

# Village of Blue Mounds Natural Hazard Mitigation Plan

SUBMITTED BY THE VILLAGE OF BLUE MOUNDS, WI

**Contents**

**Plan Scope and Purpose .....3**

**Village of Blue Mounds Community Profile .....3**

**Hazard Identification and Risk Assessment .....5**

    Previous Hazard Events..... 7

    Asset Inventory ..... 8

    Critical Facilities ..... 9

    Vulnerability to Specific Hazards ..... 10

    Growth and Development Trends ..... 20

    Community Capability Assessment ..... 21

    National Flood Insurance Program Participation..... 23

**Public Involvement Activities .....24**

**Mitigation Strategy .....25**

    Mitigation Goals..... 27

    Mitigation Strategies..... 28

**Appendices.....31**

    Appendix A: Planning Process ..... 31

        Planning Process - Dane County Natural Hazard Mitigation Plan ..... 31

        Planning Process – Village of Blue Mounds Natural Hazard Mitigation Plan ..... 33

    Appendix B: Plan Adoption, Implementation, and Maintenance ..... 34

        Plan Adoption..... 34

        Implementation ..... 34

        Maintenance, Monitoring, and Updating ..... 35

    Appendix C: Blue Mounds Natural Hazard Mitigation Plan Steering Committee ..... 38



## **Plan Scope and Purpose**

This document represents the Natural Hazard Mitigation Plan for the Village of Blue Mounds in Dane County Wisconsin (“The Village” or “Blue Mounds” for the purposes of this plan). The plan is meant to address all relevant natural hazards and to comply with the Disaster Mitigation Act of 2000 (DMA 2000). The Village of Blue Mounds undertook this plan with assistance from Dane County Emergency Management.

Natural hazards present a risk to society, in terms of loss of life and economic loss. The Village of Blue Mounds Natural Hazard Mitigation Plan has the overall goal of lowering the risk of both. According to an independent report commissioned by the Federal Emergency Management Agency (FEMA) for every one dollar spent on mitigation actions, four dollars are saved from future natural disaster claims.<sup>1</sup> The Village of Blue Mounds has a history of undertaking hazard mitigation planning and actions. In 2009 the Village participated in the Dane County Natural Hazard Mitigation Plan (DCNHMP) and attached a local annex to the base County plan.<sup>2</sup> Since the DCNHMP’s passage in 2010, the Village has undertaken many of the mitigation actions it proposed in its 2010 local annex to the DCNHMP. The Village hopes to continue the progress it has made towards lowering its risk to natural hazards with the writing of this plan.

## **Village of Blue Mounds Community Profile**

The Village of Blue Mounds is located in the southwest quadrant of Dane County, north of the town of Perry, west of the town of Springdale, and south of the Town of Vermont. Land use is primarily residential. According to Dane County’s Land Information Office, the Village has a land area of .77 miles.

As of the 2010 Census, there are 855 people, 336 households, and 235 families residing in the Village. The population density is 936.9 people per square mile. There are 347 housing units at an average density of 380.2 units per square mile. The municipality population distributed by Dane County indicates that the 2015 population for the Village of Blue Mounds was 920 people, indicating 7.07% population growth over the past five years. Table 1 shows the population profile for the Village of Blue Mounds by age according to the 2010 Census.

---

<sup>1</sup> Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities. National Institute of Building Sciences. 2005.

<sup>2</sup> Dane County Natural Hazard Mitigation Plan. 2010.

**Table 1. Population Profile for Village of Blue Mounds**

<b>Subject</b>	<b>Number</b>	<b>Percent</b>
Total population	855	100.0
Under 5 years	63	7.4
5 to 9 years	67	7.8
10 to 14 years	83	9.7
15 to 19 years	40	4.7
20 to 24 years	24	2.8
25 to 29 years	28	3.3
30 to 34 years	58	6.8
35 to 39 years	66	7.7
40 to 44 years	61	7.1
45 to 49 years	95	11.1
50 to 54 years	72	8.4
55 to 59 years	69	8.1
60 to 64 years	55	6.4
65 to 69 years	22	2.6
70 to 74 years	17	2.0
75 to 79 years	15	1.8
80 to 84 years	15	1.8
85 years and over	5	0.6

Source: U.S. Census 2010

The median income for a household in the Village is \$57,768 and the median income for a family is \$68,472. The per capita income for the Village is \$25,626. 4.0% of the population and 1.4% of families are below the poverty line. Out of the total people living in poverty, 1.4% are under the age of 18 and 0% are 65 or older. 95.1% of the population has at least a high school degree, while 25.3% of the population holds at least a bachelor's level degree.

## Hazard Identification and Risk Assessment

A hazard identification and vulnerability analysis was completed by Dane County Emergency Management in conjunction with the Village of Blue Mounds. Information was gathered from a variety of sources including:

- Dane County Natural Hazard Mitigation Data Collection Handbook
- National Weather Service
- U.S. Census Bureau
- Dane County Land Information Office
- Others as noted

The first step in a hazard analysis is to identify which hazards the community is vulnerable to. Table 1 outlines the hazard identification for the Village of Blue Mounds based on the Data Collection Guide. The Data Collection Guide listed all of the hazards that could impact anywhere in Dane County. The purpose of this worksheet was to identify and rank the hazards and vulnerabilities specific to the jurisdiction. The Village's planning team members were asked to complete the matrix by ranking each category on a scale of 0 to 5 based on the experience and perspective of each planning team member. A ranking of 0 indicated "no concern" while a ranking of 5 indicated "highest concern". This matrix appears as Table 1. This matrix reflects the significance of the hazards relative to one another.

This matrix reflects that the Village of Blue Mounds is most vulnerable to flood, winter storms, windstorms, and tornados. The vulnerability established here is a qualitative assumption based on the impacts, geographic extent, probability of future occurrence, and magnitude/severity.

**Table 2 Vulnerability Assessment Matrix for the Village of Blue Mounds**

Hazard	Hazard Attributes			Impact Attributes						Total
				Primary Impact (Short Term - Life and Property)			Secondary Impact (Long Term – Community Impacts)			
	Area of Impact	Past History, Probability of Future Occurrence	Short Term Time Factors	Impact on General Structures	Impact on Critical Facilities	Impact on At-Risk Populations	Social Impact	Economic Impact	Severity Of Other Associated Secondary Hazards	
Dam/Levee	0	0	0	0	0	0	0	0	0	0
Extreme Cold	4	4	2	4	2	3	1	1	1	21
Extreme Heat	2	2	1	1	0	3	1	1	1	12
Drought	1	2	1	0	0	0	0	0	0	4
Expansive soils	0	0	0	0	0	0	0	0	0	0
Flood	4	3	3	3	4	4	3	3	3	26
Fog	2	2	2	0	0	0	0	0	0	6
Hail Storm	1	3	2	2	2	1	0	1	0	12
Landslide	1	1	1	2	2	2	0	0	0	9
Lightning	3	3	3	2	4	2	1	2	2	22
Tornado	5	5	5	5	5	5	5	5	5	45
Wildfire	3	1	1	1	1	1	1	1	1	11
Windstorm	4	4	4	4	4	4	4	4	4	36
Winter Storm	4	4	4	2	3	2	4	4	4	33

Source: Village of Blue Mounds Data Collection Guide 2015

## Previous Hazard Events

The events listed below in Table 3a are a listing of Village of Blue Mounds specific events that were listed in the National Climatic Database (NCDB) from January 1, 1990 to December 31, 2015 as severe weather events occurring within Blue Mounds. Table 3b shows all disaster declarations in Dane County. In the most recent disaster, the 2011 Blizzard, Blue Mounds received \$6,972 in disaster relief.

**Table 3a. Village of Blue Mounds Previous Hazard Events**

<b>Year/Date</b>	<b>Event Description</b>
<b>August 3, 1997</b>	Two rounds of <b>severe thunderstorms</b> brought 1.75 inch hail and winds up to 70 mph, causing severe damage to homes and area farms.
<b>May 16, 1999</b>	A <b>severe thunderstorm</b> caused flash flooding and brought strong winds that damaged several structures throughout Southern Wisconsin.
<b>March 8, 2000</b>	Unseasonably warm weather brought unseasonably strong <b>severe thunderstorms</b> and <b>hail</b> , as large as 1.75 inches in diameter.
<b>May 30, 2002</b>	<b>Severe thunderstorms</b> brought golf-ball sized hail and reports of a funnel cloud.
<b>May 5, 2004</b>	A <b>severe thunderstorm</b> with strong winds and heavy rain caused <b>flash flooding</b> in the Village of Blue Mounds.
<b>April 13, 2006</b>	Large <b>thunderstorms</b> impacted much of the Southern and Eastern parts of Wisconsin. The Village of Blue Mounds experienced these storms, and the 1.75-inch diameter <b>hail</b> that accompanied them.
<b>July 20, 2006</b>	<b>Severe thunderstorms</b> delivered <b>strong winds</b> to much of Dane County. Winds recorded at Blue Mounds reached 65 mph.
<b>August 5, 2007</b>	<b>Severe thunderstorms</b> brought heavy rains and minor <b>flash flooding</b> .
<b>February 6 and 7, 2008</b>	The village was impacted by a <b>winter storm</b> that moved through the County. The Village received \$2,609.24 in federal aid to assist with the costs of responding to the snow event.
<b>January, 2011</b>	A <b>blizzard</b> impacted the Village and caused the closing of roads and area schools.
<b>December, 2012</b>	<b>Blizzard</b> conditions in Blue Mounds caused the closing of roads and schools.
<b>June 22, 2013</b>	<b>Severe thunderstorms</b> brought heavy rain and winds as strong as 65 mph. Trees were knocked down in the Village.

