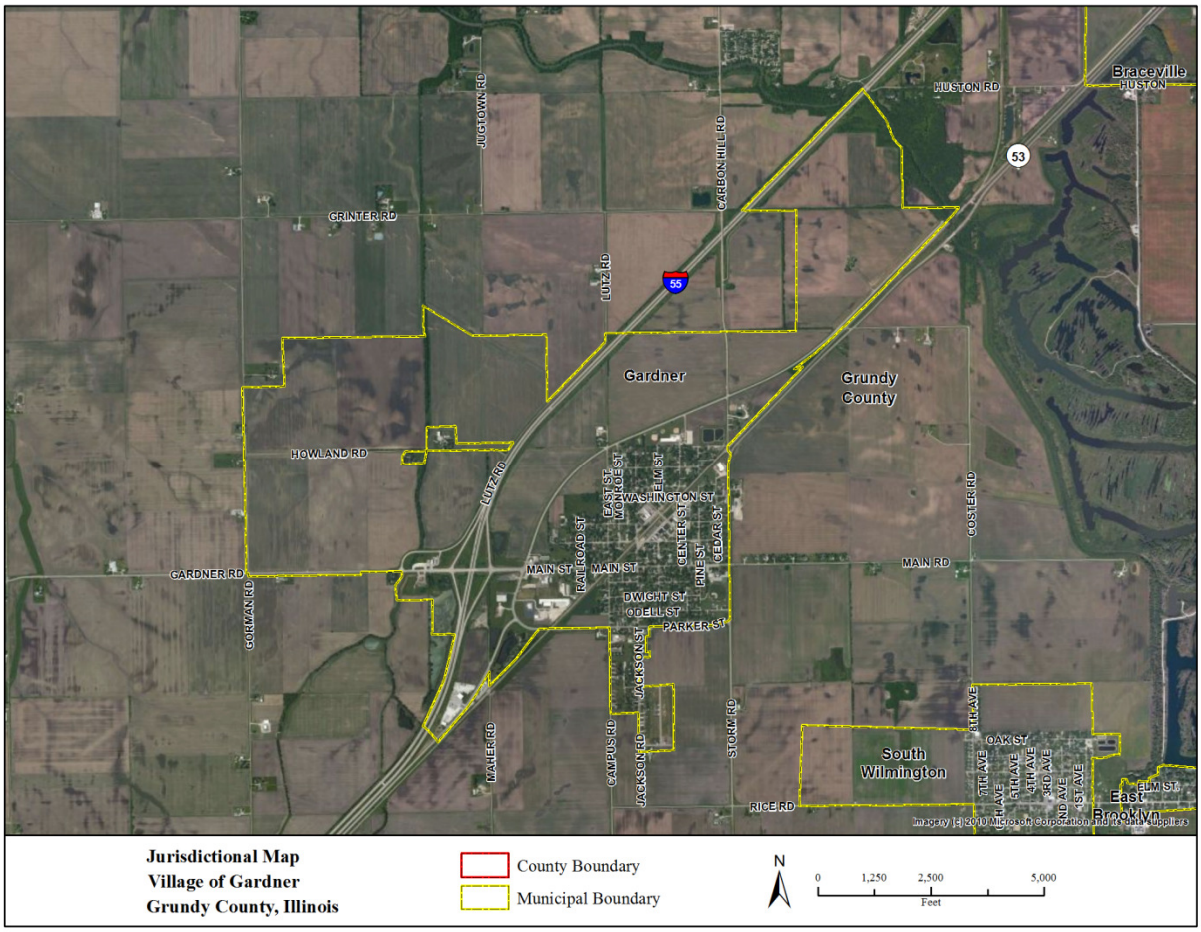
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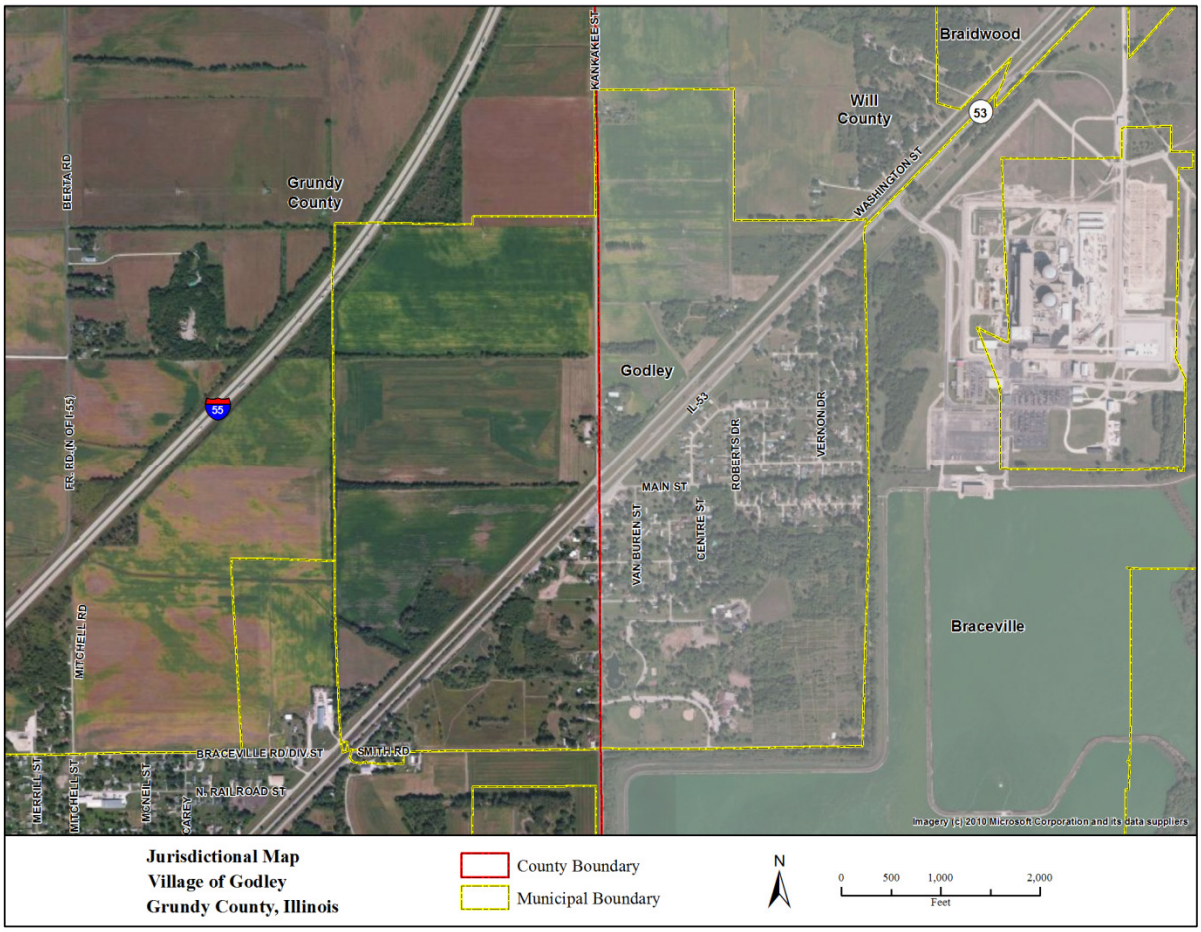
Godley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