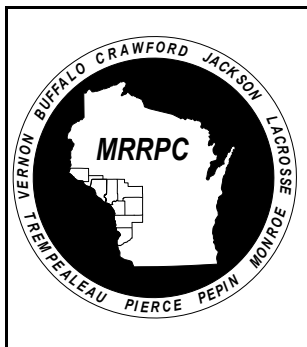


# LA CROSSE COUNTY WISCONSIN

## MULTI- HAZARDS MITIGATION PLAN 2015 - 2019

This plan was prepared by the Mississippi River Regional Planning Commission through a cooperative cost sharing agreement with the La Crosse County Board of Supervisors, the Mississippi River Regional Planning Commission, the Wisconsin Emergency Management and the Federal Emergency Management Agency.





## ABSTRACT

- Title:** LA CROSSE COUNTY MULTI-HAZARDS MITIGATION PLAN 2015 - 2019
- Plan Purpose:** This plan's purpose is to identify goals, projects and actions the county, other local governments and other organizations can undertake to reduce hazard risks to life, health and property.
- This plan through properly addressing the federal requirements in the Disaster Mitigation Act of 2000 makes the county and other local governments that participated in the planning process eligible for Federal Hazard Mitigation Grant Programs. These programs can assist in planning, relocation and infrastructure projects that reduce and sometimes eliminate losses and damage from hazards.
- Plan Participants:** This plan was prepared under the direction of the County Local Emergency Planning Committee who coordinated their plan development efforts through the County Emergency Management Director. The Mississippi River Regional Planning Commission who wrote a planning grant to fund this plan was contracted with to write the plan and facilitate public meetings.
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## 1.0 LA CROSSE COUNTY MULT-HAZARDS MITIGATION PLANNING PROCESS

### Disaster Mitigation Act of 2000-DMA2K

The development of this plan is the result of the passage of the Disaster Mitigation Act of 2000 (DMA2K). This Act (Public Law 106-390) signed into law on October 30, 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The Act attempts to stem the losses from disasters, reduce future public and private expenditures, and to speed up response and recovery from disasters. The following is a summary of the Act that pertains to local governments and tribal organizations.

- The Act establishes a new requirement for local governments and tribal organizations to prepare an All-Hazard Mitigation Plan in order to be eligible for funding from FEMA through the Pre-Disaster Mitigation Assistance Program and Hazard Mitigation Grant Program.
- The Act establishes a requirement that natural hazards such as tornadoes, floods, wildfires need to be addressed in the risk assessment and vulnerability analysis parts of the All Hazard Mitigation Plan. Manmade hazards such as hazardous waste spills is encouraged but not required to be addressed.
- The Act authorizes up to seven percent of Hazard Mitigation Grant Program funds available to a state after a federal disaster to be used for development of state, local, and tribal organization All Hazard Mitigation Plans.
- The Act establishes November 1, 2004 as the date by which local governments and tribal organizations are to prepare and adopt their respective plans in order to be eligible for FEMA Hazard Mitigation Grant Program and November 1, 2003 Pre-Disaster Mitigation Program.
- If a plan is not prepared by November 1, 2004, and a major disaster is declared, in order for a local government or tribal organization to be eligible to receive funding through the Hazard Mitigation Grant Program, they must agree to prepare an All Hazards Mitigation Plan within one year.
- In addition, by not having an All Hazard Mitigation Plan, local governments and tribal organizations cannot utilize funding through the Pre-Disaster Mitigation Grant Program.

### Plan Committees and Organizations

The La Crosse County All Hazards Mitigation Plan 2008-2012 included all local units of government and organizations that desired to participate in it. This update of that plan will also include all local units of government and organizations that desire to participate. This includes the county along with the Towns of Bangor, Barre, Burns, Campbell, Farmington, Greenfield, Hamilton, Holland, Medary, Onalaska, Shelby, Washington, the Villages of Bangor, Holmen, Rockland, West Salem and the Cities of La Crosse, and Onalaska. The update of the plan was prepared under the guidance of the County Emergency Management Committee (LEPC) due to their familiarity with flooding issues and floodplain management. Members of this committee and who they represent are: Pat Smith, media; Jay Loeffler, public safety; Marc Schultz, citizen environmental group; Mike Horstman, law enforcement; Sue Kunz, chemical industries; Jennifer Shilling, elected government official; Vicki Burke, local elected government official; Lois Losby, citizen; Keith Butler, County Emergency Management Coordinator; Tom Wright, hospitals; Franz Fredricks, citizen; Shari Vanderbush, private business; Gregg Cleveland, fire; and Keith Carlson, transportation. The County Emergency Management Coordinator serves as a liaison between the County Emergency Management Committee and other local units of government in the County. The County, being a member of the Mississippi River Regional Planning Commission, contracted with them to facilitate the updating of the plan under the direction of the County Emergency Management Coordinator.

### Public Involvement

The County used two surveys, committee meetings, Mississippi River Regional Planning Commission meetings, a public hearing and news releases as methods to garner public input into the plan. See Table 1-1 for a listing of the representatives who received surveys. In addition a draft of the updated plan was sent to adjacent counties and business organizations within La Crosse County for their review and comments.

Surveys. To ensure the opportunity for inclusion of all municipalities and organizations into the planning process a risk assessment survey was mailed to all mayors, village presidents, and town chairmen, fire chiefs and EMS directors. The risk assessment survey asked the respondents to rank 24 natural hazards, on a high, medium or low basis based on their opinion of a given hazards probable threat to their community's health and public safety. The survey also asked the respondents for suggestions on projects or programs that they perceive as being needed to reduce future losses from the various hazards. The results of this survey are shown on Tables 3-1 and 3-2. The projects, identified through this survey as well as others are listed in Chapter 4. A list of who received this survey can be found in Table 1-1 on page 1-3 and a copy of the survey can be found in Appendix A.

In addition to the risk assessment survey every municipality within La Crosse County was mailed in May, 2012 their hazard mitigation projects list from the first plan. Each municipality was asked to update this listing by striking out those projects which

have been completed and adding new projects to be included in the updated plan. Also a hazard mitigation project identification survey was mailed to all chiefs of police, the county sheriff, fire chiefs, the county zoning administrator, county highway commissioner, county planner and the county land conservation coordinator. A listing of who received this survey can be found in Table 1-2 on page 1-4 and a copy of the survey can be found in Appendix B. The projects, identified through this process as well as others are listed in Chapter 4.

Local Emergency Management Committee Meetings (LEPC). During the course of the period in which the plan was being developed the County Emergency Management Committee included the Multi-Hazards Mitigation Plan on their agenda to monitor the status of the plan and to provide input into it. A copy of a Local Emergency Management Committee Meeting agenda can be found in Appendix C

Public Meetings and Hearings. The County also sponsored a public meeting on May 12, 2014 to present a draft of the La Crosse County Multi-Hazard Mitigation Plan to the public. During this meeting the results of the local official Hazard Risk Assessment Survey were presented (Tables 3-1 and 3-2) and a list of potential projects needed to reduce future losses from these hazards was presented. Additional public input or potential projects/programs were also received during the course of this meeting. The public was notified of the public meeting on the draft plan through a Class Two notice in the County's official newspaper, the La Crosse Tribune. A copy of the public notice can be found in Appendix C.

Municipal and Business Participation. All local municipalities were mailed the risk assessment surveys. The municipalities receiving the survey were the Towns of Bangor, Barre, Burns, Campbell, Farmington, Greenfield, Hamilton, Holland, Medary, Onalaska, Shelby, Washington, the Villages of Bangor, Holmen, Rockland, West Salem and the Cities of La Crosse, and Onalaska. In addition these municipalities were mailed their project listing from the first plan and were asked to update this list. See Table 1-3 on page 1-5 for a listing of who responded to these surveys. And lastly all these municipalities were asked to approve the updated plan by resolution. In order to accomplish this each municipality is required by law to have the adoption of the resolution as an agenda item for their board meeting. In an effort to get local business input, a draft of the plan was sent to the following business associations: LADCO, Sever River Alliance, Downtown Main Street, Bangor Chamber of Commerce, Greater La Crosse Chamber of Commerce, Holmen Area Civic and Commerce Association, West Salem Business Association, and the Hmong Mutual Assistance Association for their review and comments.

Neighboring Communities, Academia and Nonprofits Participation. Emergency Management Directors of neighboring Counties were sent copies of the draft plan for their review and comments. The Bangor, Holmen, La Crosse, Onalaska and West Salem school districts were sent copies of the draft for their review and comment. Nonprofit organizations were given the opportunity to participate in the public hearings as these were notified through Class Two notices.

**MRRPC Bimonthly Meetings.** Beginning with the December 14, 2011 MRRPC Bimonthly meeting and continuing until the final approval from FEMA, the La Crosse County Multi-Hazards Mitigation Plan was an agenda item at every meeting. These bimonthly meetings, which are announced through the press and direct mailings, are open to the public. Commissioners, the public, and other interested parties were updated as to the progress of the plan and their comments and suggestions were accepted. A copy of a MRRPC Bimonthly meeting addenda can be found in Appendix C.

**Incorporated Plans, Studies, Reports and Technical Data**

The following is a list of plans, studies and reports that were used to assist in preparing this plan.

Plan Name	How used
Hazard Analysis for the State of Wisconsin, November 2008	Provided data for historical natural hazard events.
2011 State of Wisconsin Hazard Mitigation Plan	Provided dates and amounts of damage for the various natural hazards
National Climatic Data Center	Provided data for history and damage amounts for the various natural hazards
Hazard Analysis and Mitigation, La Crosse County	Provided data for on the history and damage amounts for the various natural hazards and provided a source of mitigation projects
Natural Hazards Assessment, La Crosse County WI, by NOAA/National Weather Service La Crosse, WI	Provided data for history and damage amounts for the various natural hazards
Wisconsin Department of Natural Resources Dam Database	Provided list of dams within Vernon County
Wisconsin Department of Administration, Hazard Material Site Database	Provided a list of hazardous material sites located within the County



### **Funding for the La Crosse County All Hazards Mitigation Plan**

In December 2011, the County received word that they were awarded a \$50,000 FEMA planning grant through the Hazard Mitigation Grant Program under federal disaster declaration, FEMA-1933-DR to update their All Hazards Mitigation Plan 2008-2012. FEMA will provide 75% of the funds (\$37,500), Wisconsin Emergency Management will provide 12.5% (\$6,250) and the remaining \$6,250 will be provided by local match. On February 8, 2012, the Mississippi River Regional Planning Commission (MRRPC) signed a contract with La Crosse County that called for the MRRPC to prepare the plan and provide most of the local matching share.

### **Plan Contents**

In order to meet FEMA's local mitigation plan requirements La Crosse County's Multi-Hazards Mitigation Plan is organized into the following five parts, which also follow the Resource Guide to All Hazard Mitigation Planning in Wisconsin.

1. Planning Process
2. Planning Area
3. Risk Assessment
4. Mitigation Strategy
5. Plan Maintenance and Adoption

### **Updated Items**

During this update each of the chapters of the old plan were reviewed and updated. The following items were updated during this process:

Chapter 1: La Crosse County Emergency Management Committee members were listed, survey information was updated and the table identifying who received surveys was updated;

Chapter 2: Population, housing and land use tables were updated;

Chapter 3: Updated risk assessments, historical data, vulnerability data (to include data up to 2011), 100-year floodplain data, flood potential, updated critical facilities tables and maps and added pandemic flu information;

Chapter 4: Updated mitigation projects lists by identifying completed projects and adding new projects;

Chapter 5: Reviewed maintenance schedule and updated list of municipalities which have approved the plan.