Sources: Village of Blue Mounds Data Collection Guide 2015 and National Centers for Environmental Information (NCEI) Storm Events Database



**Table 3b. Dane County Disaster Declarations**

<b>Year</b>	<b>Disaster Type</b>	<b>Declaration Type</b>	<b>Damage Assessment</b>
1976	Ice Storm	Presidential Disaster	\$1.22 Million (Public Assistance)
1976	Drought	Presidential Emergency	\$625 Million (statewide)
1978	Flooding and TORNADOS	Presidential Disaster	\$180,000 (Public Assistance)
1984	TORNADOS	Presidential Disaster	\$775,394 (Public Assistance) \$11,168,220 (Individual Assistance) Dane and Iowa Counties combined
1990	Flooding and TORNADOS	Presidential Disaster	\$37,000 (Public Assistance) \$30,343 (Individual Assistance)
1991	Severe Storms (Windstorm)	Presidential Disaster	\$1.33 Million (Public Assistance)
1992	TORNADOS	Presidential Disaster	\$163,000 (Public Assistance)
1993	Flooding	Presidential Disaster	\$888,000 (Public Assistance) \$1,439,332 (Individual Assistance) \$22.6 Million (Total Damages)
1996	Flooding and Severe Storms	Local Sources	\$940,000 (Public Assistance) \$1,2248,684 (Individual Assistance) \$3.3 Million (Total Damages)
1998	High Winds and Severe Storms	Local Sources	\$586,000 (Public Assistance)
2000	Severe Storms (Windstorm) and Flooding	Presidential Disaster	\$940,000 (Public Assistance) \$1,248,684 (Individual Assistance) \$9.3 Million (Total Damages)
2000	Snow Emergency	Presidential Emergency	\$586,000 (Public Assistance)
2004	Severe Storms and TORNADOS	Presidential Disaster	\$1.5 Million (Public Assistance)
2005	Stoughton Tornado	State Disaster Fund	\$35 Million (Public Assistance)
2007	Flooding	Presidential Disaster	FEMA PDA- \$3,294,210 Private \$1,643,101 Public 758 homes impacted
2008	Snow Emergency	Presidential Emergency	\$1,439,206 (Public Assistance)
2008	Severe Storms, TORNADOS and Flooding	Presidential Disaster	\$1,533,659 (Public Assistance) \$1.76 Million (Individual Assistance) \$1.64 Million (Housing Assistance) \$120k other needs, 1,635 households requested aid Total damages \$35,789,723
2011	Blizzard	Presidential Disaster	\$1,810,699 (Public Assistance)

Source: Dane County Emergency Management

### **Asset Inventory**

Assets include the people, property, and critical facilities within the Village of Blue Mounds that are exposed to hazards in general. Inventories of property, essential infrastructure, and natural, cultural or historic resources help provide a comprehensive picture of the community and provide a method of assessing exposure to hazards by establishing the improved and total values, capacities and populations for these assets. It also forms the basis for estimating potential losses, where possible. Tables 4 and 5

represent population numbers for some of the most vulnerable populations within the Village of Blue Mounds. Table 6 represents an accounting of the exposure of general categories of property within the Village.

**Table 4. Village of Blue Mounds Residents with Disabilities**

<b>Disability Status</b>	<b>Number</b>	<b>Percent of Group with Disability</b>
Population Under 5 years old with a Disability	0	0%
Population 5-17 years old with a Disability	13	7.7%
Population 18-64 with a Disability	67	12.3%
Population Over 65 years old with a Disability	37	41.6%
<b>Total Population with Disability</b>	<b>117</b>	<b>13.4%</b>

Data Source: 2014 American Community Survey

**Table 5. Other Vulnerable Populations within the Village of Blue Mounds**

<b>Other Vulnerable Populations</b>	<b>Estimate</b>	<b>Percentage</b>
Families Below Poverty Level	22	9.4%
Individuals Below Poverty Level	94	10.9%
Of those poverty: Individuals Under 18	32	1%
Of those poverty: Individuals Over 65	11	10%
Total Population Over 5 who Speak English less than “very well”	9	1.1%
2014 ACS Total Population Estimate	870	100%

Data Source: 2014 American Community Survey

**Table 6. General Property Exposure Summary**

<b>Property Type</b>	<b>Total Parcel Count</b>	<b>Improved Parcel Count</b>	<b>Improved Values (\$)</b>	<b>Content (\$)</b>	<b>Total Value (\$)</b>
Residential	220	196	28,853,900	14,426,950	43,280,850
Commercial	25	24	7,941,100	3,970,550	11,911,650
Agricultural	13	2	0	0	0
Other	84	0	0	0	0
Industrial	1	1	100,500	50,250	150,750
Institutional/Government	11	4	435,600	217,800	653,400
Utilities	1	0	0	0	0
<b>TOTAL</b>	<b>355</b>	<b>227</b>	<b>37,331,100</b>	<b>18,665,550</b>	<b>55,996,650</b>

Data Source: Dane County Land Information Office

### **Critical Facilities**

The Village of Blue Mounds has identified the following critical facilities important to protect from disaster impacts. These are collected in Table 4, which is based on the Village of Blue Mounds’ Data Collection Guide

**Table 7. Critical Facilities**

Name of Asset	Type*	Replacement Value	Occupancy	Hazard Specific issues
Village hall-PD & Admin office	EI	\$500k	NA	NA
Wastewater treatment	EI	\$2 million	NA	NA
Midwest Bio-ag	HM	Unknown	Unknown	Hazardous Materials
Bike trail bridge	VF	\$250k	NA	NA
Cave of the Mounds	NA			
DPW/storage 10961 CTH ID	EI	\$200K	NA	NA
Well #3-3050 Mounds Rd	EI	\$500k	NA	Na
Salt shed-DPW	EI	\$100K	NA	NA
2 outbuildings @ DPW	EI	\$200k	Na	Na
Park shelter on Mounds Rd	EI	\$250k	NA	NA

Data Source: Dane County Land Information Office and Village of Blue Mounds 2016 Data Collection Guide

\*EI = Essential Infrastructure, HM = Hazardous Materials, VF = Vulnerable Facility, NA = Natural Asset

**Vulnerability to Specific Hazards**

This section details vulnerability to the specific hazards this plan will address. The previous inventory tables quantify what is exposed to the various hazards within the Village of Blue Mounds. The following table summarizes the vulnerability the Village of Blue Mounds has to particular hazards. For the purposes of this plan severe thunderstorm encompasses the hazards of hail, high wind, and lightning. severe winter storm and severe cold are also combined into one hazard. All other hazards listed in Table 2 that do not appear in Table 8 are not included due to little concern over their impacts.

**Table 8. Vulnerability to Specific Hazards**

Hazard	Populations	Structures	Critical Facilities	Future Damage Potential	Overall Risk Rating
<b>Flooding</b>	Low	Low	Low	Low	<b>Low</b>
<b>Severe Thunderstorm</b>	Moderate	Moderate	Moderate	Moderate	<b>Moderate</b>
<b>Severe Winter Storm and Severe Cold</b>	Moderate	Low	Moderate	Moderate	<b>Moderate</b>
<b>Severe Heat</b>	Moderate	Low	Low	Low	<b>Moderate</b>
<b>Tornado</b>	High	High	High	High	<b>High</b>

The following sections detail the hazards facing the Village of Blue Mounds as addressed in this plan.

### ***Flood***

The flood risk for the Village of Blue Mounds is low. There are no mapped floodplains within the Village of Blue Mounds. Thus, there are no critical facilities vulnerable to flooding. Furthermore, no future development is planned to infringe on the floodplain. Figure 1 shows future development plans for the Village. The FEMA Flood Map for the Village of Blue Mounds is **55025C0340G**, effective on 1/02/2009.

### ***Structures in the Floodplain***

Some assets are specifically vulnerable to floods, due to their location. According to the DFRIM data, there are no properties in either the 100- or 500-year floodplain within the Village of Blue Mounds.

### ***Repetitive Loss Properties and Flood Insurance Policies***

There are no repetitive loss properties in the Village of Blue Mounds.