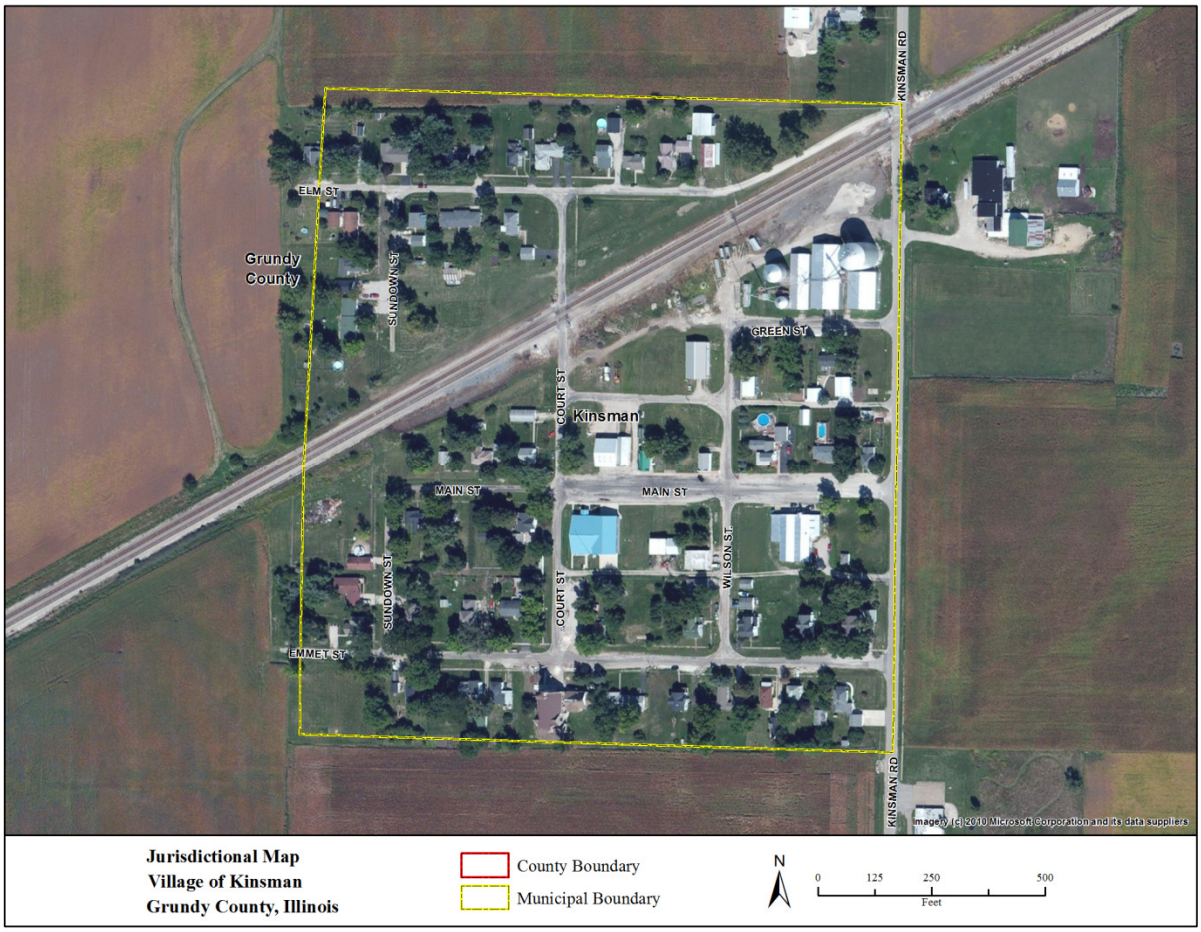
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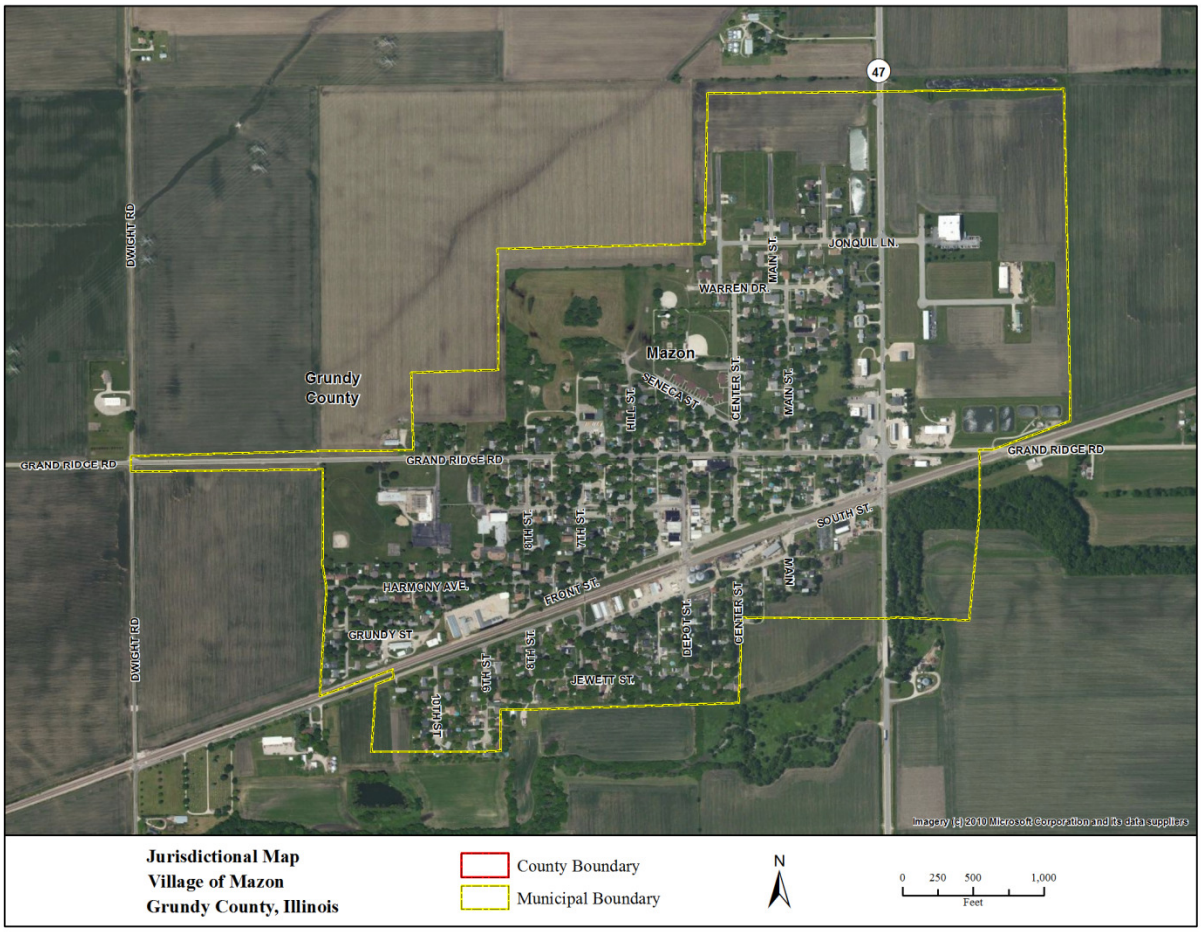
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