### **Plan Contact Information**

For further information pertaining to this plan contact:

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Courthouse and Law Enforcement Center

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La Crosse, Wisconsin 54601-3296

608-789-4811

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**Table 1-1  
Risk Assessment Survey Mailing List**

Name	Representing	Name	Representing
Steve Mader	T. Greenfield	Duane Kneifl	West Salem EMS
Richard Schomburg	T. Hamilton	Tim Candahl	T. Shelby
Jeff Brudos	T. Shelby	Kenneth Manke	Bangor
Linda Young	V. Rockland	David Carlson	T. Holland
Mike Hesse	T. Farmington	Mike Mc Hugh	Holmen PD
Scott Johnson	T. Campbell	Joe Chilson	Onalaska Mayor
Dennis Manthei	V. West Salem	Rolly Bogert	T. Onalaska
Gregg Cleveland	C. La Crosse FD	Matt Hoth	T. Burns
Don Dominick	C. Onalaska FD	Nancy Proctor	V. Holmen
Ed Kondracki (ret)	C. La Crosse PD	Steve Helgeson	Sheriff
Nate Melby	Campbell FD	Scott Alo	Bangor PD
Mike Kemp	T. Shelby FD	Matt Harter	La Crosse Mayor
David Munson	West Salem FD	Linda Seidel	T. Medary
Doug Schober	Holmen FD	Ron Reed	T. Barre
Steve Horstman	Bangor FD	Greg Peterson	T. Bangor
Tom Tornstrom	Tri-State Ambulance	Charles Ashbeck	West Salem PD
Mike Hesse	Farmington EMS	Jeff Trotnic	Onalaska PD
Terry Beron	Bangor EMS	Daniel Korn	T. Washington
Chris O'Hearn	Brice Prairie EMS		

**Table 1-2  
Projects Needs Survey Mailing List**

Name	Title
Mathias Harter	Mayor, City of La Crosse
Joe Chilson	Mayor, City of Onalaska
Kenneth Manke	Village of Bangor
Nancy Proctor	President, Village of Holmen
Linda Young	President, Village of Rockland
Dennis Manthei	President, Village of West Salem
Greg Peterson	Chairman, Town of Bangor
Ron Reed	Chairman, Town of Barre
Matt Hoth	Chairman, Town of Burns
Scott Johnson	Chairman, Town of Campbell
Mike Hesse	Chairman, Town of Farmington
Steve Mader	Chairman, Town of Greenfield
Richard Schomburg	Chairman, Town of Hamilton
David Carlson	Chairman, Town of Holland
Linda Seidel	Chairman, Town of Medary
Rolly Bogert	Chairman, Town of Onalaska
Tim Candahl	Chairman, Town of Shelby
Daniel Korn	Chairman, Town of Washington

**Table 1-3  
Municipal Survey Results**

Municipality	Risk Assessment Survey		Mitigation Projects Survey		
	Received Survey	Returned Survey	Received Survey	Mailed Survey Back	Replied by individual meeting
T. Bangor	X	X	X	X	
T. Barre	X	X	X	X	
T. Burns	X	X	X	X	
T. Campbell	X	X	X		X
T. Farmington	X	X	X	X	
T. Greenfield	X	X	X	X	
T. Hamilton	X	X	X	X	
T. Holland	X	X	X	X	
T. Medary	X	X	X		X
T. Onalaska	X	X	X	X	
T. Shelby	X	X	X	X	
T. Washington	X	X	X	X	
V. Bangor	X	X	X		X
V. Holmen	X	X	X	X	
V. Rockland	X	X	X	X	
V. West Salem	X	X	X		X
C. La Crosse	X	X	X	X	
C. Onalaska	X	X	X	X	

## 2.0 LA CROSSE COUNTY PLANNING AREA

### General Geography

The planning area for this Multi-Hazards Mitigation plan includes all of La Crosse County. La Crosse County is located along the Mississippi River in southwest Wisconsin. The County covers an area of approximately 453 square miles. The local government units include two cities, four villages, and twelve town governments. The cities and villages in the County range in geographic size from the City of La Crosse with 20.14 square miles to the Village of Rockland with an area of less than one square mile. Town governments range in geographic size from the Town of Farmington 75 square miles to the Town of Campbell with 3.84 square miles. Table 2-1 provides names, population and housing data for all the local units of government.



### Demographic and Economic Profile

**Population.** The County's population grew from 107,120 in 2000 to 114,638 in 2010 a 7 percent increase. This rate of growth was higher than the State (6.0%) but lower the Nation (9.1%). The 2010 census showed that the six cities and villages in the County range in population size from 51,320 in the City of La Crosse to 594 residents in the Village of Rockland. The population of the towns in the County ranged from 5,623 in the Town of Onalaska to 558 in the Town of Washington. Most municipalities grew in population between 2000 and 2010. Only the Towns of Burns, Medary, Washington, the Village of Rockland and the City of La Crosse experienced a population decrease during that time period. Table 2-1.

**Table 2-1**  
**La Crosse County Population and Land Area Data**

Jurisdiction	Population				Land Area (Sq.Miles)		
	2000	2010	# Change 00-10	% Change 00-10	Land	Water	Total
Bangor	583	615	32	5.5	35.03	0	35.03
Barre	1,014	1,234	220	21.7	20.67	0	20.67
Burns	979	947	-32	-3.3	48.33	0.03	48.36
Campbell	4,410	4,314	-96	-2.2	3.84	8.73	12.57
Farmington	1,733	2,061	328	18.9	75.41	0.17	75.58
Greenfield	1,538	2,060	522	33.9	30.08	0	30.08
Hamilton	2,103	2,436	333	15.8	50.07	1.04	51.11
Holland	3,042	3,701	659	21.7	42.51	3.13	45.64
Medary	1,463	1,461	-2	-0.1	11.71	0.02	11.73
Onalaska	5,210	5,623	413	7.9	37	7.9	44.9
Shelby	4,687	4,715	28	0.6	25.58	3.55	29.13
Washington	738	558	-180	-24.4	36.1	0	36.1
<b>Town Totals</b>	<b>27,500</b>	<b>29,725</b>	<b>2,225</b>	<b>8.1</b>	<b>416.33</b>	<b>24.57</b>	<b>440.9</b>
V. Bangor	1,076	1,459	383	35.6	1.06	0	1.06
V. Holmen	3,220	9,005	5785	179.7	3.19	0	3.19
V. Rockland	509	594	85	16.7	0.54	0	0.54
V. West Salem	3,611	4,799	1188	32.9	2.38	0.01	2.39
C. La Crosse	51,120	51,320	200	0.4	20.14	2.02	22.16
C. Onalaska	11,414	17,736	6322	55.4	9.09	0.59	9.68
<b>City &amp; Village Totals</b>	<b>70,950</b>	<b>84,913</b>	<b>13,963</b>	<b>19.7</b>	<b>36.4</b>	<b>2.6</b>	<b>39.0</b>
<b>La Crosse County</b>	<b>98,450</b>	<b>114,638</b>	<b>16188</b>	<b>16.4</b>	<b>452.7</b>	<b>27.2</b>	<b>479.9</b>
<b>Wisconsin</b>	<b>4,891,599</b>	<b>5,363,675</b>	<b>472,076</b>	<b>9.7</b>	<b>54,310</b>	<b>11,888</b>	<b>65,498</b>
<b>United States</b>	<b>248,709,873</b>	<b>281,421,906</b>	<b>32,712,033</b>	<b>13.2</b>	<b>3,537,422</b>	<b>181,272</b>	<b>3,718,694</b>

Source: 1) 2000 & 2010 Population and Housing Units: U.S. Department of Commerce-Bureau of the Census  
 2) La Crosse County and Jurisdictions Land/Water Area, State of Wisconsin Dept of Administration, Demographic Services Center  
 3) Wis. And U.S. Land/Water Area: U.S. Census Bureau

**Housing.** Housing units in the County grew from 43,479 in 2000 to 48,402 in 2010 an increase of 11 percent. This rate of growth was lower than both the State (13%) and the Nation (13%). The 2000 – 2010 decennial censuses showed that housing growth rates in the six cities and villages ranged from 48.1% in the Village of Holmen to 1.8% in the City of La Crosse. Housing growth rates in the towns ranged from 36.1% in the Town of Greenfield to -4.7% in the Town of Washington, Table 2-1.

**Table 2-2**  
**La Crosse County Housing, and Housing Units Per Square Mile**

Jurisdiction	Housing Units				Housing Units Per Sq. Mile of Land Area			
	2000	2010	# Change 00-10	% Change 00-10	2000	2010	# Change 00-10	% Change 00-10
Bangor	227	234	7	3.1%	6.5	6.7	0.2	3.1
Barre	354	481	127	35.9%	17.1	23.3	6.1	35.9
Burns	367	415	48	13.1%	7.6	8.6	1.0	13.1
Campbell	1,823	1995	172	9.4%	474.7	519.5	44.8	9.4
Farmington	706	877	171	24.2%	9.4	11.6	2.3	24.2
Greenfield	570	776	206	36.1%	18.9	25.8	6.8	36.1
Hamilton	732	882	150	20.5%	14.6	17.6	3.0	20.5
Holland	1,054	1346	292	27.7%	24.8	31.7	6.9	27.7
Medary	553	588	35	6.3%	47.2	50.2	3.0	6.3
Onalaska	1,834	2120	286	15.6%	49.6	57.3	7.7	15.6
Shelby	1,817	1997	180	9.9%	71.0	78.1	7.0	9.9
Washington	236	225	-11	-4.7%	6.5	6.2	-0.3	-4.7
<b>Town Totals</b>	<b>10,273</b>	<b>11,936</b>	<b>1,663</b>	<b>16.2%</b>	<b>24.7</b>	<b>28.7</b>	<b>4.0</b>	<b>16.2</b>
V. Bangor	546	597	51	9.3%	515.1	563.2	48.1	9.3
V. Holmen	2,377	3,521	1,144	48.1%	745.1	1103.8	358.6	48.1
V. Rockland	216	243	27	12.5%	400.0	450.0	50.0	12.5
V. West Salem	1,765	1,869	104	5.9%	741.6	785.3	43.7	5.9
C. La Crosse	22,233	22,628	395	1.8%	1103.9	1123.5	19.6	1.8
C. Onalaska	6,070	7,608	1,538	25.3%	667.8	837.0	169.2	25.3
<b>City &amp; Village Totals</b>	<b>33,207</b>	<b>36,466</b>	<b>3,259</b>	<b>9.8%</b>	<b>912.3</b>	<b>1001.8</b>	<b>89.5</b>	<b>9.8</b>
<b>La Crosse County</b>	<b>43,480</b>	<b>48,402</b>	<b>4,922</b>	<b>11.3%</b>	<b>96.0</b>	<b>106.9</b>	<b>10.9</b>	<b>11.3</b>
Wisconsin	2,321,144	2,624,358	303,214	13.1%	42.7	48.3	5.6	13.1
United States	115,904,641	131,704,730	15,800,089	13.6%	32.8	37.2	4.5	13.6

Source: 1) 2000 & 2001 Housing Units: U.S. Department of Commerce-Bureau of the Census

2) La Crosse County and Jurisdictions Land/Water Area, State of Wisconsin Department of Administration, Demographic Services Center

3) Wis. And U.S. Land/Water Area: U.S. Census Bureau

**Employment.** Total employment in the County grew from 79,727 in 2001 to 82,872 in 2009 an increase of 3.9 percent. This rate of growth was above the State (0.3%) but below the Nation (5.3%). The top three employment sectors in the County in 2009 were Health care and social assistance (17.9%), Government and government enterprises (12.2%) and Retail Trade (12.2%). These 3 sectors were also the leading sectors for the nation. For Wisconsin, these three sectors were 2nd, 3rd and 4th highest sectors in percent employed. Only Manufacturing had a higher employment percentage. From 2001 to 2009 the following employment sectors experienced growth of at least 10%; Management of companies and enterprises (31.3%), Finance, Insurance, and Real Estate (28.3%), Health care and social assistance (27.5%), Educational services (20.6%), Professional, scientific, and technical services (19.5%), Real estate and rental and leasing (14.2%), Arts, entertainment and recreation (12.0%), and Transportation and warehousing (10.4%). But also during the same time period the following employment sectors experienced a decline of at least 10%; Wholesale trade (-31.4%), Manufacturing (-17.9%), Information (-16.6%), and Farm employment (-11.8%). Additional information on employment sectors can be found in Table 2-3.