Figure 1a. Future Land Use Map

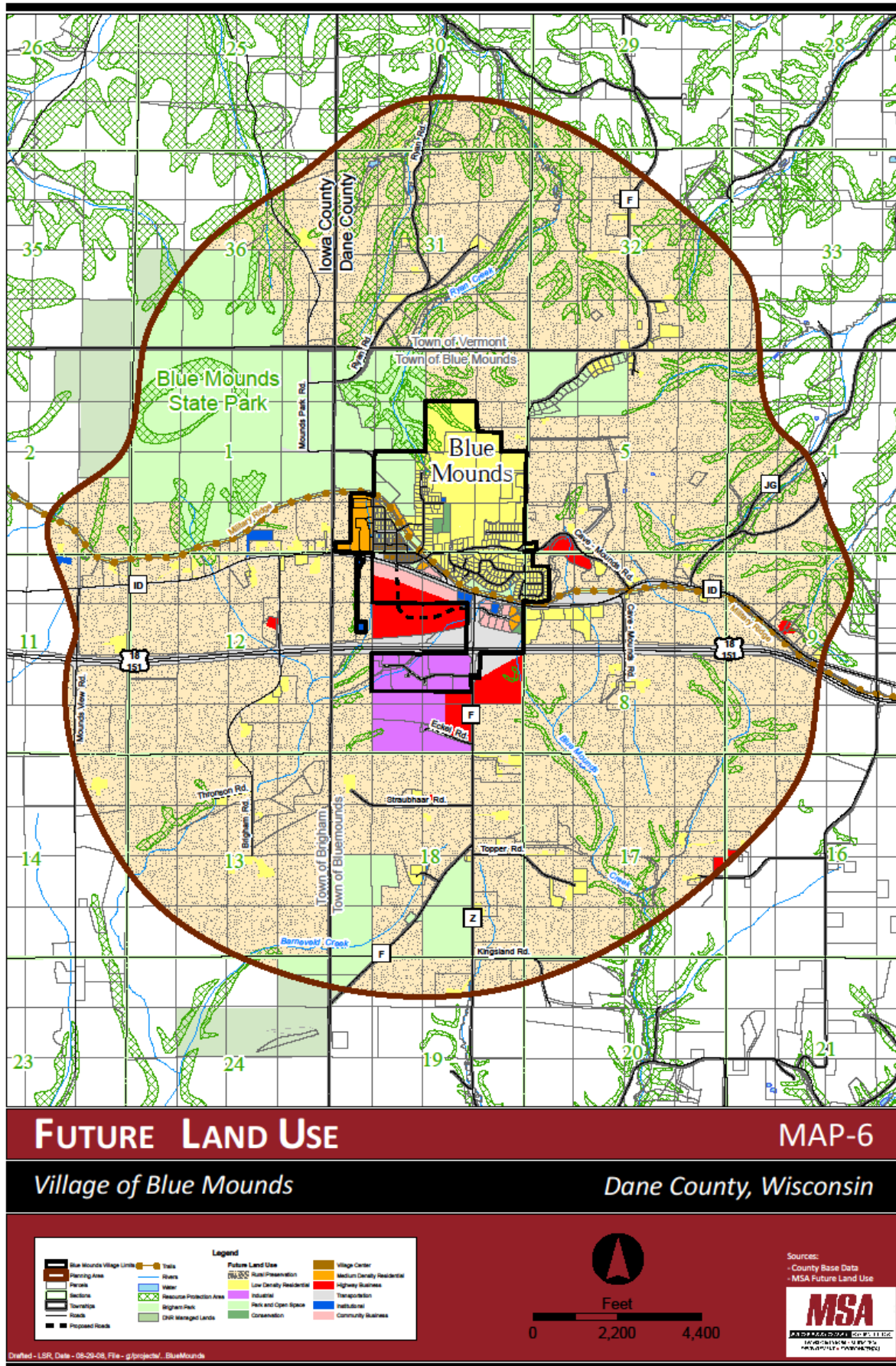
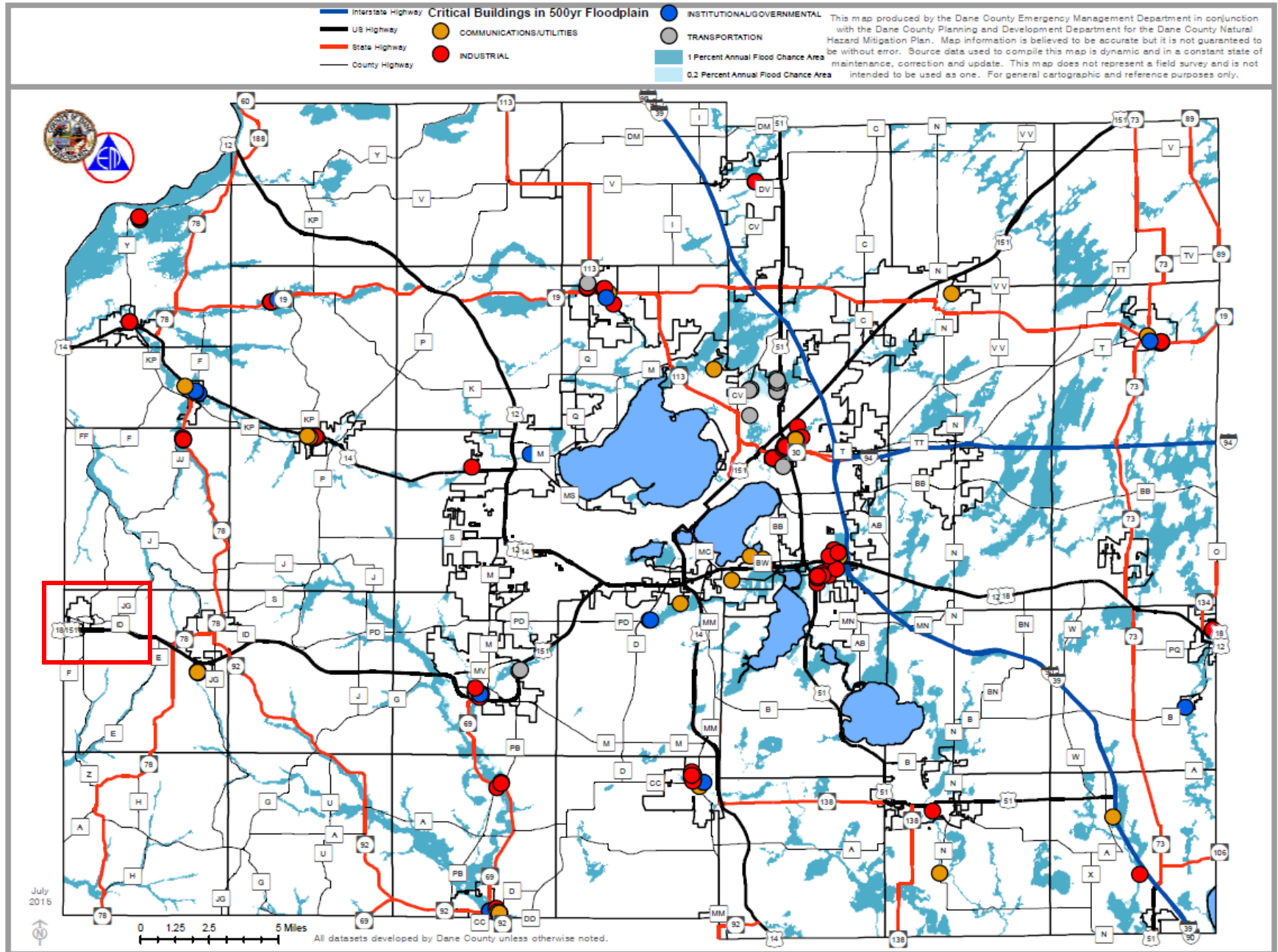


Figure 1b. Dane County Critical Facilities within 500-Year Floodplain

Village of Blue Mounds within red box on map. The Village does not have any critical facilities within the 500-year floodplain.





## **Tornado**

Tornadoes pose a major threat to the Village of Blue Mounds. Roughly 35% of the Village’s residents live in mobile homes, without access to adequate tornado shelter<sup>3</sup>. The damage done by any one tornado is a function of the storm’s magnitude and where it strikes. The largest tornadoes can have wind speeds that reach up to 200 miles per hour (mph), while the smallest tornadoes have winds from 65-85mph. These winds can cause catastrophic damage to a community if there is a direct strike.<sup>4</sup>

Blue Mounds has a relatively low history of tornadoes, but the region as a whole has a large history of these storms. Dane County has recorded more tornadoes since 1844 than any other county in the State of Wisconsin (Figure 2). This creates a situation in which, when looking at Blue Mounds alone, there may appear to be a low historical probability of a tornado hitting the Village, but when taken as a part of the whole region, the historical risk rises significantly.

Table 9 below estimates the percent area of the jurisdiction that could be impacted based on the average sized tornado (EF2) in Dane County. This average size tornado for the County was calculated in the 2010 Dane County Natural Hazard Mitigation Plan. It is a tornado with a length of 6.2 miles, and width of 104 yards. In order to calculate the property damaged by the average tornado, the number of structures and improved parcel value was calculated for the Village of Blue Mounds. The average tornado area was divided the municipality’s area, resulting in a percent of area impacted. Multiplying the improved value plus content value of all structures by the percent affected area yielded the total exposure value of affected property. Multiplying the affected area by the number of improved parcels yields an estimate of the number of structures impacted. The estimated losses were calculated by multiplying the percentage of area impacted by the total exposed property values, then multiplying by 100% for the high damage range, 50% for the moderate damage range, and 25% for the low damage range. The loss ratio is the estimated moderate loss divided by the total exposed value. The higher the ratio, the more difficult it would be for the community to recover from this sample tornado event.<sup>5</sup>

This is a rough estimation of potential damages based on Dane County GIS data meant only to give a general idea of risk to tornado. In an actual tornado these numbers would vary based on the magnitude of the tornado and where it struck the Village. The loss ratio of 48.1% is relatively high and suggests that a direct hit to the Village of Blue Mounds from this sample tornado would make recovery difficult. For this reason, the vulnerability of the Village of Blue Mounds to tornadoes is considered **high** across all categories.