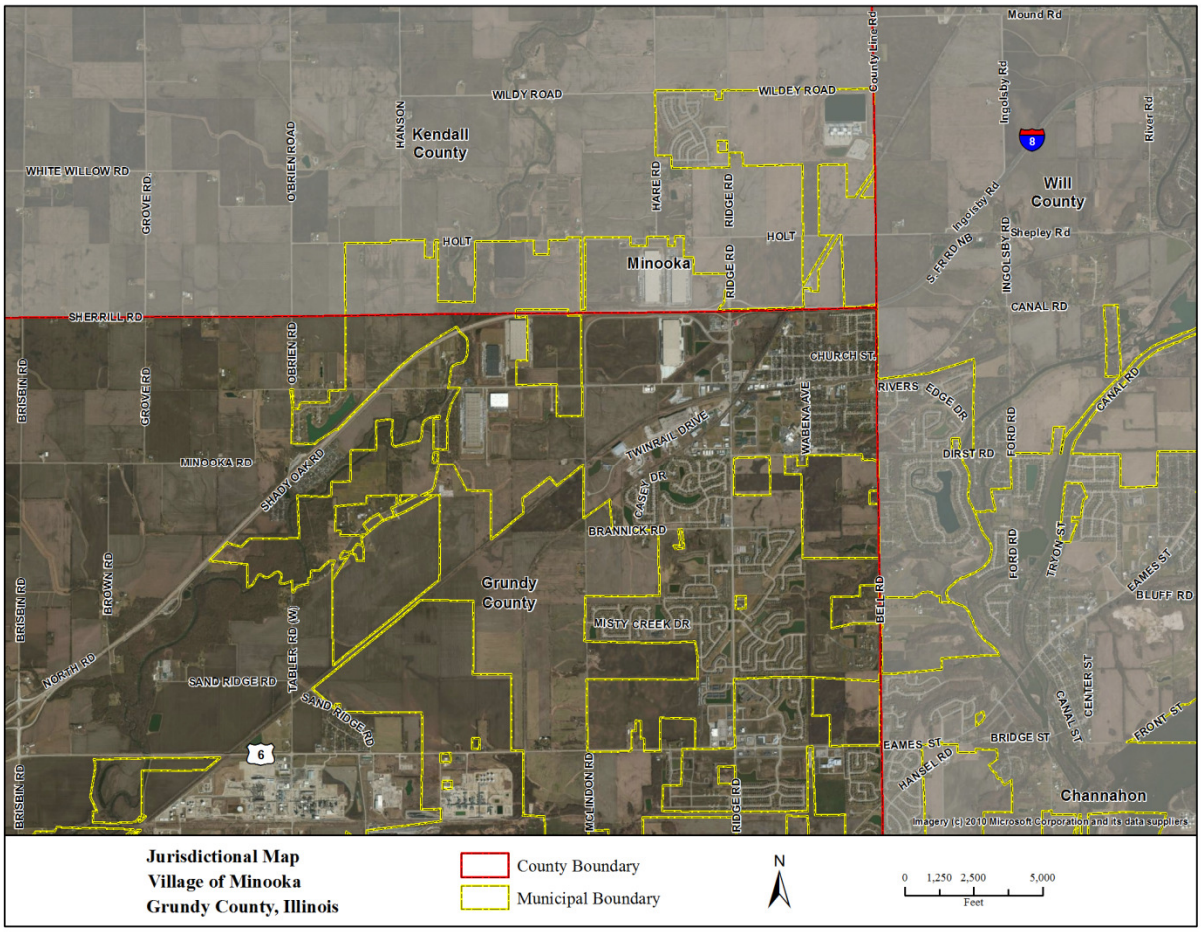
Minooka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MISTY CREEK DR
SAND RIDGE RD
CANAL RD
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