**Table 2-3  
Employment by Industry**

	La Crosse County					Wisconsin					United States				
	2001		2009		% Change 01-09	2001		2009		% Change 01-09	2001		2009		% Change 01-09
	No. Emp.	%	No. Emp.	%		No. Emp.	%	No. Emp.	%		No. Emp.	%	No. Emp.	%	
Total employment	79,727		82,872		3.9	3,444,847		3,454,201		0.3	165,510,200		174,199,800		5.3
Farm employment	1,063	1.3	938	1.1	-11.8	93,067	2.7	92,515	2.7	-0.6	3,060,000	1.8	2,634,000	1.5	-13.9
Forestry, fishing, and related activities	(D)	N/A	(D)	N/A	N/A	14,818	0.4	14,697	0.4	-0.8	801,500	0.5	815,400	0.5	1.7
Mining	(D)	N/A	27	0.0	N/A	5,057	0.1	4,826	0.1	-4.6	806,400	0.5	1,126,600	0.6	39.7
Utilities	177	0.2	(D)	N/A	N/A	11,399	0.3	11,565	0.3	1.5	615,800	0.4	589,800	0.3	-4.2
Construction	3,735	4.7	3,551	4.3	-4.9	157,525	4.6	167,508	4.8	6.3	9,817,700	5.9	9,526,900	5.5	-3.0
Manufacturing	9,848	12.4	8,090	9.8	-17.9	447,588	13.0	451,930	13.1	1.0	16,913,600	10.2	12,489,200	7.2	-26.2
Wholesale trade	4,605	5.8	3,160	3.8	-31.4	123,147	3.6	126,208	3.7	2.5	6,231,400	3.8	6,151,300	3.5	-1.3
Retail trade	9,537	12.0	10,070	12.2	5.6	368,556	10.7	374,188	10.8	1.5	18,256,800	11.0	17,889,800	10.3	-2.0
Transportation and warehousing	2,165	2.7	2,390	2.9	10.4	111,051	3.2	112,380	3.3	1.2	5,478,000	3.3	5,566,200	3.2	1.6
Information	1,365	1.7	1,139	1.4	-16.6	53,677	1.6	54,928	1.6	2.3	4,047,800	2.4	3,317,300	1.9	-18.0
Finance and insurance	3,467	4.3	4,448	5.4	28.3	190,416	5.5	189,578	5.5	-0.4	7,805,600	4.7	9,476,800	5.4	21.4
Real estate and rental and leasing	2,084	2.6	2,379	2.9	14.2	114,966	3.3	116,022	3.4	0.9	5,547,400	3.4	7,530,200	4.3	35.7
Professional, scientific, and technical services	2,462	3.1	2,942	3.6	19.5	154,271	4.5	156,895	4.5	1.7	10,272,800	6.2	11,757,800	6.7	14.5
Management of companies and enterprises	1,400	1.8	1,838	2.2	31.3	49,336	1.4	48,336	1.4	-2.0	1,786,300	1.1	2,021,300	1.2	13.2
Administrative and waste management services	3,354	4.2	3,322	4.0	-1.0	168,417	4.9	154,922	4.5	-8.0	9,604,500	5.8	10,121,000	5.8	5.4
Educational services	1,173	1.5	1,415	1.7	20.6	66,849	1.9	64,500	1.9	-3.5	3,019,300	1.8	3,958,200	2.3	31.1
Health care and social assistance	11,644	14.6	14,847	17.9	27.5	396,406	11.5	393,212	11.4	-0.8	15,247,400	9.2	18,770,700	10.8	23.1
Arts, entertainment, and recreation	1,477	1.9	1,654	2.0	12.0	66,686	1.9	66,029	1.9	-1.0	3,165,100	1.9	3,753,100	2.2	18.6
Accommodation and food services	6,039	7.6	6,218	7.5	3.0	238,365	6.9	238,854	6.9	0.2	10,807,200	6.5	11,990,500	6.9	10.9
Other services, except public administration	4,238	5.3	4,036	4.9	-4.8	177,221	5.1	179,265	5.2	1.2	9,074,600	5.5	10,016,700	5.8	10.4
Government and government enterprises	9,739	12.2	10,085	12.2	3.6	436,029	12.7	435,843	12.6	0.0	23,151,000	14.0	24,697,000	14.2	6.7

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information, (REIS)

**Employers.** In La Crosse County there are 6 employers who employ over 1,000 people and 9 employers who employ between 500-999 people. A list of the top 25 employers in La Crosse County can be found in Table 2-4.

**Table 2-4**  
**La Crosse County Top 25 Employers**

Rank	Employer Name	Industry Type	Employee size range
1	Gundersen Lutheran Administrative	Offices of physicians, except mental health	1000+
2	Mayo Clinic Health System	Gen. medical & surgical hospitals	1000+
3	The Trane Company	AC, refrigeration, & forced air heating	1000+
4	County of La Crosse	Executive & legislative offices, combined	1000+
5	Kwik Trip Inc	Warehousing, storage; gasoline station w/convenience stores; fluid milk mfg. etc.	1000+
6	La Crosse Public School	Elementary & secondary schools	1000+
7	University of Wisconsin- La Crosse	Colleges & universities	500-999
8	City of La Crosse	Executive & legislative offices, combined	500-999
9	CenturyLink	Managing offices	500-999
10	Wal-Mart Associates Inc	Discount department stores	500-999
11	Primecare Health Plan	Health medical ins. carriers; 3rd prty admin of ins. funds; & other ins. related activity	500-999
12	Logistics Health Inc.	Third Party Admin of Insurance Funds	500-999
13	Holmen Public School	Elementary & secondary schools	500-999
14	Western Wisconsin Technical College	Junior colleges	500-999
15	City Brewing, LLC	Breweries	500-999
16	Bethany-St Joseph Corp	Nursing care facilities	250-499
17	La Crosse Area Family YMCA Inc.	Civic & Social Organizations	250-499
18	Northern Engraving Corp	All other plastics product mfg.	250-499
19	Viterbo University Inc	Colleges & universities	250-499
20	Courtesy Corp	Limited service restaurants	250-499
21	Onalaska Public School	Elementary & secondary schools	250-499
22	Bethany Lutheran Homes Inc.	Nursing Care Facilities	250-499
23	Reinhart Food Service LLC - County Market	General Line Grocery Merchant Wholesalers	250-499
24	Menards	Home Center	250-499
25	Apac Customer Services Inc	Telemarketing bureaus	250-499

### General Development Pattern

**Land Use Trends.** Real estate assessment records from 2006 to 2011 provide the most current land use information for the County. In 2011 agricultural land totaled 111,328 acres or 36.9 percent of land use in the County. This was followed by Forest, 68,200 acres – 22.5 percent; Residential, 20,028 acres – 6.6 percent; Undeveloped, 11,753 acres – 3.9 percent; Commercial, 5,365 acres – 1.8 percent; Other, 2,123 acres – 0.7 percent; and Manufacturing, 1,846 acres - 0.6 percent, Table 2-5.

Between the years 2006 – 2011 all land classifications except Residential showed a decline in acreage. This indicates that La Crosse County's residential land use is growing at the expense of all other land classifications. Between 2006 and 2011 the amount of land assessed as agricultural land decreased by 1,509 acres or 1.3 percent. The Use Value Assessment Law probably contributed to keeping the conversion of farmland on urban fringes to a minimum by assessing the land on its agricultural value and not its residential or commercial value. This reduces property taxes and creates an incentive to maintain farmland and not sell it for other uses, Table 2- 5.

**Table 2-5  
La Crosse County Land Use**

Land Classification	2006		2011		2006 - 2011 % Change
	Acres	% of County	Acres	% of County	
Residential <sup>(1)</sup>	19,244	6.4	20,028	6.6	4.1
Commercial <sup>(1)</sup>	5,430	1.8	5,365	1.8	-1.2
Manufacturing <sup>(1)</sup>	1,882	0.6	1,846	0.6	-1.9
Agriculture <sup>(1)</sup>	112,837	37.4	111,328	36.9	-1.3
Undeveloped <sup>(1)</sup>	11,997	4.0	11,753	3.9	-2.0
Forest <sup>(1)</sup>	30,746	10.2	26,690	8.8	-13.2
Agriculture Forest <sup>(1)</sup>	44,880	14.9	41,510	13.7	-7.5
Other <sup>(1)</sup>	2,165	0.7	2,123	0.7	-1.9
<b>County Total <sup>(2)</sup></b>	<b>301,956</b>		<b>301,956</b>		

(1) Wisconsin Department of Revenue Division of State and Local Finance - 2006 and 2011 Statement of Assessment Acreage Totals

(2) Includes total area of county - both land area and water area but excludes the water area of the Mississippi River. Source: Wisconsin DNR

Class 1 - **Residential Class** includes any parcel or part of a parcel of untilled land that is not suitable for the production of row crops, on which a dwelling or other form of human abode is located. It also includes vacant land in cities and villages where the most likely use would be for residential development. Mobile homes assessed as real property are classified as residential. Apartment bldgs of up to 3 units are also classified as residential.

Class 2 - **Commercial Classification** includes all land and improvements primarily devoted to buying and reselling goods for a profit. It also includes the providing of services in support of residential, agricultural, manufacturing and forest uses.

Class 3 - **Manufacturing Classification** - See Section 70.995, Wis. Stats., State assessment of manufacturing property.

Class 4 - **Agricultural Classification** includes land devoted primarily to agricultural use. In 1995, statutory revisions were made changing the classification and assessment of agricultural land. Land classified as agricultural cannot include buildings or improvements. Effective 1/1/2003, Wis. Act 109 amended sec. 70.32(2)(c)1 Wis. Stats., defining agricultural land as "land exclusive of buildings and improvements and the land necessary for their location and convenience, that is devoted primarily to agricultural use as defined by rule." Class 7, "**Other**," includes the buildings and improvements and the land necessary for their location and convenience.

Class 5 - **Undeveloped Land** - The 2003 Wis. Act 33 changed the name of class 5 to Undeveloped. Swampland or wasteland is defined by statute to include bog, marsh, lowland brush, uncultivated land zoned as shoreland under sec. 59.692, Wis. Stats., and shown as a wetland on a final map under sec. 23.32, Wis. Stats., or other nonproductive land not elsewhere classified. This class also includes land which because of soil or site conditions does not produce and is not capable of producing; such as rock outcropping, borrow pits, abandoned, depleted quarries, and other land not used and with no potential for use. Lakebeds of natural occurring, navigable waters are owned by the state and are considered undeveloped land even though the acreage may be listed in the deed of property owned by individuals. Revision of sec. 70.32(2)(a), Wis. Stats., excludes buildings and improvements from undeveloped lands.

Class 5m - **Ag Forest Land** - See Sec. 70.32(2)(c)1d, Wis. Stats., which defines the "agricultural forest" class of property

Class 6 - **Forest Land** - This class includes land, which is producing, or capable of producing commercial forest products.

Class 7 - **Other** - Effective 1/1/03 Wis. Act 109 created sec. 70.32(2)(c)1m, Wis. Stats. Defining "Other." 70.32(2)(c)1m states, " 'Other,' as it relates to par. (a) 7, means buildings and improvements; including any residence for the farm operator's spouse, children, parents, or grandparents; and the land necessary for the location and convenience of those buildings and improvements."

**Development Trends.** The majority of new development in the County is occurring in the cities and villages. Between 2000 and 2010 city and village populations grew by 13,963 or 19.7 percent, while the population in the towns grew by 2,225 or 8.1 percent. All incorporated communities experienced a growth in population over this decade with the greatest increase in population in the Village of Holmen (179.7%), the City of Onalaska (55.4%), and the Village of Bangor (35.6 %). In addition to the population increase the incorporated communities also experienced an increase of 3,259 housing units. This was a nearly twice as many new housing units as the Towns 1,663 new housing units. The incorporated communities with the greatest increase in housing units were the City of Onalaska, 1,538 more units, the Village of Holmen, 1,144 more units and the City of La Crosse, 395 more units. See Table 2-1 for additional information.

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### 3.0 LA CROSSE COUNTY RISK ASSESSMENT

The following is La Crosse County’s assessment of each of the natural hazards identified as occurring in the State of Wisconsin. Each natural hazard is assessed on the historical occurrence of the hazard, the vulnerability to a given hazard, the probability of the hazard occurring again and a local official’s opinion survey. A final risk assessment designation of high, moderate or low is then assigned to each hazard based on a total score from ratings within each of these four assessment factors. Each jurisdiction in the county has the same risk to each hazard with the exception of flooding, dam failure, wildfire, agricultural and landslide. The municipalities located along the Mississippi River, La Crosse River and Black River have a higher risk of riverine or flash flooding than those not located along these rivers. In addition incorporated communities are susceptible to stormwater flooding whereas unincorporated areas without large areas of impervious surfaces are not. See Maps 3-6 and 3-7 for flood prone areas. Only the areas below dams are susceptible to dam failure, see map 3-5 for locations of dams.

An overall risk assessment rating of 22 points or greater equates to a “high” risk assessment designation for a given hazard. A risk assessment rating of 15 to 21 points equates to a moderate risk assessment designation and a rating of 14 points or less results in a low risk assessment rating for a given hazard. Table 3-2 provides a summary of the ratings for all the natural hazards.

The following is a description of how the ratings are determined for each assessment and how these ratings result in the final risk assessment designation.

**Historical Occurrence Rating Criteria:**

Historical occurrence refers to the number of times a particular hazard occurred in the past. Because historical records for the hazards vary greatly each hazard is assessed on occurrences within a 25-year period.

• Less than 4 occurrences in the past 25 years =Low rating, 1-3 points
• 4 to 7 occurrences in the past 25 years = Moderately Low rating, 3-5 points
• 8 to 12 occurrences in the past 25 years = Moderately High rating, 5-7 points
• More than 12 occurrences in the past 25 years = High rating, 7-9 points

**Vulnerability Rating Criteria:**

Vulnerability is a measure of how people, buildings, structures, personal property, and other things considered important are adversely affected by a given hazard. Some aspects to help measure the magnitude of vulnerability in the county have been quantified in Tables 3-1 and 3-2. These tables show the maximum extent of vulnerability within the county. The vulnerability of a population, buildings, structures, transportation routes and businesses will vary from one community to another and from one hazard to another.