**Table 9. Tornado Damage Assessment**

<b>% Area of Impact</b>	<b>Improved Parcel Count</b>	<b>Affected Structure Estimate</b>	<b>Total Exposed Value</b>	<b>Estimated Loss \$ - High Damage Range</b>	<b>Estimated Loss \$ - Moderate Damage Range</b>	<b>Estimated Loss \$ - Low Damage Range</b>	<b>Loss Ratio for Moderate Damage Range</b>
96.26%	367	353	208,783,950	200,966,935	100,483,467	50,241,733	48.1%

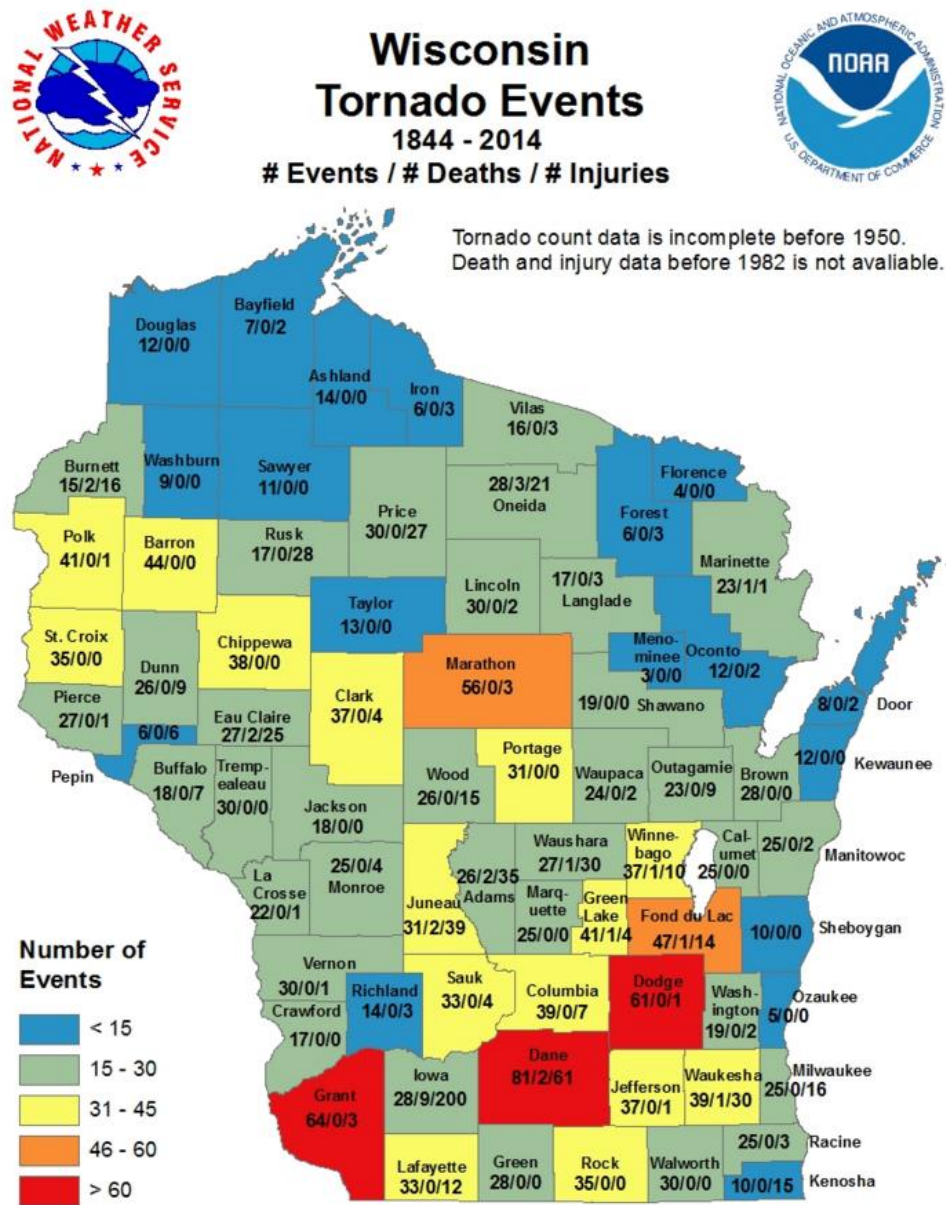
Source: Dane County LIO and DCEM Analysis

<sup>3</sup> Village of Blue Mounds Data Collection Guide 2015

<sup>4</sup> American Meteorological Society Glossary, 2013

<sup>5</sup> Method taken from 2010 Dane County Natural Hazard Mitigation Plan

Figure 2

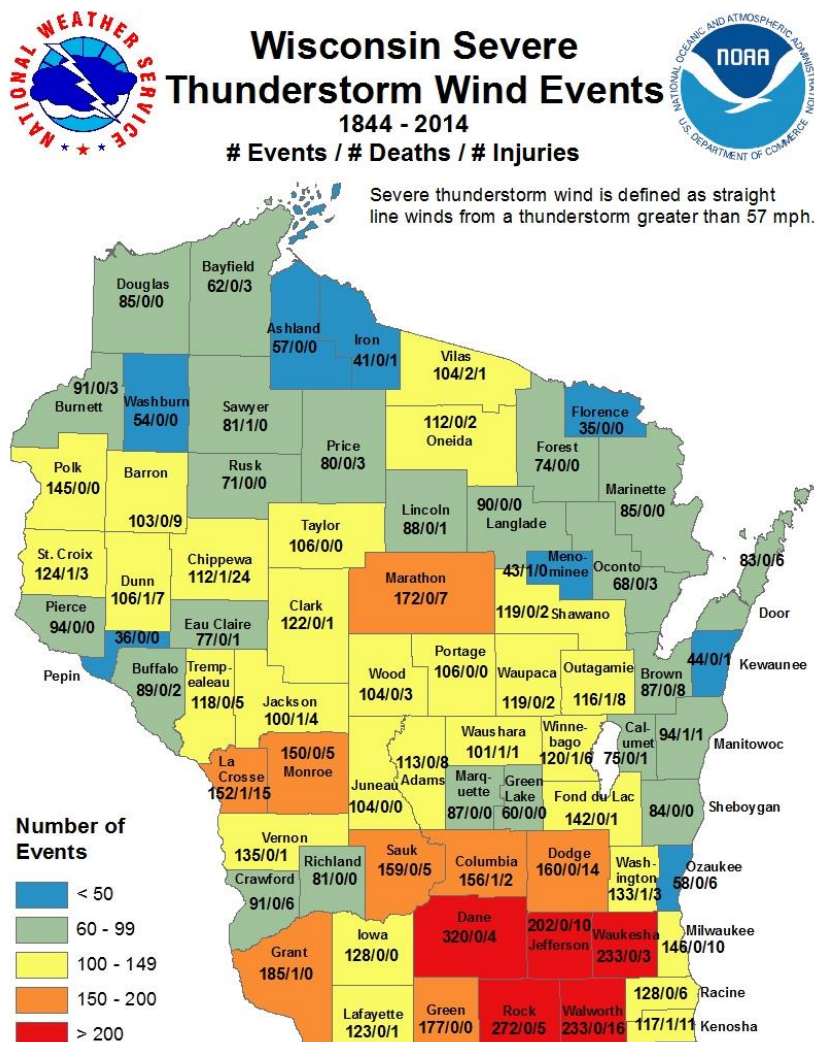




### Severe Thunderstorm

Severe thunderstorms and the high winds and hail they bring are a persistent threat to the Village of Blue Mounds. They occur several times per year, and often several times a month in during the summer. Not every thunderstorm that impacts the Village rises to the level of severe thunderstorm, however, the frequency with which storms occur, including those that cause damage raises the risk level of the Village to severe thunderstorms in terms of historic probability. Figures 3, 4, and 5 show that Dane County has recorded either the highest or second highest number of hail, lightning, and high wind events in Wisconsin.<sup>6</sup> This high amount of storms regionally, suggests Blue Mounds is also highly likely to experience severe thunderstorms within a given year.

Figure 3



Source: National Weather Service

<sup>6</sup> National Weather Service- Green Bay office, Wisconsin Severe Weather Stats

Past events have caused damage on numerous occasions, usually related to wind and hail. Damage has been to crops and homes primarily, with no critical facilities being reported as damaged in past events.

While thunderstorms strike the Village every year, not every occurrence causes damage. The threat of lightning strike exists with each thunderstorm, however, the lack of records indicating damage due to lightning strikes suggests that structures in the Village are well protected against lightning.

The frequency with which severe thunderstorms occur in Blue Mounds, combined with the risk of high winds and severe hail that can occur with storms that occur throughout the summer warrants an overall risk of **moderate** for the Village of Blue Mounds to severe thunderstorms.