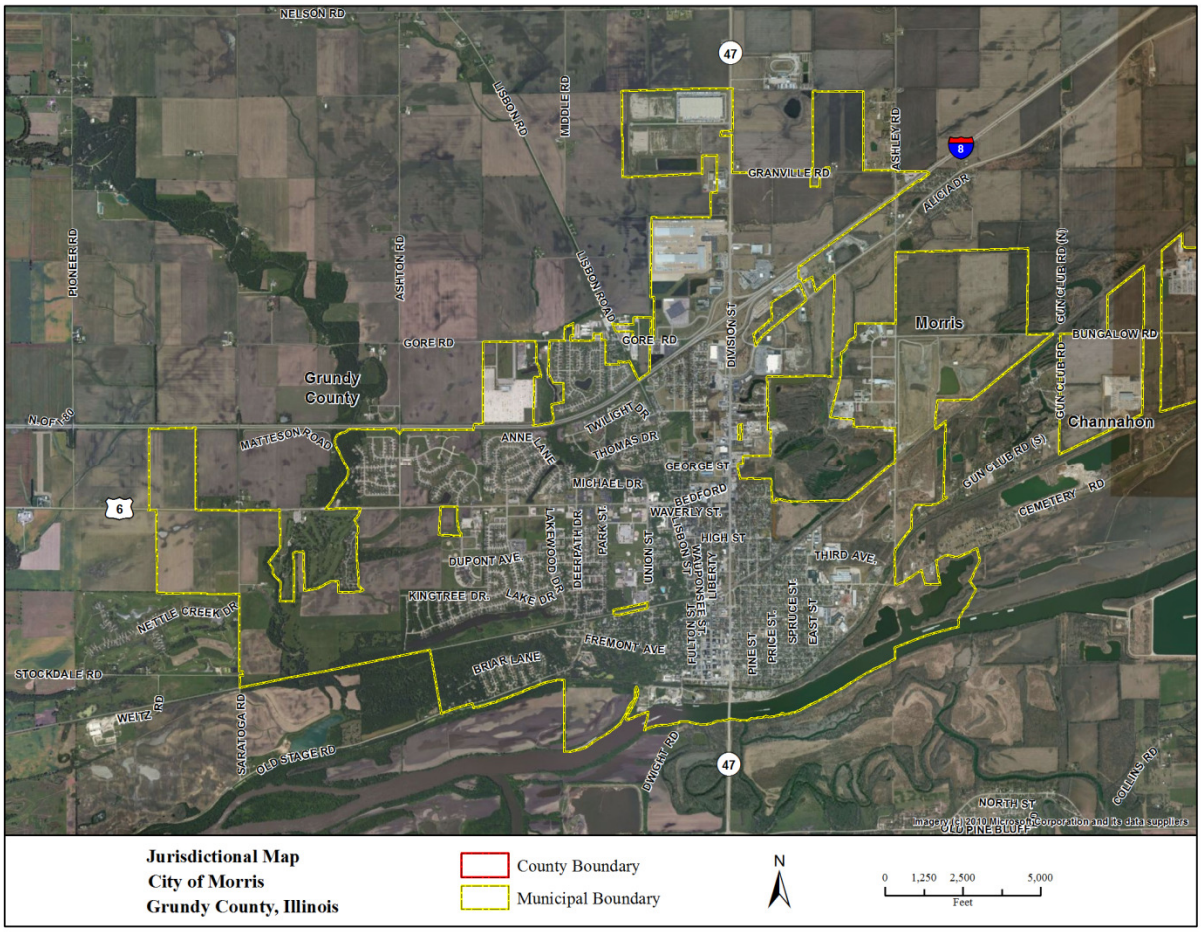
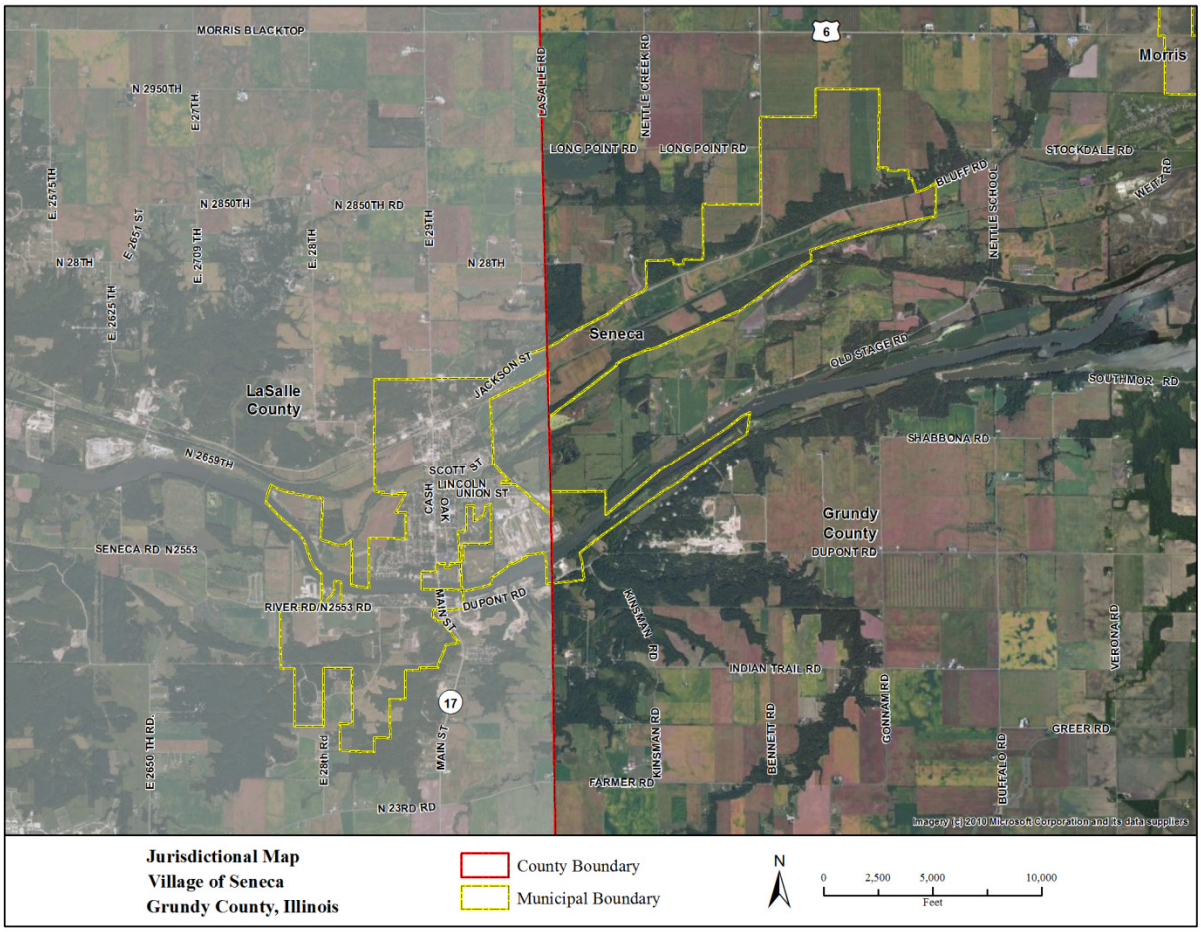
EAMES ST
BLUFF RD
Mound Rd
Shepley Rd
CHURCH ST
RIVERS EDGE DR
DIRST RD
FRONT ST
Jurisdictional Map
Village of Minooka
Grundy County, Illinois
County Boundary
Municipal Boundary
N
0 1,250 2,500 5,000
Feet
Imagery (c) 2010 Microsoft Corporation and its data suppliers