• Less than 10% of population or property adversely affected =	Negligible rating, 1-3 points
• Ten to less than 25% of population or property adversely affected =	Limited rating, 3-5 points
• Twenty Five to less than 50% of the population or property adversely affected =	Critical rating, 5-7 points
• More than 50% of the population or property adversely affected =	Catastrophic rating, 7-9 points

**Probability Rating Criteria:**

Probability rating is a measure of the likelihood and frequency of hazard occurring in the future.

• Less than 1% probability in the next 100 years =	Unlikely rating, 1-3 points
• From 1% and 10% probability in the next year or at least one chance in next 100 years =	Possible rating, 3-5 points
• Over 10% to nearly 100% probability in the next year or at least one chance in the next 10 years =	Likely rating, 5-7 points
• Nearly 100% chance in the next year =	Highly Likely rating, 7-9 points

**Local Official Hazard Survey Rating Criteria:**

In April of 2012 a local official's survey was mailed to village presidents, town chairman, mayors, chiefs of police, the sheriff, and fire department chiefs in the county. Each county official was asked to rank the county's natural hazards as high, medium, or low regarding their opinion on each hazard's threat to health and public safety.

<ul style="list-style-type: none"> <li>A majority of local officials were of the opinion that this hazard posed a "low" threat to health and public safety in comparison to the 17 other hazards =</li> </ul>	Low rating, 1-3 points
<ul style="list-style-type: none"> <li>A majority of local officials were of the opinion that this hazard posed a "medium" threat to health and public safety in comparison to the other 17 hazards =</li> </ul>	Medium rating, 3-6 points
<ul style="list-style-type: none"> <li>A majority of local officials were of the opinion that this hazard posed a "high" threat to health and public safety in comparison to the other 17 hazards =</li> </ul>	High rating, 6-9 points

**Risk Assessment Designation:**

The risk assessment designation is determined by adding the rating points assigned from historical occurrences, vulnerability, probability and the local official survey factors. These summations for each hazard are then assigned a low, moderate, or high threat based on numerical rank.

<ul style="list-style-type: none"> <li>A combined risk factor rating of 11 points or less =</li> </ul>	Low Threat
<ul style="list-style-type: none"> <li>A combined risk factor rating of 12 to 22 points =</li> </ul>	Moderate Threat
<ul style="list-style-type: none"> <li>A combined risk factor rating of 23 points or more =</li> </ul>	High Threat

**3.1 La Crosse County, Hailstorm Risk Assessment**

**Hailstorm Definition:** A hailstorm is a weather condition where atmospheric water particles form into rounded or irregular masses of ice that fall to earth. Hail is a product of strong thunderstorms that frequently move across the state. Hail normally falls near the center of the moving storm along with the heaviest rain; however, the strong winds at high altitudes can blow the hailstones away from the storm center, causing unexpected hazards at places that otherwise might not appear threatened.

Hailstorms normally range from the size of a pea to that of a golf ball, but sizes larger than baseballs have occurred with the most severe storms. They form when subfreezing temperatures cause water in thunderstorm clouds to accumulate around an icy core. When strong underlying winds no longer can support their weight, the hailstones fall earthward. Hail tends to fall in swaths that may be 20-115 miles long and 5-30 miles wide. The swath is not normally a large, continuous bombardment of hail, but generally consists of a series of hail strikes that are produced by individual thunderstorm clouds traversing the same general area. Hail strikes are typically one-half mile wide and five miles long. They may partially overlap, but often leave completely undamaged gaps between them.

Hailstorms are considered formidable among the weather and climatic hazards to property and crops of the interior plains of the U.S. because they dent vehicles and structures, break windows, damage roofs and batter crops to the point that significant agricultural losses result. Serious injury and loss of human life, however, are rarely associated with hailstorms.

**Hailstorm History and Frequency:**

1960's:	11 reported events by NCDC, 4/15/60, 6/12/61, 6/10/62, 7/18/64, 7/4/66, 8/15/66, 4/16/67, 6/20/68, 6/21/68, 8/19/68, 9/8/68, Hail size ranged from 0.75" to 2.75"
1970's:	3 reported events by NCDC, 8/10/71, 7/16/72, 7/29/73, Hail size ranged from 0.75" to 4"
1980's:	13 reported events by NCDC – 7/15/80, 9/20/80, 4/3/81, 4/27/84, 9/24/84, 7/9/85, 4/25/86, 7/30/86, 5/8/88, 4/24/89, 7/8/89, 8/4/89, 10/15/89, Hail size ranged from 0.75" to 3"
1990's:	17 reported events by NCDC – 6/19/90, 6/26/90, 9/9/90, 9/9/91, 5/16/92, 7/19/92, 5/27/93 (C. La Crosse), 5/16/95 (C. Onalaska), 5/18/96, 10/29/96, 10/29/96, 6/5/97 (Holmen), 7/5/97 (Mindoro), 8/23/97, 3/39/98 (Barre Mills), 6/24/98 (Holmen), 8/9/98 (St. Joseph), 7/8/99 (C. Onalaska), 7/8/99 (V. Bangor) Hail sized ranged from 0.75" to 1.00"
2000's:	18 reported events by NCDC – 5/18/00, 4/23/01 (C. Onalaska & Mindoro), 5/10/01 (Newburg Corners), 6/11/01, 6/17/01 (V. Holmen, C. Onalaska & V. West Salem), 6/18/01 (V. Holmen), 4/18/02 (V. Holmen & C. Onalaska), 4/17/04, 7/19/04, 3/30/05 (C. Onalaska),

	6/29/05 (C. Onalaska), 6/7/2007 (West La Crosse, West Salem, Bangor, Rockland- \$847,000 PD), 5/30/2008 (St. Joseph), 6/7/2008 (Holmen-\$2,000 PD), 6/28/2008, 7/10/2008 (Holmen and Onalaska), 4/30/2010 (West La Crosse, Holmen, Onalaska), 6/6/2010 (West Salem). Hail size ranged from 0.75" to 3.5". 7/04 storm received a Presidential Disaster Declaration.
2011	3 reported events by NCDC - 4/10/2011 (La Crosse County-\$20-\$30 million PD), 5/22/11 (La Crosse, Onalaska, and Barre Mills), 6/6/2011. Hail size ranged from 0.75" to 2.5".

Wisconsin averages between two to three hail days per year as recorded by National Weather Service stations, although this may not be indicative of the number of hailstorms which occur within a county or larger area during any given hail season. The months of maximum hailstorm frequency are May through September with approximately 85% of hailstorms occurring during this period. Unfortunately, hailstorms are most frequent during the four months of the growing and harvesting seasons for most crops in the state. According to the National Weather Service, about 20% of all severe weather events in Wisconsin are hail events in which hailstones are at least ¾ inch in diameter. Serious hailstorms with hailstones 1.5 inch or larger in diameter are not common.

The National Weather Service which also keeps track of storm events reports that La Crosse County experienced 110 hail events from 1982 through 2011. This was above the average for Wisconsin counties of 69. Neighboring Jackson, Vernon, Trempealeau and Monroe counties experienced 79, 88, 86 and 136 hail events during this same time period. If the National Weather Service numbers continue for the next 5 years, La Crosse County can expect to have 4 hail events per year or 20 events in total.

**Hailstorm Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns hailstorms a risk factor of 25 indicating this natural hazard is a high risk to the county. Critical facilities vulnerability to hailstorms would be limited primarily to damage to the building's roof and windows and would not interrupt services provided by these facilities except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For most businesses and industries hailstorms pose a moderate hazard risk with damage confined to building roofs and windows. Examples of businesses that are particularly vulnerable to hail damage include car and truck dealerships that display vehicles outdoors, greenhouses, and nurseries that store plants and trees outdoors. Auto dealerships can suffer significant losses to their vehicles.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. As indicated by these figures agriculture is a significant part of the county's economy. The overall threat of hailstorm is ranked as high and agricultural crops can sustain significant damage and economic loss from hailstorms. Hailstorms occur most frequently in the county in the months from May through September, which coincide with the planting and harvesting of most crops in the county making those crops vulnerable to hailstorms.
- Roads and Highways. Hail damage can occur to any vehicle exposed to elements, whether moving or parked. Hail, although when it is lying on the ground, can cause icing conditions, usually is melted before mitigation action such as sanding, salting, or plowing is done. It can occur in seasons when highway trucks are not setup for snow and ice control.
- Railroads. Hail can cause cessation of rail work crews. Hail can cause damage to windshields and headlight covers of locomotives and Maintenance of Way (M of W) equipment. Hail can cause damage to signal lamp covers. Hail can also cause damage to building roofs.
- Airway. Hail can cause damage to aircraft skin and control surfaces. Such damage may be critical to the safety and integrity of the aircraft and its control. Hail can cause icing and clogging of engines of small planes in flight. Hail can damage runway lighting fixtures.
- Waterways. Hail can damage watercraft windows, lights, instruments and communication devices.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to hailstorms would be limited to damage to the roofs, windows and electrical service, and would not interrupt services provided by these facilities except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to hailstorms would be limited to the building roofs, windows and electrical service and would not interrupt services provided by these facilities except in extreme cases.

- **Hazardous Material Sites.** Hazardous material containers in transport can be breached by any accident to the transport mode caused by hail. Hazardous material in storage has no severe impacts caused directly by hail.

**Hail Storm Risk Assessment Designation**

Hail Storm Historical Occurrence Rating: High - 9

Hailstorm Vulnerability Rating: Negligible - 2

Hailstorm Probability Rating: Highly Likely - 8

Hailstorm Local Official Survey Rating: Medium - 6

Hail Storm Risk Assessment Designation: **High Threat - 25 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Hailstorm Hazard Mitigation Ideas:** • Remove or protect vulnerable attachments such as awnings, antennas and signs on buildings • Replace vulnerable shingles and siding with hail resistant building materials • Protect or relocate essential utility and communication equipment • Provide county residents with public information on hailstorms during severe weather awareness • Promote the purchase of hail insurance • Have at least one highway truck at each shop, with a plow and sander that can easily be quickly mounted to respond to emergency situations • Provide a shed or covered area to store government vehicles if a hail storm is predicted

**3.2 La Crosse County, Lightning Storm Risk Assessment**

**Lightning Storm Definition:** Lightning is a sudden and violent discharge of electricity from within a thunderstorm due to a difference in electrical charges and represents a flow of electrical current from cloud-to-cloud or cloud-to-ground. Nationally, lightning causes extensive damage to buildings and structures, kills or injures people and livestock, starts untold numbers of forest fires and wildfires and disrupts electromagnetic transmissions.

To the general public lightning is often perceived as a minor hazard. However, lightning-caused damages, injuries and deaths establish lightning as a significant hazard associated with any thunderstorm in any part of the state. Damage from lightning occurs four ways:

- 1) Electrocution/severe shock of humans and animals;
- 2) Vaporization of materials along the path of the lightning strike;
- 3) Fire caused by the high temperatures associated with lightning (10,000-60,000°F); and
- 4) The sudden power surge that can damage electrical/electronic equipment.

Large outdoor gatherings (sporting events, concerts, campgrounds, etc.) are particularly vulnerable to lightning strikes that could result in injuries and deaths. Early warning of lightning hazards, combined with prudent protective actions, can greatly reduce the likelihood of lightning-related injuries and deaths.

**Lightning Storm History and Frequency:**

1990's:	2 reported events by NCDC – 5/27/93, 7/11/94(La Crosse, 1 injury)
2000's:	5 reported events by NCDC –0/13/05 (C. La Crosse - \$1,000 PD), 6/25/06 (La Crosse - \$75,000 PD), 7/19/06 (V. Holmen - \$3,000 PD), 8/3/09 (C. Onalaska - \$16,000 PD), 8/20/10 (New Amsterdam - \$5,000 PD).
2011	2 reported events by NCDC – 7/11/11 (La Crosse -\$8,000 PD), 8/23/11 (La Crosse - \$5,000 PD).

Wisconsin has a high frequency of property losses due to lightning. Insurance statistics show that two out of every 100 farms are struck by lightning or have a fire that may have been lightning-caused each year. According to National Climatic Data Center reports, La Crosse County experienced 9 lightning events between 1990 and 2011 which caused \$113,000 in property damage and 1injury but no deaths recorded. If this trend continues La Crosse County can expect to experience one lightning event every two years which would causing approximately \$12,500 in property damage. Over the course of this plan La Crosse County should expect 2 lightning events causing \$25,000 in property damage.