Figure 4



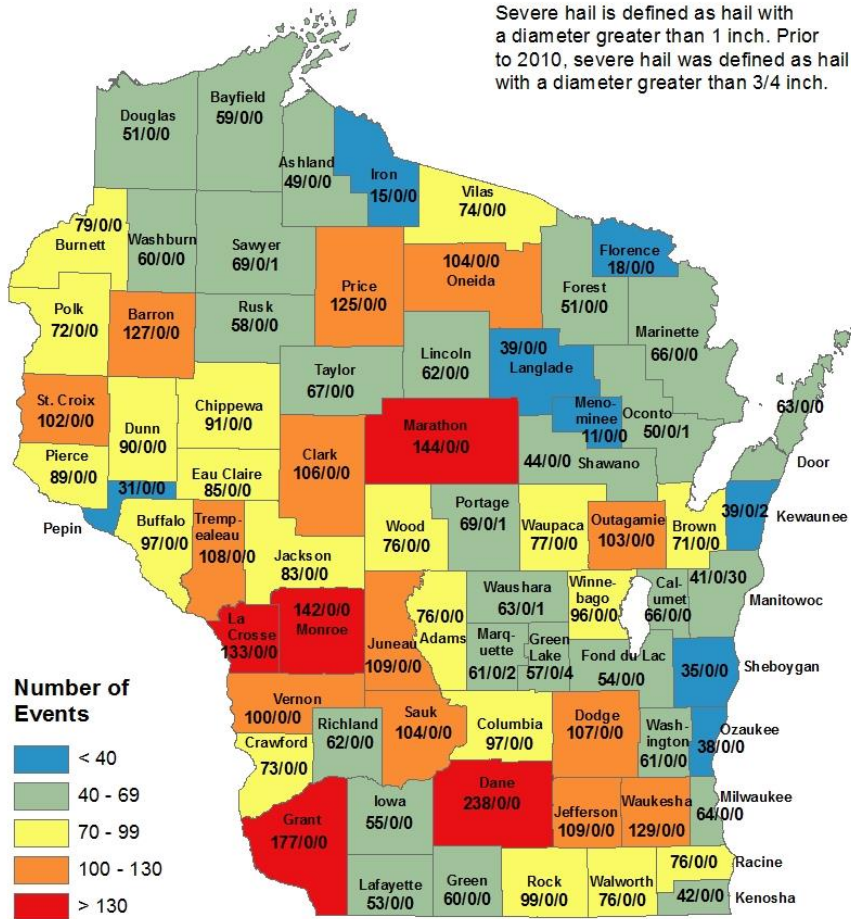
## Wisconsin Severe Hail Events

1844 - 2014

# Events / # Deaths / # Injuries



Severe hail is defined as hail with a diameter greater than 1 inch. Prior to 2010, severe hail was defined as hail with a diameter greater than 3/4 inch.



Source: National Weather Service

Figure 5



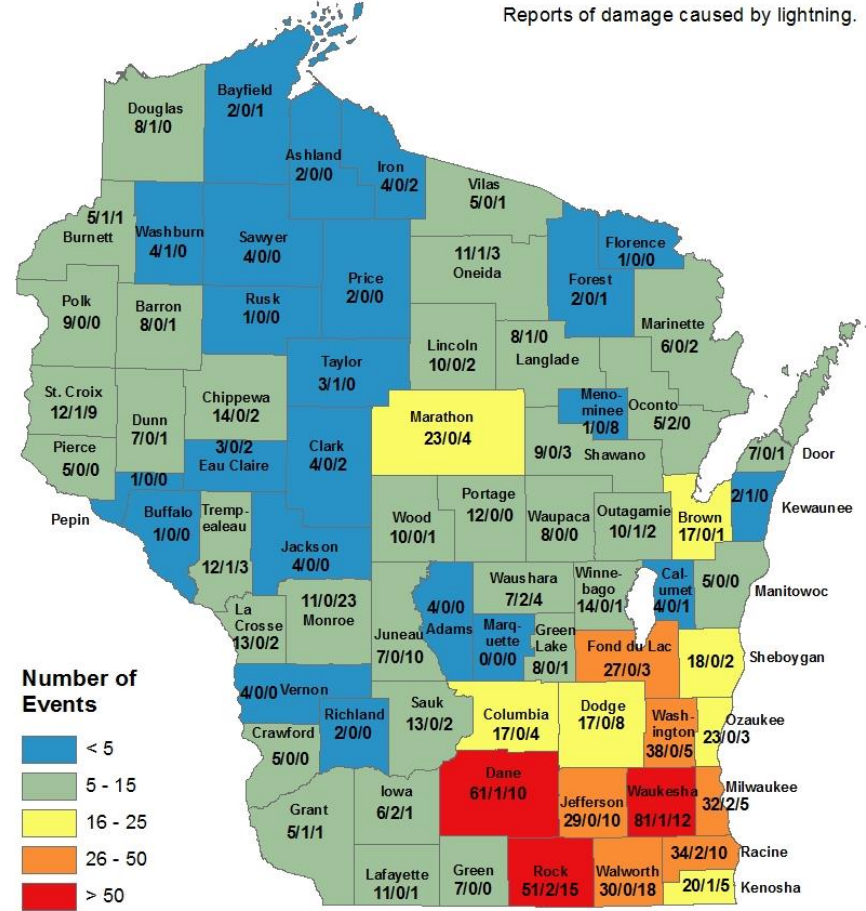
## Wisconsin Lightning Events

1844 - 2014

# Events / # Deaths / # Injuries



Reports of damage caused by lightning.



### ***Severe Winter Storm and Severe Cold***

Severe winter weather, encompassing winter storms, blizzards, and severe cold, are an annual threat to the Village of Blue Mounds. According to a 2014 National Health Statistics Report, deaths due to severe cold outpace those that are caused by heat.<sup>7</sup> This was especially true for people over the age of 65. Snow and ice put populations and infrastructure at risk.

Ice storms are of particular concern due to the damage they can cause damage to critical infrastructure. Ice accumulation on electrical lines causing collapse or on trees near power lines, that cause branches to collapse onto electrical lines cause several hazardous situations. Live wires on the ground are extremely dangerous and loss of electricity during winter puts residents at risk to cold conditions. Risk to general structures is somewhat lower, with the main threat being frozen pipes.

Transportation systems likely create the largest vulnerability for the Village in regards to severe winter weather. Snow and ice can cause dangerous driving conditions on area roads, if high winds occur in conjunction with winter precipitation, conditions can become even worse. Two County highways, ID and F, and one U.S. Highway, 18/151, pass through the Village. Annual average daily traffic counts for the County highways in Blue Mounds range from 1400 vehicles per day, to 2600 on the County highways within the jurisdiction's borders.<sup>8</sup> If a winter storm would strike on a peak traffic day, the vulnerability may be even higher as many commuters pass through Blue Mounds on U.S. 18/151 on their way to and from nearby Madison. In Dane County from 2010-mid 2015, 4,260 crashes occurred within Dane County due to snowy conditions. While Blue Mounds makes up only a small percentage of the County as a whole, the a rate of nearly 1,000 crashes per year due to snow underscores how dangerous these storms can be for motorists in the region.

Elderly and disabled populations can also have a higher vulnerability to winter conditions, especially if they are socially isolated. Roughly eight percent of Blue Mounds residents are above 65 years old, and of those 41% report some kind of disability according to U.S. Census Bureau data. 13.4% of the Village's total number residents are disabled. Other vulnerable resident statistics can be found in the Vulnerable Populations tables (Tables 4 and 5). These residents may not have the ability to clear snow or leave their home during a winter storm. This is an especially dangerous situation if a winter storm causes a loss of electrical power.

Severe winter storms and cold are an annual occurrence within the Village. Residents and Village officials are generally ready to address these conditions when they arise, however their inevitability still creates a scenario in which there is great risk to the general public and to vulnerable populations. For these reasons, severe winter storms and cold have been given a rating of **moderate** risk in this plan.

---

<sup>7</sup> Berko, J. (2015). Deaths attributed to heat, cold, and other weather events in the United States, 2006-2010. *Public Health*.

<sup>8</sup> WisDOT Traffic Count Interactive Map, 2000-2010

**Extreme Heat**

Extreme heat is a considerably less dramatic hazard than others included in this plan, but nonetheless warrants serious consideration. Severe heat is dangerous when it occurs over an extended period and creates an overexposure for people who cannot shelter from the heat. The extended exposure creates a situation in which the body must work harder to maintain normal temperatures. This can be especially dangerous for the very young and the elderly, even more so when they do not have access to a cooler environment.<sup>9</sup> Heat related illness can also occur to those who perform strenuous work in the warm environment and thus creates additional vulnerability to those who primarily work outdoors during the summer months.

Blue Mounds is a fairly small Village, and as such, is fortunate that extreme heat will not likely be amplified by an urban heat island effect. However, nearly 35% of its residents live in mobile homes and may not have adequate access to air conditioning. Other populations listed in Tables 4 and 5 are also at increased vulnerability to extreme heat.<sup>10</sup> Despite these vulnerabilities, Dane County as a whole has recorded only one death directly attributable to excessive heat since 2000.<sup>11</sup> Blue Mounds does not currently maintain a cooling structure for its residents during heat waves. Critical facilities and general structures are of less concern in regards to extreme heat vulnerability.

**Growth and Development Trends**

Growth and development may open a community to increased vulnerability to natural hazards. Planned land use is shown in Figure 1, in relation to the flood hazard. Table 8 illustrates how the Village of Blue Mounds has grown in terms of population and number of housing units between 2000 and 2008. Table 9, drawn from the Demographics Services Center at the Wisconsin Department of Administration, shows population projections through 2025.

**Table 10 Village of Blue Mounds Change in Population (2000-2015) and Housing Units (2000-2014)**

2000 Population	2010 Population	2015 Population Estimate	Percent Change (%) 2000-2015	2000 Number of Housing Units	2010 Number of Housing Units	2014 Housing Units Estimate (ACS)	Percent Change (%) Housing Units 2000-2014
708	855	920	29.9%	297	347	351	18.1%

Data Source: Wisconsin Department of Administration, U.S. Census Bureau – Census 2010 and American Community Survey (ACS) 2014  
 \*Housing data to 2014 only due to data availability from ACS

**Table 11. Population Projections 2015-2035**

Change in Population	2015	2020	2025	2030	2035
Increase in Population	920	1012	1032	1052	1073

Data Source: Demographics Services Center, Wisconsin Department of Administration, 2004  
 Table constructed using annual percentage of growth rate, based on 2010-2015 population growth.