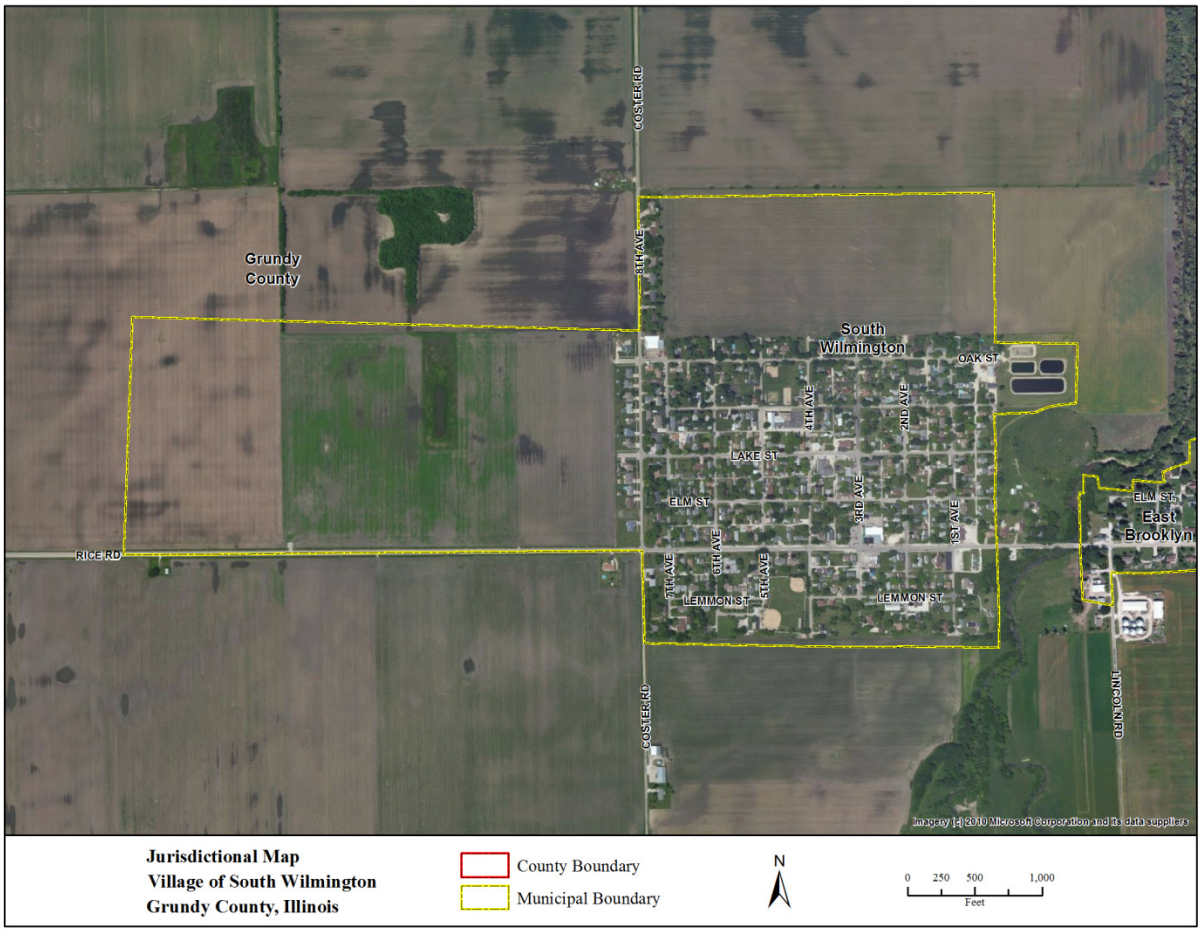
Morris


NELSON RD
LISSON RD
MIDDLE RD
47
ASHLEY RD
8
GRANVILLE RD
ALLIGATOR
PIONEER RD
ASHTON RD
LISSON ROAD
GORE RD
GORE RD
DIVISION ST
Morris
GUN CLUB RD (N)
BUNGALOW RD
Grundy County
GUN CLUB RD
Channahon
N OF RT 6
MATTESON ROAD
ANNE LANE
TWILIGHT DR
THOMAS DR
GEORGE ST
MICHAEL DR
BEDFORD
WAVERLY ST
HIGH ST
GUN CLUB RD (S)
CEMETERY RD
6
DUPONT AVE
KINGTREE DR
LAKE DR
LAKEWOOD DR
DEERPATH DR
PARK ST
UNION ST
LISBON ST
WAUPONSEE ST
LIBERTY
FULTON ST
PINE ST
PRICE ST
SPRUCE ST
EAST ST
THIRD AVE
NETTLE CREEK DR
FREMONT AVE
BRIAR LANE
STOCKDALE RD
WEITZ RD
SARATOGA RD
OLD STAGE RD
DWIGHT RD
47
COLLINS RD
NORTH ST
OLD PINE BLUFF
Imagery (c) 2010 Microsoft Corporation and its data suppliers
Jurisdictional Map
City of Morris
Grundy County, Illinois
County Boundary
Municipal Boundary
N
0 1,250 2,500 5,000
Feet