## Lightning Vulnerability Assessment

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns lightning a risk factor of 17 indicating this natural hazard is a moderate risk to the county. Critical facilities vulnerability to lightning is generally perceived as a minor hazard. The damages caused by lightning to buildings and the potential injuries and deaths resulting from a lightning strike established lightning as a significant hazard associated with any thunderstorm. Lightning can cause electrocution and severe shock in humans, fires in buildings and the sudden power surges resulting from lightning can cause significant damages to a facility's electrical services, and electronic equipment such as computers and motors and communications systems. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. For most business and industries, lightning poses a moderate hazard risk. The damages caused by lightning to buildings and the potential injuries and deaths resulting from a lightning strike established lightning as a significant hazard associated with any thunderstorm. Lightning can cause electrocution and severe shock in humans; fires in buildings and the sudden power surges resulting from lightning can cause significant damages to a business/industries electrical services, and electronic equipment such as computers and motors and communications systems. The manufacturing industry could experience disruptions caused by lightning strikes to their product processes that could result in the company sustaining economic losses.
- Agriculture. The overall hazard risk ranking for lightning for agriculture is high. The damages caused by lightning strikes can be a significant hazard because lightning strikes can cause electrocution or severe shock to humans and farm animals, fire risk to buildings and sudden power surges associated with lightning strikes can cause significant damage to electrical services, motors and milking machinery. Workers in fields and animals in open spaces are particularly vulnerable to lightning strikes. Tree plantations are also susceptible to fires caused by lightning strikes.
- Roads and Highways. Severe lightning in Wisconsin is invariably accompanied by heavy rains, which can limit visibility for drivers. Lightning can cause trees, or parts of trees, to suddenly fall across the road. Lightning can be a hazard to people who attempt to leave their vehicle at service plazas, etc.
- Railroads. Severe lightning can be hazardous to railway track and other workers. Lightning can cause trees, or parts of trees, to suddenly fall across railroad tracks. Lightning can cause electric signals and remote controlled switches to malfunction. Lightning can cause radio communications outages.
- Airway. Lightning can cause malfunction of aircraft communications and navigation devices. Lightning can be hazardous to airport workers and passengers who must access the aircraft by walking across an open field/taxi area.
- Waterways. Lightning can be hazardous to workers exposed on decks, or at locks during the storm. Lightning can disrupt electronic devices and communications.
- Municipal Water. In the county there are 44 municipal wells and waters systems in operation, see Table 3-11. These facilities vulnerable to lightning would include fire damage to facilities from lightning strikes, damage to a facility's electrical service, electronic equipment and motors. Municipal water service would not be interrupted except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities operating in the county, see Table 3-12. These facility's vulnerability to lightning would include fire damage to facilities from lightning strikes, damage to the facilities electrical service, electronic equipment and motors and as a result of power surges, wastewater treatment service would not be interrupted except in extreme cases.
- Hazardous Material Sites. The impact of lightning storms on hazardous material is specific to the type of material and its storage or transportation conditions. A lightning strike to a fixed storage building, while having little impact on transportation modes, could start a fire or explosion with the stored hazardous material.

## Lightning Storm Risk Assessment Designation

Lightning Storm Historical Occurrence Rating: High - 3

Lightning Storm Vulnerability Rating: Negligible - 2

Lightning Storm Probability Rating: Highly Likely - 7

Lightning Storm Local Official Survey Rating: Medium/High - 5

Lightning Storm Risk Assessment Designation: **Moderate Threat - 17 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Lightning Storm Hazard Mitigation Ideas:**

- Communities may use outreach programs to promote awareness of thunderstorm/lightning dangers – for example: consider placing lightning safety tips and/or action plan in game programs, flyers, scorecards etc. and during Severe Weather Awareness Week emphasize issues on weather related disaster preparedness through public education
- Local and state governments can invest in public early warning systems/networks, as well as train people to serve as weather spotters
- Promote establishment of indoor warning systems at all critical facilities and public gathering locations
- When thunder is heard, seek shelter inside the nearest building or enclosed vehicle (e.g., a car, bus or truck). If shelter is not available, avoid trees or tall objects because electricity may be conducted from that object to other nearby objects or persons
- Avoid high ground, water, open spaces and metal objects (golf clubs, umbrellas, fences, tools)
- When indoors, turn off appliances and electronic devices and remain inside until the storm passes
- Surge protection can be installed on critical electronic equipment (*protection devises such as lightning rods and grounding can be installed on critical facilities*)
- Remove taller trees in the vicinity of vulnerable structures
- Specimen trees growing along roadways, or in rest areas or landscaped areas, can be protected by properly installed lightning rods
- Local airports can suspend operations during severe lightning storms
- Major hazardous material storage sites should be protected with properly installed lightning rods

### 3.3 La Crosse County, Thunderstorm Risk Assessment

**Thunderstorm Definition:** Thunderstorms are severe and violent forms of convection produced when warm moist air is overrun by dry cool air. As the warm air rises, *thunderheads* (cumulo-nimbus clouds) form and cause the strong winds, lightning, thunder, hail, and rain associated with these storms. The National Weather Service definition of a *severe thunderstorm* is a thunderstorm event that produces any of the following: downbursts with winds of 58 miles per hour or greater (often with gusts of 74 miles per hour or greater), hail  $\frac{3}{4}$  of an inch in diameter or greater, or a tornado.

The thunderheads formed may be a towering mass six miles or more across and 40,000 to 50,000 feet high. It may contain as much as 1.5 million tons of water and enormous amounts of energy that often are released in the form of high winds, excessive rains and three violently destructive natural elements: lightning, tornadoes, and hail.

On the ground directly beneath the storm system, the mature thunderstorm is initially felt as rain, which is soon joined by a strong downdraft. The downdraft spreads out from the cloud in gusting divergent winds and brings a marked drop in temperature. Even where the rain has not reached the ground, this cold air stream flowing over the earth's surface is a warning that the storm's most violent phase is about to mature.

A thunderstorm often lasts no more than 30 minutes in a given location because an individual thunderstorm cell frequently moves between 30 and 50 miles per hour. However, strong frontal systems may spawn more than one squall line composed of many individual thunderstorm cells. Thunderstorms may occur individually, in clusters or as a portion of a large line of storms that may stretch across the entire state. Thus, it is possible that several thunderstorms may affect an area in the course of a few hours.

Severe thunderstorms can cause injury or death and can also result in substantial property damage. They may cause power outages, disrupt telephone service and severely affect radio communications and surface/air transportation, which may seriously impair the emergency management capabilities of the affected jurisdictions.

**Thunderstorm History and Frequency:**

1960's	16 reported events by NCDC – 8/3/60, 5/14/61, 6/10/61, 7/30/61, 9/21/61, 5/22/62, 8/29/62, 5/10/63, 6/7/63, 6/8/63, 8/2/63, 5/5/65, 7/10/66, 6/8/67, 8/19/68, 6/26/69 Magnitude of winds for these events ranged from 50 knots to 85 knots.
1970's:	12 reported events by NCDC – 7/18/70, 6/12/71, 6/24/71, 7/18/71, 8/10/71, 6/11/73, 7/29/73, 6/20/74, 6/13/76, 7/14/77, 6/25/78, 6/19/79 Magnitude of winds for these events ranged from 50 knots to 65 knots.
1980's:	15 reported events by NCDC – 6/5/80, 6/7/80, 6/23/81, 5/17/82, 6/30/83, 7/3/83, 7/19/83, 8/28/83, 4/27/84, 7/10/84, 7/14/84, 7/16/84, 6/7/85, 7/9/85, and 8/12/85. Magnitude of winds for these events ranged from 50 knots to 109 knots (7/9/85).
1990's:	48 reported events by NCDC – 6/2/90, 8/26/90, 5/29/91, 7/7/91, 9/13/94 (Holmen), 11/18/94 (1 injury, \$10,000 PD), 4/3/95 (2 injuries), 7/27/95 (3 miles East of C. La Crosse, \$200,000 PD), 8/13/95 (Holmen), 5/19/96 (Holmen), 5/19/96 (3 miles East of C. La Crosse), 8/7/96 (3 miles South of C. La Crosse, \$5,000 PD), 8/7/96 (5 miles South of C. La Crosse), 8/7/96 (Holmen), 4/5/97 (3 miles East of C. La Crosse), 6/28/97 (C. La Crosse, \$5,000 PD), 7/13/97 (Bangor, \$2,000 PD), 7/17/97 (Holmen), 8/23/97 (C. Onalaska, \$18,000 PD), 5/15/98 (3 miles East of C. La Crosse), 5/30/98 (La Crosse Municipal Airport, \$20,000 PD), 5/30/98 (C. Onalaska, \$6,000 PD),

	3/30/98 (3 miles East of C. La Crosse), 6/18/98 (5 miles South of C. La Crosse, \$15,000 PD), 6/18/98 (3 miles East of C. La Crosse), 6/18/98 (New Amsterdam, \$3,000 PD), 6/18/98 (West Salem, 13 injuries, \$20,000 PD), 6/18/98 (St. Joseph), 6/18/98 (Middle Ridge), 6/18/98 (10 miles North of C. La Crosse, \$6,000 PD), 6/26/98 (Midway), 6/26/98 (Holmen, \$30,000 PD), 6/26/98 (New Amsterdam), 6/26/98 (St. Joseph, \$35,000 PD, \$25,000 CD), 6/27/98 (C. La Crosse, \$200,000 PD, \$75,000 CD, Presidential Disaster Declaration for county), 6/27/98 (2 miles East of C. La Crosse), 6/27/98 (St. Joseph, \$2,000 PD, \$1,000 CD), 6/27/98 (2 miles South of C. La Crosse, \$40,000 PD, \$12,000 CD), 7/20/98 (West Salem, \$14,000 PD), 8/9/98 (Holmen), 8/9/98 (New Amsterdam, \$35,000 PD, \$20,000 CD), 8/9/98 (Holmen, \$1,000 PD), 8/9/98 (C. Onalaska, \$45,000 PD), 8/9/98 (La Crosse Municipal Airport), 8/9/98 (St. Joseph, \$20,000 PD), 6/8/99 (C. La Crosse, \$40,000 PD), 7/8/99 (2 miles East of C. La Crosse, \$85,000 PD), 7/8/99 (Barre Mills, \$150,000 PD, \$40,000 CD). Magnitude of winds for these 48 events ranged from 50 knots to 81 knots.
2000's:	28 reported events by NCDC – 6/13/00 (C. La Crosse, \$8,000 PD), 8/26/00 (3 miles South of C. La Crosse, \$5,000 PD), 6/11/01 (V. Holmen, \$1,000 PD), 6/11/01 (New Amsterdam, \$1,000 PD), 6/11/01 (Mindoro, \$1,000 PD), 4/17/02 (C. La Crosse), 7/30/02 (C. La Crosse, \$2,000 PD), 7/30/02 (West Salem, \$1,000 PD), 6/24/03 (C. La Crosse), 7/4/03 (6 miles South of C. La Crosse, \$3,000 PD, \$2,000 CD), 7/4/03 (La Crosse Municipal Airport, \$1,000 PD), 7/4/03 (C. La Crosse, \$4,000 PD, \$1,000 CD), 7/4/03 (C. Onalaska, \$1,000 PD, \$2,000 CD), 7/4/03 (West Salem, \$1,000 PD, \$1,000 CD), 7/19/04 (C. La Crosse, \$13,000 PD), 5/26/05 (La Crosse Municipal Airport), 8/9/05 (Barre Mills), 9/12/05 (Holmen, \$1,000 PD), 9/13/05 (New Amsterdam, \$2,000 PD), 5/14/2007 (West La Crosse and Onalaska, \$7,000 PD), 5/23/07 (French Island, \$1,500 PD), 6/7/07 (West Salem), 8/11/07 (French Island, Mindoro, Holmen, West Salem, La Crosse, Lytle - \$10,000 PD), 8/14/07 (French Island, La Crosse and Middle Ridge- \$8,000 PD), 8/28/07 (Holmen), 9/21/2007 (La Crosse, West Salem, Rockland-\$28,000 PD), 6/6/08 (La Crosse and West Salem), 6/7/08 (Onalaska and Barre Mills- \$2,000 PD), , 7/7/08 (La Crosse & West Salem-\$5,000 PD), 7/10/08 (French Island), 5/4/10 (West La Crosse-\$2,000 PD), 6/26/10 (Midway, La Crosse and West Salem-\$2,000 PD), 7/14/10 (French Island and La Crosse-\$1,000 PD) , 7/24/10 (South La Crosse and Barre Mills-\$6,000 PD), 8/20/10 (La Crosse and Onalaska). Magnitude of winds for these 28 events ranged from 50 knots to 65 knots.)
2011	5 reported events by NCDC - 4/10/11 (La Crosse), 5/22/11 (La Crosse), 6/18/2011 (French Island and Onalaska-\$9,000 PD), 7/1/2011 (Onalaska and West La Crosse-\$7,000 PD), and 9/2/11 (La Crosse, French Island and Onalaska-\$20,000 PD). Magnitude of winds for these 5 events ranged from 52 knots to 76 knots.)