<sup>9</sup> U.S. Department of Homeland Security. Ready.gov – Extreme Heat

<sup>10</sup> Blue Mounds Data Collection Guide 2015

<sup>11</sup> National Center for Environmental Information Storm Events Database

## Community Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment summarizes regulatory mitigation capabilities, administrative and technical mitigation capabilities, and fiscal mitigation capabilities for the Village of Blue Mounds.

### *Mitigation Capabilities Summary*

Table 12 lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities, or by themselves contribute to reducing hazard losses. The table also indicates which of these tools are currently utilized in the Village of Blue Mounds.

**Table 12. Village of Blue Mounds Regulatory Mitigation Capabilities**

<b>Regulatory Tool (ordinances, codes, plans)</b>	<b>Yes/No</b>	<b>Comments</b>
<b>General or Comprehensive plan</b>	Yes	Updated in 2015
<b>Zoning ordinance</b>	Yes	Updated since 2009
<b>Subdivision ordinance</b>	Yes	
<b>Growth management ordinance</b>	No	
<b>Floodplain ordinance</b>	Yes	No Special Flood Hazard Areas in Village boundaries
<b>Other special purpose ordinance (stormwater, steep slope, wildfire)</b>	Yes	Updated since 2009
<b>Building code</b>	Yes	
<b>Fire department ISO rating</b>	Yes	
<b>Erosion or sediment control program</b>	Yes	
<b>Stormwater management program</b>	Yes	
<b>Site plan review requirements</b>	Yes	
<b>Capital improvements plan</b>	Yes	Updated since 2009
<b>Economic development plan</b>	Yes	Updated since 2009
<b>Local emergency operations plan</b>	Yes	Updated in 2015
<b>Other special plans</b>	Yes	Updated in 2015
<b>Flood insurance study or other engineering study for streams</b>	No	
<b>Elevation certificates (for floodplain development)</b>	No	

Data Source: Village of Blue Mounds Data Collection Guide 2015

Table 13 identifies the personnel responsible for mitigation and loss prevention activities as well as related data and systems in the Village of Blue Mounds.

**Table 13 Responsible Personnel and Departments for the Village of Blue Mounds**

<b>Personnel Resources</b>	<b>Yes/No</b>	<b>Department/Position</b>
<b>Planner/engineer with knowledge of land development/land management practices</b>	Yes	Town and Country Engineering
<b>Engineer/professional trained in construction practices related to buildings and/or infrastructure</b>	Yes	Town and Country Engineering
<b>Planner/engineer/scientist with an understanding of natural hazards</b>	Yes	Town and Country Engineering
<b>Personnel skilled in GIS</b>	Yes	Dane Co
<b>Full time building official</b>	No	Part time inspectors
<b>Floodplain manager</b>	No	Dane Co
<b>Emergency manager</b>	Yes	Blue Mounds Police Chief
<b>Grant writer</b>	Yes	Village Clerk and Police Chief
<b>GIS Data Resources (Hazard areas, critical facilities, land use, building footprints, etc.)</b>	Yes	Dane Co
<b>Warning Systems/Services (Reverse 9-11, cable override, outdoor warning signals)</b>	Yes	Dane Co

Data Source: Village of Blue Mounds Data Collection Guide, 2015

Table 14 identifies financial tools or resources that the Village of Blue Mounds could potentially use to help fund mitigation activities.

**Table 14 Financial Resources for the Village of Blue Mounds**

<b>Financial Resources</b>	<b>Accessible/Eligible to Use (Yes/No)</b>	<b>Comments</b>
<b>Community Development Block Grants</b>	Yes	
<b>Capital improvements project funding</b>	Yes	
<b>Authority to levy taxes for specific purposes</b>	Yes	
<b>Fees for water, stormwater, sewer, gas, or electric services</b>	Yes	
<b>Impact fees for new development</b>	Yes	
<b>Incur debt through general obligation bonds</b>	Yes	
<b>Incur debt through special tax bonds</b>	Yes	
<b>Incur debt through private activities</b>	No	

Data Source: Village of Blue Mounds Data Collection Guide, 2015

### **National Flood Insurance Program Participation**

Table 15 reflects the NFIP status for the Village of Blue Mounds. The Village does not have a mapped flood hazard area, but The Village recently joined the NFIP in May of 2009 so that residents could get access to flood insurance.

**Table 15 Floodplain Regulation Program Status as of 2/2016**

<b>Floodplain Ordinance</b>	<b>Comments</b>	<b>Dane County FIRM Panels</b>	<b>NFIP Participation</b>	<b>Initial FHBM Identified</b>	<b>Initial FIRM Identified</b>	<b>Current Effective Map Date</b>	<b>Reg-Emer Date</b>
Yes		350	Yes		(NSFHA)	(NSFHA)	5/14/2009

Data Source: Dane County GIS, FEMA NFIP Community Status Book Report, updated 2/2016



## **Public Involvement Activities**

During the formation of this plan Blue Mounds residents had several opportunities to give input regarding natural hazard mitigation. First, while Blue Mounds' plan was still scheduled to be an annex to the Dane County Natural Hazard Mitigation Plan, the community participated in the County public outreach process. This was a series of public workshops held around the County, including one in the Town of Montrose, near the Village of Blue Mounds, in which an overview of natural hazard mitigation was given and the County plan was discussed. Residents were then given the opportunity to give their input on mitigation actions that could be taken, and filled out informational surveys that assessed the level of risk the perceived within their own community.

The second opportunity was Blue Mounds specific. A public meeting was held at the Blue Mounds Village Hall on April 20, 2016. The meeting was advertised on the Village Hall and proper meeting notice was given. Four community residents were in attendance. Dane County Emergency Management (DCEM) staff led the meeting and gave a brief overview of natural hazard mitigation planning and the purpose of the meeting. Following this, the floor was opened for questions and comments. The meeting primarily consisted of questions and discussion regarding hazard mitigation grant funding and how it related to the Village. Further discussion revolved around tornado shelters and the process other Dane County communities have followed to put in place a tornado shelter through hazard mitigation grant funding.

## Mitigation Strategy

This section details the mitigation goals and strategies of the Blue Mounds Natural Hazard Mitigation Plan. These are the ways in which natural hazard mitigation will take place in the Village of Blue Mounds. The Village has completed several mitigation actions since its last plan. Other mitigation strategies have been removed from consideration. Table 16 outlines these actions.

**Table 16. Mitigation Strategies from 2009 Village of Blue Mounds Natural Hazard Mitigation Plan Status**

<b>Goal</b>	<b>Year Goal Was Listed</b>	<b>Completed/ Continuing/Deleted</b>	<b>Comments</b>
<b>Supply NOAA All Hazards Radios to Village residents.</b>	2009	Completed	Village of Blue Mounds has participated in the County’s distribution of NOAA Weather Radios.
<b>Establish and foster a village communications/warning and immediate assistance system, especially directed to most at risk community residents.</b>	2009	Completed	Newly created emergency response plan in 2015 that addresses these needs.
<b>Identify locations of the nearest secure natural hazard or general emergency shelters for various types of emergency events and inform residents about them.</b>	2009	Updated	Shelters have been identified, due to the lack of a tornado, heating, and cooling shelter, a new strategy to build a shelter is listed in this plan.
<b>Determine need for modification of an existing building or construction of a new building to serve as an emergency shelter during tornado, high wind, power outage and extreme heat or cold events.</b>	2009	Continuing	See Mitigation Strategy 2 in Table 17 below

Goal	Year Goal Was Listed	Completed/ Continuing/Deleted	Comments
<p align="center"><b>Assess need for back-up electrical power generators for government buildings, sewer system, and water system</b></p>	<p align="center">2009</p>	<p align="center">Completed</p>	<p>The Village completed a thorough assessment of electrical needs during an emergency power outage. The Village has purchased two generators that can accommodate these needs.</p>
<p align="center"><b>Establish a Village tie-down ordinance for all mobile/manufactured homes and bring all mobile/manufactured homes in the Village in compliance with tie-down provisions.</b></p>	<p align="center">2009</p>	<p align="center">Completed</p>	<p>Several older ordinances and new ordinances were created and updated to address this issue.</p>
<p align="center"><b>Continue to implement sound floodplain management practices through continued compliance with the National Flood Insurance Program, to include floodplain ordinance enforcement and periodic review, promoting the benefits of flood insurance, and continued staff training and development in floodplain management.</b></p>	<p align="center">2009</p>	<p align="center">Continuing</p>	<p>The Village of Blue Mounds has no mapped floodplains, but continues to monitor all development to ensure that flood vulnerability remains low for the Village.</p>

## **Mitigation Goals**

The goals of this natural hazard mitigation plan are the broad statements that shape the overall mitigation strategy for the Village of Blue Mounds. These statements are consistent with the goals of both the Dane County Natural Hazard Mitigation Plan and the State of Wisconsin Natural Hazard Mitigation Plan. These goals are as follows:

- Minimize human, economic, and environmental disruption from natural hazards.
- Educate and encourage property owners to take action to decrease their vulnerability to the impacts of natural hazards.
- Encourage hazard mitigation planning and incorporate that planning into other related plans.
- Facilitate and coordinate solutions to multi-jurisdictional issues that involve government, citizens, stakeholders, and policy-makers at all levels.
- Improve the disaster resilience of existing buildings, structures, critical facilities, as well as infrastructure whether new construction, expansion, or renovation.