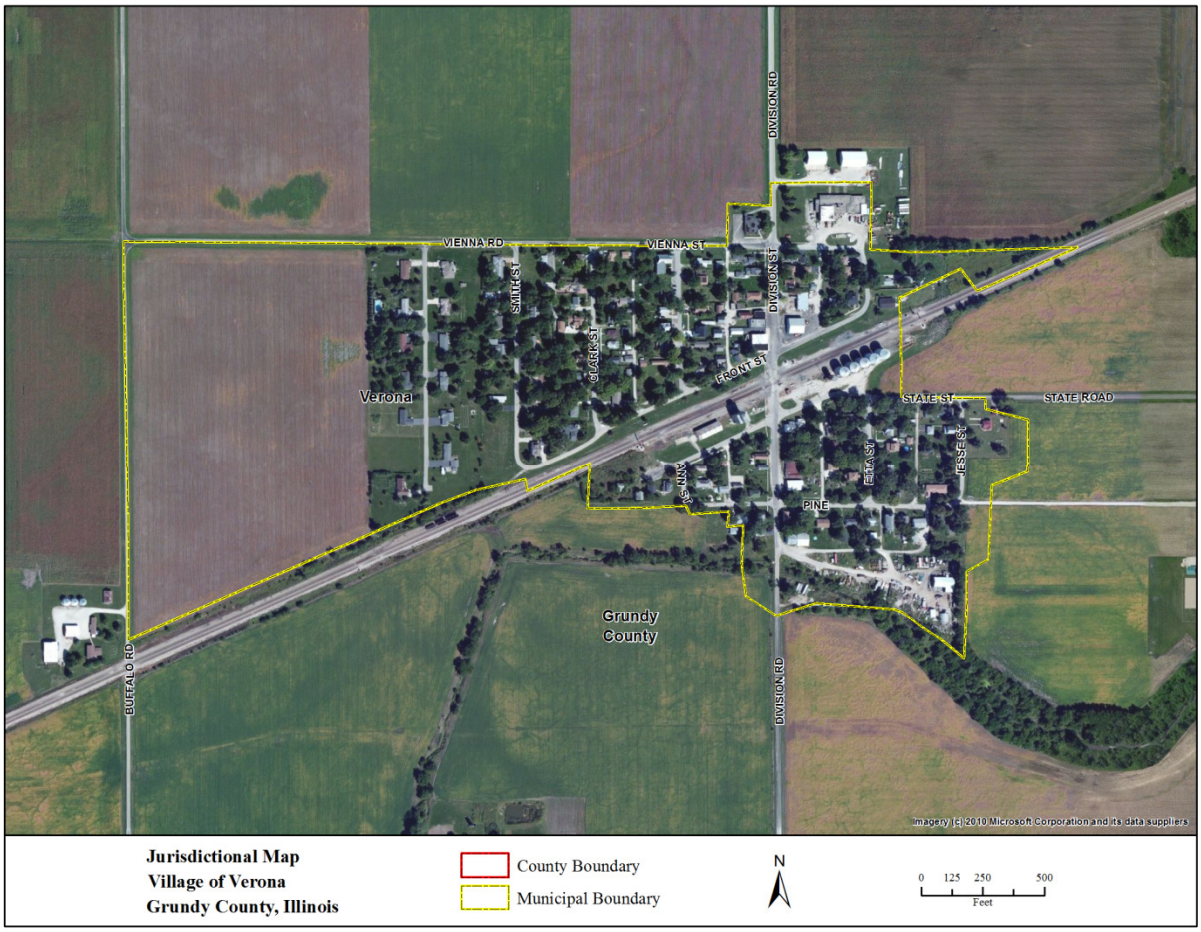
Seneca


MORRIS BLACKTOP
N 2950TH
E 27TH
E. 2575TH
N 2850TH
N 2850TH RD
E 28TH
E. 2709 TH
E. 2625TH
N 28TH
LaSalle County
N 2659TH
SENECA RD N2553
RIVER RD/N2553 RD
E 2650 TH RD.
E 28th Rd
N 23RD RD
SCOTT ST
LINCOLN
UNION ST
OAK
CASH
MAIN ST
DUPONT RD
JACKSON ST
LASALLE RD
NETTLE CREEK RD
LONG POINT RD
Seneca
6
Morris
STOCKDALE RD
BLUFF RD
NETTLE SCHOOL
WEIRZ RD
OLD STAGE RD
SOUTHMOR RD
SHABBONA RD
Grundy County
DUPONT RD
KINSMAN RD
INDIAN TRAIL RD
VERONA RD
GONNAM RD
GREER RD
BUFFALO RD
BENNETT RD
FARMER RD
17
Imagery (c) 2010 Microsoft Corporation and its data suppliers
Jurisdictional Map
Village of Seneca
Grundy County, Illinois
County Boundary
Municipal Boundary
N
0
2,500
5,000
10,000
Feet

South Wilmington



Verona


VIENNA RD
VIENNA ST
DIVISION RD
DIVISION ST
SMITH ST
CLARK ST
FRONT ST
Verona
STATE ST
STATE ROAD
ELM ST
JESSE ST
PINE
Grundy
County
BUFFALO RD
DIVISION RD
Imagery (c) 2010 Microsoft Corporation and its data suppliers
Jurisdictional Map
Village of Verona
Grundy County, Illinois
County Boundary
Municipal Boundary
N
0 125 250 500
Feet

Sample Jurisdictional Resolution

RESOLUTION _____

WHEREAS, the Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan has been prepared by the University of Illinois Extension working with the Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan Steering Committee; and,

WHEREAS, the Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, the **COUNTY OF GRUNDY** is a local unit of government that has afforded the citizens an opportunity to comment and provide input to the Plan and the actions in the Plan; and,

WHEREAS, the **GRUNDY COUNTY BOARD** has reviewed the Plan and affirms to participate in the Workgroup that will review the Plan every year and update it no less than every five years;