PD = Property Damage and CD = Crop Damage

Thunderstorm frequency is measured in terms of incidence of *thunderstorm days* or days on which thunderstorms are observed. Wisconsin averages between 30 and 50 thunderstorm days per year depending on location, with the southwestern area of the state normally having more thunderstorms than the rest of the state. A given county may experience ten or more thunderstorm days per year

According to the National Weather Service Publication, *Storm Data*, in the past 30 years, Wisconsin has experienced hurricane force winds of 75 mph or higher on 120 days or about 4 days per year on average. Within the same period there have been 17 days when winds at or above 100 mph have been documented. This means that winds similar to a Category 2 Hurricane are experienced about one day every two years on average in Wisconsin. Thunderstorm winds can be fatal. During the period from 1982 to 2001, 20 fatalities have been attributed to wind from severe thunderstorms.

In Wisconsin, thunderstorms and their associated high winds can occur throughout the state during any month of the year with little or no notice, but their highest frequency is during the period of May through September. They also occur most often between the hours of noon and 10:00 p.m.

As shown in the history above, the National Climatic Data Center (NCDC) reported 124 thunderstorm events in La Crosse County from 1960-2011. No damage amounts were reported before 1990. Since 1990 there have been 81 events which have caused \$1,157,150 in property damage, \$177,000 in crop damage and caused 14 injuries. This is an average of 2.9 events, \$27,551 in property damage, \$4,214 in crop damage and less than 1 injury per year. Using this data La Crosse County can expect to have 15 thunderstorm events over the next 5 years causing \$137,700 in property damage, \$21,000 in crop damage and 2 injuries. Another source of storm data is the National Weather Service. They reported that the 72 counties in Wisconsin averaged 6 thunderstorms with winds of 75 mph or greater from 1970-2001. La Crosse County was above that average as they had eleven thunderstorms with hurricane force winds during that time span.

**Thunderstorm Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns thunderstorms a risk factor of 25 indicating this natural hazard is a high risk to

the county. Thunderstorms can produce heavy rains and downbursts that induce straight-line winds with high wind speeds. Buildings could be damaged by the high winds and temporary flooding could occur in low-lying areas where these facilities are located. Thunderstorms can also produce three violently destructive natural elements, which include lightning, tornadoes, and hailstorms, which are discussed separately in this chapter. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.

- Business and Industry. Thunderstorms can cause damage to buildings by the high winds created by the storms and temporary flooding could occur in low-lying areas where these facilities are located. Thunderstorms can also produce violent destructive natural elements including lightning, tornadoes and hailstorms that can cause severe damage to buildings and can cause injuries and deaths to human.
- Agriculture. Thunderstorms can cause significant damage to agricultural crops, buildings and livestock. Heavy rains can cause erosion, wash out seedlings and create standing water in fields. Downspouts and straight-line winds can cause damage to buildings and flatten crops. The other natural elements that are produced by thunderstorms, including lightning, hailstorms and tornadoes can cause severe damage to crops, buildings and livestock.
- Roads and Highways. Heavy rains can limit visibility for drivers. Electric traffic signals can malfunction. Washouts and spot flooding can occur. Debris cleanup from roadway is needed soon after the storm.
- Railroads. Signals and electric switches can malfunction. Washouts and spot flooding can occur. Debris cleanup from tracks and right-of-way is needed soon after the storm. Damage to freight in poorly fitted cars or covered loads can cause problems, often discovered days or weeks later.
- Airway. Flight operations of aircraft, especially small planes, can be disrupted during the storm. Planes from other areas passing over the County may put down at local private airports as "port of refuge". Small aircraft parked on ground at private airports may be damaged.
- Waterways. Poor visibility during the storm can cause safety problems to pilots. Dangerous conditions may exist for deck crews and lock crews working outside during the storm. Locking may be aborted. Improperly moored barges could break loose from fleets or terminals.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to thunderstorms would include damage from high winds and heavy rainfall and could pollute underground wells. Other natural elements that are produced by thunderstorms include lightning, hailstorms, and tornadoes and can cause severe damage to municipal water facilities and equipment. Services provided by these facilities would not be interrupted except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. The facilities vulnerability to thunderstorms would include damage to buildings and equipment from high winds. Heavy rainfall could cause holding ponds to overflow and treatment facilities could be inundated with water that could cause system failure. Thunderstorms can also produce lightning, hailstorms and tornadoes that could severely damage the wastewater treatment facilities and equipment. Services provided by these facilities would not be interrupted except in extreme cases.
- Hazardous Material Sites. The impact of thunderstorms on hazardous material is specific to the type of material and its storage or transportation conditions. Material in a state of transportation is more vulnerable than material in storage.

### **Thunderstorm Risk Assessment Designation**

Thunderstorm Historical Occurrence Rating: High - 9

Thunderstorm Vulnerability Rating: Negligible - 2

Thunderstorm Probability Rating: Highly Likely - 8

Thunderstorm Local Official Survey Rating: Medium/High - 6

Thunderstorm Risk Assessment Designation: **High Threat – 25 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Thunderstorm Hazard Mitigation Ideas:**

- Communities may use outreach programs to promote awareness of thunderstorm dangers - for example: during Severe Weather Awareness Week emphasize issues on weather related disaster preparedness through public education
- Local and state governments can invest in public early warning systems/networks, as well as train people to serve as weather spotters
- Provide weather radios to critical areas
- Public and private buildings can be designed with structural bracing, shutters, laminated glass in window panes, and hail resistant roof shingles or flashing to minimize damage
- Bury power lines with consideration for maintenance and repair
- Promote indoor warnings at all critical facilities
- Communities may adopt building codes requiring weatherproofing such as wall and roof anchoring,



reinforcement of walls, ceilings and floors, etc. • Cleaning and clearing culverts, drains, and waterways must be kept uppermost as a maintenance practice • An emergency plan for retrieving and securing run away barges should be developed in cooperation with the barge towing industry and water-based terminals

### 3.4 La Crosse County, Tornado/High Winds Risk Assessment

**Tornado/High Winds Definition:** A tornado is a relatively short-lived storm composed of an intense rotating column of air, extending from a thunderstorm cloud system. It is nearly always visible as a funnel, although its lower end does not necessarily touch the ground. Average winds in a tornado, although never accurately measured, are between 100 and 200 miles per hour, but some may have winds exceeding 300 miles per hour. For standardization, the following are National Weather Service definitions of a tornado and associated terms:

- *Tornado* – a violently rotating column of air that is touching the ground
- *Funnel Cloud* – a rapidly rotating column of air that does not touch the ground
- *Downburst* – A strong downdraft, initiated by a thunderstorm, which induces an outburst of straight-line winds on or near the ground. They may last anywhere from a few minutes in small-scale microbursts to periods of up to 20 minutes in large, longer macro-bursts. Wind speeds in downbursts can reach 150 mph, in the range of a tornado.

A tornado path averages four miles, but may reach up to 300 miles in length. Widths average 300-400 yards, but severe tornadoes have cut swaths a mile or more in width, or have formed groups to two or three funnels traveling together. On the average, tornadoes move between 25 and 45 miles per hour, but speeds over land of up to 70 mph have been reported. Tornadoes rarely last more than a couple of minutes over a spot or more than 15-20 minutes in a ten-mile area, but their short periods of existence do not limit their devastation of an area.

The destructive power of a tornado results primarily from its high wind velocities and sudden changes in pressure. Wind and pressure differentials probably account for 90 percent of tornado-caused damage. Since tornadoes are generally associated with severe storm systems, they are usually accompanied by hail, torrential rain and intense lightning. Depending on their intensity, tornadoes can uproot trees, down power lines and destroy buildings. Flying debris can cause serious injury and death.

Pre January 31, 2007 TORNADO DAMAGE SCALE			
Scale	Wind Speeds	Damage	Frequency
F0	40 to 72 MPH	Some damage to chimneys, TV antennas, roof shingles, trees and windows	29%
F1	73 to 112 MPH	Automobiles overturned, carports destroyed, trees uprooted	40%
F2	113 to 157 MPH	Roofs blown off houses, sheds and outbuildings demolished, mobile homes overturned	24%
F3	158 to 206 MPH	Exterior walls & roofs blown off homes. Metal buildings collapsed or are severely damaged. Forests & farmland flattened.	6%
F4	207 to 260 MPH	Few walls, if any, standing in well-built homes. Large steel and concrete missiles thrown far distances.	2%
F5	261 to 318 MPH	Homes leveled with all debris removed. Schools, motels and other larger structures have considerable damage with exterior walls and roofs gone. Top stories demolished.	Less than 1%
Post January 31, 2007 TORNADO DAMAGE SCALE			
Scale	Wind Speeds	Damage	Frequency
EF0	60 to 85 MPH	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees	53.50%
EF1	86 to 110 MPH	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; broken windows	31.60%
EF2	111 to 135 MPH	Considerable damage. Roofs torn off well-constructed houses; foundations shifted; mobile homes destroyed; trees uprooted; cars lifted	10.70%
EEF3	136 to 165 MPH	Severe damage. Entire stories of houses destroyed; damage to large buildings; trains overturned	3.40%
EF4	166 to 200 MPH	Devastating damage. Houses leveled; and cars thrown	0.70%
EF5	> 200 MPH	Total destruction. Houses swept off foundation; automobile sized missiles thrown through the air; high rise buildings deformed	Less than 0.1%

The new scale takes into account quality of construction and standardizes different kinds of construction. Meteorologists and engineers deemed the wind speeds on the original scale as being too high, and engineering studies indicated that slower winds than initially estimated cause the respective degrees of damage.

Downbursts are characterized by straight-line winds. Downburst damage is often highly localized and resembles that of tornadoes. There are significant interactions between tornadoes and downbursts and a tornado's path can also be affected by downbursts. Because of this, the path of a tornado can be very unpredictable, including veering right and left or even a U-turn.

**Tornado/High Winds History and Frequency:**

1950's:	2 reported events by NCDC –4/26/54 (\$3,000 PD, F1Magnitude), 4/19/57 (No recorded damage, F2 Magnitude)
1960's:	5 reported events by NCDC. 5/14/61 (F2 Magnitude, \$25,000 PD), 5/5/65 (F3 Magnitude, 1 Injury, \$2,500,000 PD), 7/10/66 (F1 Magnitude, \$25,000 PD), 6/15/67 (F0 Magnitude, \$3,000 PD).
1970's:	No events reported.
1980's:	2 reported events by NCDC – 6/5/80 (F2 Magnitude, \$250,000 PD), 6/23/81 (F1 Magnitude, \$250,000 PD).
1990's:	7 reported events (2 <i>tornadoes</i> & 5 <i>high wind</i> ) by NCDC – 11/18/94 (High Winds, 1 Injury, \$10,000 PD), 4/3/95 (Microburst, 2 Injuries), 6/28/95 (C. Onalaska, F0 Magnitude), 4/6/97 (Winds of over 70 mph in La Crosse & 4 other counties causing \$45,000 in PD), 5/15/98 (3 miles West of West Salem, F0 Magnitude, 1 Injury, \$40,000 PD), 11/10/98, (Winds of up to 93 mph recorded, affected La Crosse and 12 other counties, \$1.7 million PD/1injury/2deaths), 7/8/99 (High winds 2 miles East of C. La Crosse, \$85,000 PD).  1 reported event reported by Wisconsin Emergency Management – 1998 High Winds and Severe Storms, \$11.1million in Public-Government Property and Facilities Damage and \$36.8 million in Private-Individual Property, Crop and Facilities Damage to La Crosse and 13 other counties, <i>Presidential Disaster Declaration</i> .
2000's:	7 reported events (2 <i>tornadoes</i> & 5 <i>high winds</i> ) by NCDC – 4/7/01 (Winds of 60-70 mph in La Crosse and 9 other counties, \$12,000 PD), 10/25/01 (Winds of 40-50 mph in La Crosse and 12 other counties, no damages recorded), 4/18/04 (Strong Winds, \$1,000 PD), 9/13/05 (3 miles North of Holmen, F1 Magnitude, \$10,000 PD), 6/7/2008 (2 miles north of Middle Ridge, F1 Magnitude, \$93,000 PD and \$10,000 CD), 6/11/2010, 10/26/2010 (La Crosse-\$15,000 PD).
2011:	1 reported event (one tornado) by NCDC-5/22/11 (City of La Crosse, F2 Magnitude, 15 Million PD, 200 damaged buildings and 9 destroyed homes; another tornado tracked from extreme eastern La Crosse County into Monroe County).

PD = Property Damage and CD = Crop Damage

All counties in Wisconsin have recorded at least three tornadoes in the period for 1844-2011. The National Weather Service reported that La Crosse County experienced 22 tornadoes during this period. The National Climatic Data Center recorded 13 hurricane-force winds events (winds ≥ 75 mph) from 1970-2011 in La Crosse County. In 1998, High winds in La Crosse and 13 other counties caused so much damage that the region received a Presidential Disaster Declaration. The history above details tornadoes and high winds in the County from 1954 through 2011.