## Mitigation Strategies

The mitigation strategies listed below in Table 17 are the actual actions the Village of Blue Mounds will take to lessen the risk natural hazards pose to the community. Further details on these actions are below Table 17.

**Table 17. Village of Blue Mounds Mitigation Strategies**

Mitigation Strategy	Lead Implementing Agency	Supporting Agencies	Possible Funding	Implementation Timeline
<p><b>Continue to implement sound floodplain management practices through continued compliance with the National Flood Insurance Program, to include floodplain ordinance enforcement and periodic review, promoting the benefits of flood insurance and continued staff training in floodplain management.</b></p>	<p>Village of Blue Mounds</p>	<p>Dane County Emergency Management, Dane County Planning and Development, Association of State Floodplain Managers, Dane County Land and Water Conservation Department, Wisconsin Department of Natural Resources</p>	<p>Staff Time</p>	<p>Perpetual</p>
<p><b>Construct a multi-hazard shelter that is built to FEMA P-361 tornado shelter standards. Facility should also be able to serve as a heating and cooling shelter for the community.</b></p>	<p>Village of Blue Mounds</p>	<p>Dane County Emergency Management, Wisconsin Emergency Management, Federal Emergency Management Agency</p>	<p>Hazard Mitigation Program Grant Funding, Staff Time</p>	<p>As soon as possible. Preliminary plans are underway. This plan represents one of the first steps in applying for funding.</p>

**Objective 1:** Continue to implement sound floodplain management practices through continued compliance with the National Flood Insurance Program, to include floodplain ordinance enforcement and periodic review, promoting the benefits of flood insurance, and continued staff training and development in floodplain management.

Steps:

- 1) Evaluate through the existing staff, County planning staff, and additional DNR staff if necessary, the regulatory deficiencies and enforcement shortcomings in flood-related ordinances and programs (see related County objective);
- 2) Periodically update ordinances as necessary
- 3) Ensure that stop work orders and other means of compliance are being used as authorized by each ordinance;
- 4) Suggest changes to improve enforcement of and compliance with regulations and programs;
- 5) Encourage floodplain management staff to become Certified Floodplain Managers (CFM) or maintain their CFM status.
- 6) Participate in Flood Insurance Rate Map updates by adopting new maps or amendments to maps
- 7) Utilize recently completed Digital Flood Insurance Rate maps in conjunction with GIS to improve floodplain management, such as improved risk assessment and tracking of floodplain permits.
- 8) Promote and disperse information on the benefits of flood insurance, with assistance from partners such as the County, WDNR, or ASFPM.

Lead Implementing Agency: Local zoning administrator.

Supporting Agencies:

- Dane County Planning and Development
- Lakes and Watershed Commission
- Land Conservation Department
- Association of State Floodplain Managers
- Wisconsin Department of Natural Resources

Possible Funding and Technical Assistance:

- Staff Time

Timeline: Ongoing

Priority: High

Estimated Costs: Low; can be accomplished with existing staff and within existing department budget.

**Objective 2:** Construct a multi-hazard shelter that is built to FEMA P-361 tornado shelter standards. Facility should also be able to serve as a heating and cooling shelter for the community.

Steps:

- 1) Evaluate the full-extent of the need for a multi-hazard shelter within the Village. Seek public input to gauge community support for project.
- 2) Assess all possible alternatives to construction of a shelter to meet need and consider adopting these options if more feasible and effective than a shelter.
- 3) Locate a suitable shelter location. The size and needs determined in step one would be an indicator for the suitable shelter requirements and location.
- 4) Determine the necessary improvements or construction requirements to create a multi-hazard storm shelter. Back up power/generators would be necessary for the storm shelter and possibly acquiring portable generators for use.
- 5) Begin financing arrangements (grants, or loans). Complete all necessary applications for relevant grants.
- 6) Hold public hearing on project.
- 7) Bid project

Lead Implementing Agency: Village of Blue Mounds Board.

Supporting Agencies:

- Blue Mounds Police Department
- Dane County Emergency Management
- Other community organizations.

Possible Funding and Technical Assistance: Pursue FEMA hazard mitigation grants program funding with assistance from Dane County Emergency Management. Explore other funding options such as Community Development Block Grants.

Timeline: This project should be pursued as soon as possible. Work should begin as soon as this plan is adopted.

Priority: High

Estimated Costs: Location and improvements will determine the costs for this project. An estimated minimum cost of \$200,000 would be plausible.

## Appendices

### Appendix A: Planning Process

The planning process for the Village of Blue Mounds began in June 2015 as part of the Dane County Natural Hazard Mitigation Plan Update. The Village participated in the County process for much of the planning process, but recently decided to complete its own natural hazard mitigation plan. The reason for this decision was mainly to expedite the process to ensure the Village would have a plan completed in time to compete for grant funding in 2016. This appendix documents both phases of the planning process for the Village of Blue Mounds.

#### **Planning Process - Dane County Natural Hazard Mitigation Plan**

The Village of Blue Mounds participated in the Dane County Natural Hazard Mitigation Planning Process from June 2015 to March 2016. The County planning process incorporated roughly 40 local municipality as a multi-jurisdiction plan. This process allowed for all jurisdictions to receive the relevant information and learn how other communities were working towards becoming more hazards resilient. Local representatives could then apply these idea in their own communities. Representatives from the Village attended the Dane County Natural Hazard Mitigation Plan Update (DCNHMP) kickoff meeting and subsequent informational meetings. Details of those meetings are as follows:

#### ***Dane County Natural Hazard Mitigation Plan Kickoff Meeting: June 9, 2015***

The DCNHMP began with a meeting at the Alliant Energy Center in Madison, Wisconsin. Local representatives from all participating jurisdictions in the DCNHMP were invited to attend. Those who could not make the first meeting were able to participate in a makeup meeting held online for DCNHMP participants. The proceedings of the meeting were as follows:

- Welcome and Introduction
- In-depth discussion of natural hazard mitigation planning
- Hazard analysis worksheets
- Discussion of available resources

The Village of Blue Mounds received all materials distributed during this meeting.

#### ***DCNHMP Local Representatives Update Meeting: July 22, 2015***

Dane County Emergency Management (DCEM) held an update meeting for the local representatives of DCNHMP participating communities in the City of Sun Prairie. This meeting served as a way to answer common questions DCEM was receiving from local municipalities, as well as an informational meeting on the progress and information that would be contained in the County's base natural hazard mitigation plan. The main presentation for this meeting was given by Dr. David Liebl of the Wisconsin Institute for Climate Change Impacts (WICCI) on the impacts of climate change on natural hazards and how risk to communities is changing in the dynamic climate.



Following the talk on climate change, a discussion about forming natural hazard problem statements for individual communities took place. The purpose of this exercise was to encourage the local representatives to begin to think about hazardous situations in their communities that could be mitigated. This was meant to lay the groundwork for the eventual writing of mitigation strategies that communities could include in the local annex to the County plan. While no representatives were able to be present from the Village of Blue Mounds, they were briefed on the meeting's proceedings and received all relevant information.

***Village of Blue Mounds and DCEM Natural Hazard Mitigation Planning Meeting: September 3, 2015***

Throughout the DCNHMP process DCEM staff met with individual community planning teams to collect the needed information for the plans. DCEM and Blue Mounds staff, to discuss the Dane County Natural Hazard Mitigation Data Collection Handbook. The data gathered during the meeting is the basis for much of the data contained in this plan.

The meeting consisted of a discussion about hazards that may impact the community and the community's capability to address these hazards. Potential mitigation strategies that could be included in the plan were also discussed.

***DCNHMP County-wide Local Representatives Meeting: November, 9, 2015***

At the third County-wide DCNHMP meeting for local representatives, DCEM shifted focus from preparing data to analysis results and mitigation strategies. The proceedings of this meeting included the following topics:

- County risk assessment progress and preliminary results
- Potential mitigation strategies for the County and local communities
- Potential funding sources for local communities
- Finishing local annexes

A discussion of upcoming public workshops was also held. The Village of Blue Mounds received all information presented in this meeting.

***DCNHMP Public Workshops: January 12-20, 2016***

As mentioned in the Public Involvement portion of this plan, the Village of Blue Mounds participated in the public workshops put on by DCEM as a part of the DCNHMP. The Village advertised these meetings to its residents to ensure that they were aware of Blue Mounds' participation in the County process and could give their input.

The dates of these meetings were as follows:

January 12, 2016:	City of Madison, Madison Water Utility, 119 E. Olin Avenue, 6:00-8:00 pm.
January 13, 2016:	Village of Cambridge, Village Hall, 200 Spring Street, 6:00-8:00 pm.
January 14, 2016:	Town of Westport, Town Hall, 5387 Mary Lake Road, 6:00-8:00 pm.
January 20, 2016:	Town of Montrose, Town Hall, 1341 Diane Avenue, 6:00-8:00 pm.

The agenda for these meetings was as follows:

- Welcome
- Presentation – Hazard Mitigation Plan Overview
- Presentation – Hazard Mitigation and Climate Change
- Facilitated Discussion
- Questionnaire
- How to stay involved/next steps

### **Planning Process – Village of Blue Mounds Natural Hazard Mitigation Plan**

In March 2016, the Village of Blue Mounds began the process of completing a standalone local natural hazard mitigation plan, rather than attaching an annex to the overall County plan. The planning process for this standalone plan is relatively brief as much of the work for the plan had already been completed during the County plan.