NOW THEREFORE, BE IT RESOLVED by the **GRUNDY COUNTY BOARD** that the **COUNTY OF GRUNDY** adopts the Grundy County Multi-jurisdictional Natural Hazards Mitigation Plan as this jurisdiction's Multi-hazard Mitigation Plan, and resolves to execute the actions in the Plan.

ADOPTED this _____ day of _____, 2013 at the meeting of the **GRUNDY COUNTY BOARD**.

_____

(Signature)

_____, Chair

(Print Name)

Grundy County Hazard Mitigation Steering Committee Attendance

Name	City	*6/14*	7/26	8/30	9/20	10/18	1/17
Paul Passafiume/ James Homa	Braceville	X	X	X			X
Tom Best/Matt Fritz	Coal City			X			
Terry Kernc	Diamond	X	X	X	X	X	X
Kevin McNamara	Dwight		X	X	X		X
Jim Lutz	Grundy County	X	X	X	X	X	X
Don Plott	Mazon		X		X		X
Ken Briley	Minooka		X	X	X	X	X
Robert Coleman	Morris	X	X	X	X	X	X
Jim Fielder	Seneca		X	X	X	X	X
Norman Lardi Jr.	South Wilmington		X	X			X
Tracy Schaedeke	Verona	X		X	X		
Craig Cassem	Grundy County		X	X	X		
Craig Meese	Grundy County	X		X	X	X	X
Heidi Miller	Grundy County	X					
Bill Cheshareck	Morris	X					
Kathleen Angelakos	Seneca						

Appendix 11- Grundy County Repetitive Loss Properties*

*"Repetitive Losses / BCX Claims" FEMA Community Information System. Federal Emergency Management Agency, 2012. Web. 20 December 2012

Community Name	Building Payments	Content Payments	Total Payments	Number of Losses	Number of Properties
Village of Channahon	$73,910.39	.00	$73,910.39	3	1
Village of Diamond	$33,846.95	.00	$33,846.95	2	1
Village of Dwight	$8,863.96	$3,314.60	$12,178.26	4	2
Unincorporated Grundy	$729,724.75	$346,710.90	$1,088,614.21	60	22
City of Morris	$60,347.68	$60,675.51	$121,026.19	6	3
Village of Seneca	$154,147.75	$126,055.82	$280,203.57	7	1