According to NCDC between 1990 and 2011 La Crosse County experienced 5 tornadoes. These 5 tornadoes caused \$15,143,000 in property damage, with reported damages ranging from \$0 to \$15,000,000. Using this historical data La Crosse County can expect to experience a tornado once every 4.4 years, which will cause \$3 million in property damage.

**Tornado/High Winds Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Hazard Risk Assignment assigns Tornado/High Winds a risk factor of 24 indicating this natural hazard is a high risk to the county. Critical facility's vulnerability to tornadoes and high winds could adversely affect 25 percent of the county's population or property in a single event, see Table 3-2. While tornadoes occur infrequently in the County, 22 occurred in the years 1844-2011. Tornadoes and High winds can cause critical facilities to sustain substantial damage or could be completely destroyed, causing injury and even death. High winds and storms occur more frequently than tornadoes in the county. In 1998, three events were reported in the county. In the events, La Crosse County and thirteen other county critical facilities sustained \$11.1 million in damages to public and government property and the area received a Presidential Disaster Declaration. The services provided by these facilities would not be interrupted except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.

- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For businesses and industries tornadoes and high winds pose a high hazard risk in the county. Buildings could sustain substantial damage or be completely destroyed causing injuries and even death. High winds occur more frequently and the extent of the damage to buildings is determined by wind speed. The damages could range from damage to chimney, roof shingles and broken windows to exterior wall and roofs blown off buildings or the buildings could collapse. Businesses that are particularly vulnerable to tornadoes and high winds are car and truck dealerships.
- **Agriculture.** Tornadoes and high winds pose a high hazard threat to agricultural buildings, crops and livestock. Tornadoes and high winds can cause significant damage to buildings and can cause injuries and deaths. These events can flatten crops and forests.
- **Roads and Highways.** Trailers, especially high profile, empty, or lightly loaded trailers, are susceptible to being blown over, or otherwise adversely impacted, by high winds. As wind speed increases, even sub-tornado speeds can adversely impact vehicle handling, especially on bridges or open areas with long wind sweeps. Gusty winds are particularly dangerous as they occur sporadically and unexpectedly, and can cause unpredicted handling problems. High winds can blow fine soil/sand and other debris across the road and cause visibility problems, or direct damage to vehicles being struck by large blowing debris. Debris blown by high winds, sometimes rather large pieces of wood, tree limbs, or trash barrels, are blown onto highways and can cause safety problems even after the winds have subsided. Vehicles traveling along highways located on ridge tops, and highways oriented in a north-south direction are more subject to high wind damage than are highways in valleys, or running parallel to the predominant wind direction.
- **Railroads.** High profile and/or lightly loaded cars, especially the “high cube” boxcars typically used to carry auto parts, can be blown over in high winds. Parked individual rail cars that are not properly chocked or brake set can be set in motion by high winds striking the car at a critical angle. Heavy debris striking trains during a high wind episode can cause direct damage to the locomotive or cars. Wind deposited debris on the tracks can cause safety problems after the winds have subsided.
- **Airway.** Light weight general aviation aircraft are the most prone to wind damage while parked on the ground.
- **Waterways.** High winds can have the same impact to craft on the Mississippi River as on lakes and oceans, with the wave action across long reaches of water creating potential for separating the barges and towboats. Waterway operations are controlled by the U.S. Coast Guard. Dangerous conditions may exist for deck crews and lock crews working outside during the storm. Locking may be aborted. Improperly moored barges could break loose from fleets or terminals.
- **Municipal Water.** In the county there are 44 municipal wells and water systems, see Table 3-11. These facilities and equipment could be significantly damaged or destroyed as a result of tornadoes and high winds. The services provided by these facilities would not be interrupted except in extreme cases.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities operating in the county, see Table 3-12. These facilities and equipment could be significantly damaged or destroyed as a result of tornadoes and high winds. The services provided by these facilities would not be interrupted except in extreme cases.
- **Hazardous Material Sites.** Hazardous material in transit is exposed to the same dangers as the mode of transport. Hazardous material in storage is more vulnerable than other material, and storage buildings should be storm reinforced.

#### **Tornado/High Winds Risk Assessment Designation**

Tornado/High Winds Historical Occurrence Rating: High - 7

Tornado/High Winds Vulnerability Rating: Critical - 5

Tornado/High Winds Probability Rating: Highly Likely - 6

Tornado/High Winds Local Official Survey Rating: High - 6

Tornado/High Winds Risk Assessment Designation: **High Threat – 24 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Tornado/High Winds Hazard Mitigation Ideas:**

- Local and state governments can invest in public early warning systems/networks, as well as train people to serve as weather spotters
- Provide weather radios to critical areas
- Encourage development of storm shelters in each community readily accessible to the public
- Strengthen public and private structures by using engineering measures and construction techniques that may include structural bracing, straps and clips, anchor bolts, laminated or impact-resistant glass, reinforced pedestrian and garage doors, window shutters, waterproof adhesive sealing strips, or interlocking roof shingles
- Construct and use concrete safe rooms in homes and shelter areas of

mobile home parks, fairgrounds, shopping malls, or other vulnerable public areas ● Anchor manufactured homes and exterior attachments such as carports and porches ● Communities may adopt building codes requiring weatherproofing such as wall and roof anchoring, reinforcement of walls, ceilings and floors, etc. ● Secure loose yard items like yard and patio furniture ● Protect temporary debris disposal sites by fencing and/or locating away from populated areas ● Require use of special roofing shingles designed to interlock and resist uplift forces ● Bury power lines ● Designed failure mode to power line design ● Provide backup power resources that can enable critical facilities to continue basic services and can be used by businesses to ensure security and protect refrigerated goods ● Prune trees near power lines ● Promote public education during Severe Weather Awareness Week ● Promote preparation of a home tornado plan and assembling a disaster supply kit ● Highway agencies need to begin immediate patrols after high winds have swept through an area to clean dangerous debris off the road and shoulder, and insure road signs and traffic signal are visible and functioning ● Railroad company maintenance-of-way forces should conduct patrols as soon as possible after a heavy wind event to remove debris on the tracks ● An emergency plan for retrieving and securing run away barges should be developed in cooperation with the barge towing industry and water-based terminals

### 3.5 La Crosse County, Riverine/Flash Flooding/Storm Water Flooding Risk Assessment

**Riverine/Flash Flooding Definition:** Flooding occurs when a river, stream, lake or other body of water overflows its banks onto normally dry land or there is an excessive pooling of surface water. These events can be slow to develop or happen very quickly. Flash floods are usually the result of excessive precipitation or rapid snowmelt and can occur suddenly with awesome power. Increased demand for housing along Wisconsin’s waterfronts increases flooding vulnerability.

Flood related hazards in Wisconsin arise from a complex set of hydrologic and hydraulic interactions, including excessive precipitation; rapid snowmelt, ice or debris jams in waterway channels and dam or levee failures. These result in river flooding, stream flooding, coastal flooding and erosion, bank slumping, inland lake flooding, flash flooding, flooding from levee and dam failure and storm water runoff and ponding.

The effects of flooding can be devastating and cause extensive property damage. Although the probability of serious injury and loss of life is usually low, flooding increases the likelihood of long-term health hazards from water-borne diseases, mold, mildew, insect infestation and contaminated drinking water. Long-term damage to the environment may also result from flooding of sites containing hazardous materials or waste.

Major floods in Wisconsin tend to occur either in the spring when melting snow adds to runoff from rain or in summer and early fall after intense rainfalls. Flooding which occurs in the spring due to snowmelt and/or prolonged periods of heavy rain is characterized by a slow build-up of flow and velocity in rivers and streams over a period of days. This build-up continues until the river or stream overflows its banks, for as long as a week or two. The water then slowly recedes inch by inch to its original level. The expected occurrence and location of this type of flooding is fairly predictable and normally there is sufficient time for the orderly evacuation of people and property.

Flash flooding, which usually results from surface runoff after intense rains or the failure of water control structures, also poses a threat to all areas of Wisconsin. This is an extremely dangerous form of flooding because it is not very predictable. It can occur very quickly, precluding evacuation to higher ground to prevent loss of life. Small and normally calm rivers and streams will rise very rapidly when surrounding soil and terrain are unable to accommodate intense precipitation. Raging torrents of water can rip through waterways, surging well beyond normal banks and sweeping away everything in their path. Houses, structures, bridges, and boulders can be tossed and rolled by a flash flood. The strength of the water current, carrying debris and surging through an area, can cause serious injuries and death. It can also interrupt power, disable fuel sources, make roads impassable, hamper response efforts and strand people in their homes awaiting rescue.

**Riverine/Flash Flooding History and Frequency:**

1960's:	2 events: (1) 1965 - Mississippi River Flood of Record, 638.37 MSL, Lock & Dam 8 Tailwater Gage, Genoa, WI- <i>Presidential Disaster Declaration</i> . (2) 1969 – Mississippi River Flood, 635.24 MSL, Lock & Dam 8 Tailwater Gage, Genoa, WI
1970's:	No reported events by the National Data Climatic Center, 3 reported events by Wisconsin Emergency Management: (1) 1971 - Mississippi River Flood. (2) 1975 – Mississippi River Flood, \$633,500-Public Gov't Property and Facilities Damage and \$1.8 million

	Private-Individual Property, Crop and Facilities Damage to La Crosse and 7 other counties. (3) 1978 – Flooding and Tornadoes, \$11.7 million- Public Gov't Property and Facilities Damage and \$40 million Private-Individual Property, Crop and Facilities Damage - to La Crosse and fifteen other counties, <i>Presidential Disaster Declaration</i> .
1980's	No recorded events by the National Climatic Data Center, 1 reported event by Wisconsin Emergency Management: 1980 – High Winds/Heavy Rains/Tornadoes, \$3.5 million-Public Gov't Property and Facilities Damage and \$6.9 million Private-Individual Property, Crop and Facilities Damage to La Crosse and 10 other counties.
1990's:	4 reported events by NCDC: 4/3/97 (Mississippi River Flood, 3 <sup>rd</sup> highest on record, \$1 million PD – to La Crosse and five other counties); 8/23/97 (Flash Flood, \$50,000 PD); 6/27/98 (Flash Flood Countywide, \$20,000 PD); 8/9/98 (C. Onalaska);  1 reported event by Wisconsin Emergency Management: (1) 1993 –Flooding, Storms, Tornadoes, Heavy Rain/Mississippi River Flood, \$47 million- Public Gov't Property and Facilities Damage and \$700 million Private-Individual Property, Crop and Facilities Damage - to La Crosse and 46 other counties, <i>Presidential Disaster Declaration</i>
2000's:	16 reported events by NCDC – 5/17/00 (Countywide Urban/small stream flood, \$15,000 PD, \$10,000 CD); 4/10/01 (Mississippi River Flood, \$6.5 million PD – to La Crosse and five other counties); 5/1/01(Mississippi River Flooding, \$7.5 million PD to La Crosse and five other counties); 9/13/05 (Countywide flash flood, \$4,000 PD, \$3,000 CD); 8/18/2007, \$11.9 million PD & \$150,000 CD; 8/19/2007 (Flash flooding south end of county and City of La Crosse, \$1.7 million PD & \$120,000 CD); 8/19/2007 (North of City of Onalaska Hwy 53, \$5,000 PD); 6/7/2008 (La Crosse County, \$400,000 PD & \$300,000 CD); 7/7/2008 (Cities of Onalaska and La Crosse, \$3,000 PD); 6/25/2010 (City of La Crosse); 8/8/2010 (City of La Crosse, \$90,000 PD); 8/13/2010 (La Crosse); 9/15/2010 (New Amsterdam); 9/23/2010 (La Crosse County, \$177,000 PD); 9/26/2010 (La Crosse); 10/1/2010 (La Crosse).  4 reported events by Wisconsin Emergency Management: (1) 2001-Flooding/Storms/Tornado, \$47.7 million- Public Gov't Property and Facilities Damage and \$56.2 million Private-Individual Property, Crop and Facilities Damage - to La Crosse and 31 other counties, <i>Presidential Disaster Declaration</i> . (2) 2004 –Flooding/Severe Storms/Tornado, \$9.9 million- Public Gov't Property and Facilities Damage and \$77.1 million Private-Individual Property, Crop and Facilities Damage - to La Crosse and 43 other counties, <i>Presidential Disaster Declaration</i> . (3) 2007-Severe Storms/Flooding, \$16 million, Individual Assistance, \$21 million, Public Assistance, 14 counties in Wisconsin, August 18, 2007 to August 31, 2007, <i>Presidential Disaster Declaration</i> . (4) 2008-Severe Storms/Tornadoes/Flooding, \$113 Million, Individual Assistance, \$118 million, Public Assistance, 30 counties in Wisconsin, June 5, 2008 to July 25, 2008, <i>Presidential Disaster Declaration</i> .
2011	2 reported events by NCDC - 4/7/2011 (Flooding on Mississippi at La Crosse); 6/18/2011 (Onalaska, \$65,000 PD)

PD = Property Damage and CD = Crop Damage

The Mississippi River, the largest river in the state, borders La Crosse County making low-lying areas in the county prone to flooding. In addition the Black River and La Crosse Rivers as well as other small rivers and streams in the La Crosse County flood periodically. The history above details flooding events in the county from 1960 to 2011. The County has received six Presidential Disaster Declarations since 1973 due to flooding. Wisconsin Emergency Management reports indicate that from 1971 through 2001 the 72 counties in Wisconsin averaged four flood related emergency and disaster events. La Crosse County received 6 events during this time period. Due to the County's location along the Mississippi River and the numerous other streams and rivers within the County Flooding is considered a high risk within the county.