Working with DCEM, the Village of Blue Mounds began the process of creating a standalone plan. Due to the smaller planning area, some hazards were eliminated from the plan as they were not of concern to the Village and others were combined into single hazards. The hazard analysis contained in this plan was completed by DCEM. The mitigation goals of this plan were adopted to reflect the goals of the County plan, and keep plan consistency despite the creation of a new standalone plan.

As mentioned in the Public Involvement section, the Village of Blue Mounds held a public meeting to gain community input on the plan. Following this meeting, the mitigation strategies for the Village of Blue Mounds were formed. Plan implementation information can be found in Appendix B.

## **Appendix B: Plan Adoption, Implementation, and Maintenance**

### **Plan Adoption**

The purpose of formally adopting this plan is to secure buy-in from Village of Blue Mounds officials and residents, raise awareness of the plan, and formalize the plan's implementation. The Village of Blue Mounds Board will adopt this local hazard mitigation plan by passing a resolution. The plan will be re-adopted by participating jurisdictions within the five-year update cycle.

### **Implementation**

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. Once adopted, the plan faces the truest test of its worth: implementation. The three main components of implementation are:

- Implement the action plan recommendations of this plan;
- Utilize existing rules, regulations, policies and procedures already in existence; and
- Communicate the hazard information collected and analyzed through this planning process so that the community better understands what can happen where, and what they can do themselves to be better prepared. Publicize the “success stories” of hazard mitigation in Blue Mounds to show the community the progress that is being made.

Through the Countywide and local planning process, this mitigation plan has identified multi-faceted solutions to multi-faceted problems. Implementation will be accomplished by adhering to the schedules and priorities identified for each mitigation strategy outlined in the plan. The plan describes a wide range of possible methods and projects and provides general guidelines for assigning priorities. As solutions and more specific projects are identified, each must be subjected to an analysis of feasibility and cost effectiveness. This is a necessary condition for obtaining FEMA or other federal or state funding assistance. FEMA has a strict set of requirements for mitigation project funding:

- Projects must be technically feasible and ready to implement.
- Structural projects must include engineering studies with the project application so the FEMA can independently evaluate the effectiveness and feasibility of the proposed project.
- All projects must be cost effective and substantially reduce the risk of future damage, hardship, loss, or suffering. All projects must have a benefit-cost ratio of 1.0 or greater in FEMA's Benefit-Cost Analysis (BCA).
- All projects must be in conformance with the current natural hazard mitigation plan.
- All flood-related projects must be located in a community that is participating in and in good standing with the National Flood Insurance Program.

Technical assistance on completing the analysis and submitting project grant applications is available from FEMA. These considerations must be included in the on-going project analysis that will take place as this plan is implemented.

Even without the FEMA project requirements, an evaluation of cost effectiveness and technical feasibility is necessary to assure the success of the project. However a 1.0 or greater BCA result is not the only measure of the value of a project. Some projects such as public education campaigns or ordinance review and updates are difficult to quantify cost effectiveness, but are intuitively seen as valuable and viable

mitigation alternatives. Some of these projects can be accomplished with existing staff and funding resources. Low or no-cost projects most easily demonstrate progress toward successful plan implementation.

Simultaneous to these efforts, Dane County will constantly monitor funding opportunities that could be leveraged to implement some of the more costly actions and advise local jurisdictions like Blue Mounds on these. Funding opportunities to be monitored include special pre- and post-disaster funds, special district budgeted funds, state and federal earmarked funds, and other grant programs, including those that can serve or support multi-objective applications.

Following the adoption of this plan, the Village of Blue Mounds Board and staff will be responsible for the implementation of this plan. Currently, the Village's Police Chief serves as the Emergency Management head for the Village. This individual facilitated this planning process and it is anticipated that the Police Chief will continue to be the leading Village official working on natural hazard mitigation. As such, the Emergency Management head will work with the Village Board to implement all phases of the mitigation strategies listed in this plan.

### ***Incorporation into Existing Planning Mechanisms***

Another important implementation mechanism that is highly effective and low-cost is incorporation of the hazard mitigation plan recommendations and their underlying principles into other County and municipal plans and mechanisms. As the Village has worked closely with Dane County on this plan, it is anticipated that this cooperation will continue. This is the reason for the inclusion of County plans, agencies, and mechanisms. Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. The Village and participating entities already have existing policies and programs to reduce losses to life and property from natural hazards. These are summarized in this plan's capability assessment and in the jurisdictional annexes. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing projects, where possible, through these other program mechanisms. These existing mechanisms include:

- Dane County Comprehensive Plan;
- Blue Mounds Comprehensive Plans
- Capital Improvement Plans
- Farmland Preservation Plan;
- Community Development Block Grant Program; and
- Dane County Soil and Water Conservation Programs.

Village officials involved in the updates to these mechanisms will be responsible for integrating the findings and recommendations of this plan with these other plans, as appropriate. Opportunities to link this updated multi-hazard mitigation plan with the Comprehensive Plan should be explored. One possibility is to make this plan an additional element to the Comprehensive Plan.

### **Maintenance, Monitoring, and Updating**

Plan maintenance implies an ongoing effort to monitor and evaluate plan implementation and to update the plan as required or as progress, roadblocks, or changing circumstances are recognized. In addition, the

plan will require periodic evaluation to determine if revision is necessary. The Village's mitigation planning team will work with Dane County Emergency Management to review the plan on an annual basis. At a minimum, the evaluation will consider the following:

- A review of the goals, policies, and objectives to determine whether they remain an appropriate approach to the problems they are intended to address;
- The progress of the program activities toward achieving the specific mitigation objectives;
- The problems encountered in the implementation of the specific activities;
- Evaluation and refinement of the specific activities based on the evaluation of the problems encountered;
- Review of possible funding sources that could be applied to future efforts; and
- Review of the public input process to ensure that citizens' concerns are heard in the implementation and evaluation process.

### ***Plan Updates***

Updates to this plan will follow the latest FEMA and WEM planning guidance. Evaluation of progress can be achieved by monitoring changes in vulnerabilities identified in the plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions; and/or
- Increased vulnerability as a result of new development (and/or annexation).

The Village of Blue Mounds will use the following process to evaluate progress and any changes in vulnerability as a result of plan implementation:

- A representative from the responsible entity identified in each mitigation measure will be responsible for tracking and reporting on an annual basis to the Village on project status and provide input on whether the project as implemented meets the defined objectives and is likely to be successful in reducing vulnerabilities.
- If the project does not meet identified objectives, the Village will determine what alternate projects may be implemented.
- New projects identified will require an individual assigned to be responsible for defining the project scope, implementing the project, and monitoring success of the project.
- Projects that were not ranked high priority but were identified as potential mitigation strategies will be reviewed as well during the monitoring and update of this plan to determine feasibility of future implementation.
- Changes will be made to the plan to accommodate for projects that have failed or are not considered feasible after a review for their consistency with established criteria, the time frame, priorities, and/or funding resources.

Updates to this plan will:

- Consider changes in vulnerability due to project implementation;
- Document success stories where mitigation efforts have proven effective;

- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Document hazard events and impacts that occurred within the five-year period;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate documentation of continued public involvement;
- Incorporate documentation to update the planning process that may include new or additional stakeholder involvement;
- Incorporate growth and development-related changes to building inventories;
- Incorporate new project recommendations or changes in project prioritization;
- Include a public involvement process to receive public comment on the updated plan prior to submitting the updated plan to WEM/FEMA; and
- Include re-adoption by all participating entities following WEM/FEMA approval.

### ***Maintenance/Monitoring Schedule***

In order to track progress and update the mitigation strategies identified in the action plan, the Village’s Emergency Management personnel will revisit this plan annually. Dane County Emergency Management will assist with this review as requested.

Following a disaster or a major event, the Village of Blue Mounds will review and update this plan to reflect the status of current mitigation efforts; to expand the plan as necessary; and to address new issues, recommendations, and activities based on the impacts of the current disaster. Any substantive changes to the plan will be presented for formal approval to the County Board, through the Public Protection and Judiciary Committee.

This plan will be updated, approved, and adopted within a five-year cycle as per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000. The plan will need to be updated, re-approved by the Wisconsin Emergency Management (WEM) and FEMA Region V, and re-adopted by all participating jurisdictions no later than May 2021. This will be in-line with Dane County’s next County-wide natural hazard mitigation plan update. The Village should align its update with the County’s efforts to be able to capitalize on the resources available and information that is collected and distributed during that effort.

### ***Continued Public Involvement***

The effort that produced this plan was an open process and the implementation must be as well. Its success depends on it. The update process provides an opportunity to publicize success stories from the plan implementation and seek additional public comment. A minimum of one public hearing to receive public comment on plan maintenance and updating will be held during the update period. When the Village conducts its annual review, success stories of implementation will be identified for potential press releases. When the Village begins update, it will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the plan. The plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, and press releases to local media.

## **Appendix C: Blue Mounds Natural Hazard Mitigation Plan Steering Committee**

The following are the members of the Blue Mounds Natural Hazard Mitigation Plan Steering Committee:

- Andrew Rose, Police Chief – Village of Blue Mounds, Village of Blue Mounds Natural Hazard Mitigation Plan Project Lead
- David Janda, Assistant Director – Dane County Emergency Management, Dane County Natural Hazard Mitigation Plan Update Project Lead
- Phil Rynish, Natural Hazard Mitigation Project Assistant – Dane County Emergency Management and University of Wisconsin-Madison Department of Urban and Regional Planning