**Flood Warning and Evacuation Plans – Mississippi River:** Flood events on the Mississippi River are generally predictable and with rare exception even the crest height can be accurately forecast several days to a week or more before the event. There is no history of flash flooding on this part of the Mississippi River. There is usually ample time to prepare for a flood event, and to minimize flood damage by moving property out of lower elevations. This predictability makes the development of a flood warning and evacuation plan a practical concept.

**Flood Warning and Evacuation Plans – Other Rivers:** The North American Hydro Company operates a small hydro-electric power facility at Lake Neshonoc, West Salem (dam pool on the La Crosse River). Emergency plans have been developed for the largely-uninhabited areas downstream from this facility. The Black River from Lake Onalaska to just north of the confluence with the La Crosse River is, for all intents and purposes, a parallel river with a portion of the Mississippi River. (The Mississippi River and Black River meet at Lake Onalaska and divide again just north of the La Crosse Airport at the northern end of French Island.) This section of the Black River serves as the east shoreline of French Island. The section of the Black River upstream from Lake Onalaska is subject to seasonal flooding but mostly meanders through un-developed and uninhabited areas. There are no specific flood warning or evacuation plans for the Black River.

### ***Floodplain Development and Regulation***

- National Flood Insurance Program: The County along with the Villages of Bangor, Holmen, Rockland and the Cities of La Crosse and Onalaska all participate in the NFIP. The Village of West Salem which does not have any structures located within a floodplain and does not participate at this time.
- Floodplain Management Programs: Enforcement and day-to-day administration of the Floodplain Zoning Ordinances is conducted by the County Zoning Administrator for the County (unincorporated areas) and the individual zoning administrators for the Villages of Bangor, Holmen, Rockland and the Cities of La Crosse and Onalaska. The Zoning Administrator reviews and issues floodway or flood fringe land use permits based on the permitted uses and prohibited uses outlined in the Zoning Ordinance. Standards for structures and buildings being built are also outlined in the Floodplain Ordinance. Reviewing plans of structures and buildings and then inspecting them is another floodplain management responsibility. Reporting to the DNR on decisions on variances, appeals, amendments, and violations pertaining to floodplain zoning and reporting violations to the appropriate law enforcement agency for prosecution are also an integral part of the Zoning Administrator's responsibilities. The Zoning Administrators also frequently advise applicants of the provisions of the Floodplain Zoning Ordinance and assist them in properly preparing permit applications or proceeding with an appeals or amendment request.

Regulating Development. The development that occurs within the unincorporated areas of the County is subject to two ordinances. These are the County Shoreland-Wetland Ordinance and the County Floodplain Zoning Ordinance. The purpose and how the County addresses development with these ordinances is discussed below. The Villages of Bangor, Holmen, Rockland and the Cities of La Crosse and Onalaska have

County Floodplain Zoning Ordinance. The State of Wisconsin has delegated responsibility to counties to administer and enforce floodplain zoning in unincorporated areas. This regulatory activity is to be conducted in accordance with Chapter NR 116 of Wisconsin Administrative Code and the standards of the National Flood Insurance Program.

Floodplains are land areas, which have been or may be covered by floodwater during the "regional flood". The regional flood is a flood determined to be representative of large floods known to have occurred in Wisconsin or which may be expected to occur on a particular lake, river or stream. The regional flood is based upon a statistical analysis of lake level or stream flow records available for the watershed or an analysis of rainfall and runoff characteristics in the watershed or both. In any given year, there is a 1% chance that the regional flood may occur or be exceeded. This regional flood is often referred to as the 100-year flood.

The floodplain is made up of the floodway and flood fringe areas. A floodway is the channel of a river or stream and those portions of the floodplain adjoining the channel required to carry the regional flood discharge. A flood fringe is that portion of the floodplain outside of the floodway, which is covered by floodwater during the regional flood. The term flood fringe is generally associated with standing water rather than flowing water.

Prohibiting new residential construction in the floodway, regulating improvements to existing residential structures in the floodway, requiring dry land access to new development in the flood fringe and requiring a floodplain zoning or shoreland-wetland permit application for all floodplain or shoreland-wetland development are common examples on how the County addresses development and redevelopment in its floodplains and shoreland-wetland areas.

County Shoreland-Wetland Ordinance. The State of Wisconsin has delegated responsibility to counties to protect shoreland-wetlands in unincorporated areas. Shoreland wetlands are defined as wetlands of five acres or larger in size, identified on Wisconsin Wetland Inventory Map, and in the Shoreland Zone. The Shoreland Zone is defined as the area located 1,000 feet of the ordinary high water mark of a navigable lake, pond or flowage or within 300 feet of the ordinary high water mark of a navigable stream or to the landward side of the floodplain whichever distance is greater. These regulations are unique in that they regulate additional uses detrimental to shoreland-wetland areas and preserve the shore cover and natural beauty by restricting the removal of natural shoreland cover and controlling shoreland-wetland excavation, filling and other earth moving activity.

City and Village Floodplain Management Programs: The State of Wisconsin has delegated responsibility to cities and villages to administer and enforce floodplain zoning in incorporated areas. This regulatory activity is to be conducted in accordance with Chapter NR 116 of Wisconsin Administrative Code and the standards of the National Flood Insurance Program.

#### National Flood Program Community Status

Community	In Good Standing	Initial FHBM Identified	Initial FIRM Identified	Current Effective Date
V. Bangor	Yes	01/16/70	01/02/81	04/02/08
V. Holmen	Yes	05/17/74	05/17/74	04/02/08
V. Rockland	Yes	07/11/75	04/02/08	04/02/08
V. West Salem	Yes	04/03/81	12/15/82	04/02/08
C. La Crosse	Yes	01/15/71	01/15/71	04/02/08
C. Onalaska	Yes	12/28/73	09/16/81	04/02/08
La Crosse County	Yes		03/15/84	04/02/08

#### Flood Mitigation Projects in La Crosse County

The Pammel Creek flood control project was built by the US Army Corps of Engineers and a specific Emergency Operations Plan was developed in 1993. Numerous properties were removed from the Flood Plain as a result of this flood control project. This structure is inspected annually by the US Army Corps of Engineers.

Buyouts: The City of La Crosse has participated in a voluntary property buyout program and has bought out homes located along Pammel Creek where periodic flooding had occurred.

#### Flooding Vulnerability Assessment

- Floodplain Structures and Assessed Values. La Crosse County has a total of 1,433 parcels on which structures are located within the FEMA 100-year flood boundary. These 1,433 parcels have a total assessed land value of \$39,116,900; an assessed improvements value of \$136,560,900; and a total assessed value of \$175,677,800. The City of La Crosse has by far the most parcels with 1,181 followed by the Town of Campbell with 127 parcels and the Town of Onalaska with 51 parcels. These three municipalities account for 1,359 parcels or 95% of the total number of parcels and a total assessed value of \$160,008,200 or 91% of the County's total. Table 3-3 shows the number of parcels, Total 2012 Assessed Land Value, Total 2012 Assessed Improvement Value, Total 2012 Assessed Value by municipality for the parcels located within FEMA's 100-year flood boundary. Map 3-6 shows the location of these properties throughout the floodplain.
- Repetitive Loss Structures. Repetitive Loss Structures are defined as those properties that have had two or more flood insurance claims of at least \$1,000 each. As of 6/30/2012 there were 7 properties in La Crosse County which met the requirement. Of the seven, 6 are single family residential structures and one is a 2-4 family residential structure. Four of the properties are located in the Town of Campbell, one is in the Town of Onalaska and the other 2 (one of which is a 2-4 Family Residential) are located in the Town of Onalaska.
- Flood Risk Assessment. Determining potential damage to residential and commercial structures is a difficult undertaking without intense survey work. Some of the factors which make it difficult are: not all of the first floor elevations of the structures are the same; even structures adjacent to each other often have different first floor elevations; some areas will receive damage due to wave action or flowing water; some may appear to be flooded and heavily damaged from the outside but in fact have received little damage due to flood proofing techniques; some cannot be observed due to floodwaters inhibiting access; damages are often not reported; and damages that are reported are based on each property owners individual opinion of damage.

Despite these factors an attempt has been made to ascertain the approximate damages a 100-year flood would inflict on residences and businesses in the County. To assist in this damage assessment process the Federal Insurance Administration has prepared a table, which lists the percentage of damage to a structure based upon the amount of

water in the first floor. This table can be found in the book titled "Design Manual for Retrofitting Flood-prone Residential Structures" published by FEMA. We used this table when determining the amount of damage to structures. To determine the amount of water in the first floor of structures and the number of structures, which would have water in the first floor, we used Flood Insurance Rate Maps and local knowledge of the areas. To make flood damage estimates more accurate we divided the County into 10 different areas; these are: 1) Black River and Flemming Creek; 2) Sand Lake Creek; 3) Brice Prairie; 4) City of Onalaska; 5) Town of Campbell; 6) City of La Crosse; 7) La Crosse River; 8) Town of Shelby; 9) Bostwick Creek and 10) Dutch Creek.

Dividing the County into 10 different geographic areas enables the assignment of different real property values to different areas which is needed because each area is unique in regards to topography, hydrology and development characteristics. This process compensates for the change flood prone property can have across the County in property values from one area to another. By using an average value for each area more realistic flood damage estimates can be generated than if a county wide average value for each structure were used.

During a 100-year flood event the County would have a projected damage total to residential, agricultural and commercial structures of approximately \$26,093,885. The area totals are as follows: 1) Black River and Flemming Creek - \$91,840; 2) Sand Lake Creek - \$465,442; 3) Brice Prairie - \$442,098; 4) City of Onalaska - \$400,414; 5) Town of Campbell - \$1,572,528; 6) City of La Crosse - \$22,649,796; 7) La Crosse River - \$159,456; 8) Town of Shelby - \$237,808; 9) Bostwick Creek - \$60,503 and 10) Dutch Creek - \$14,000. A detailed breakdown of the areas showing total number of structures affected and depth of water in the structures can be seen in Table 3-4.

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Hazard Risk Assignment assigns Flooding a risk factor of 22 indicating this natural hazard is a high risk to the county.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Of these businesses 134 are located in the floodplain. These businesses have a total assessed value of \$50,846,000. Many of these businesses sustain flooding damage and economic losses in lesser flood events. Businesses and industries in the county that do not suffer physical damage often sustain significant income losses as a result of a flood event due to reduction in sales or production problems caused by flood induced customer loss, employee problems and input / output interruptions. Tourism related businesses in particular, such as restaurants, motels, marinas and campgrounds, suffer a loss of revenue because of reduced customers desiring to visit the area. The media publicity generated during a flood event focus on flood related disasters and creates a negative mind-set in the public that can persist long after the floodwaters recede.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. The Natural Hazard Risk Assessment assigns flooding a high risk factor in the county. The land adjacent to these rivers is mostly agricultural and pastures lands that are subject to flooding.
- Roads and Highways. Of all the hazards discussed so far, flooding is the hazard most likely to seriously impact the transportation infrastructure, rather than the vehicles used in transportation, or transportation operations and safety. Periodic flooding of fixed waterways, such as streams and the Mississippi, Black and La Crosse Rivers is a known factor, and the extent of flooding, or potential flooding, has been delineated on maps. Several roadways in La Crosse County are subject to flooding, either by the predictable, advance notice rising of the Mississippi, Black and La Crosse Rivers, or by the shorter advance warning flash flooding often besetting smaller streams. Other streams and low areas can result in water across the roadway, or at an intersection, even without the event being noted as a major flood event by FEMA.
- Railroads. Periodic flooding of fixed waterways, such the Mississippi is a known factor, and the extent of the flooding, or potential flooding, has been delineated on maps. There are two railroad lines in La Crosse County; The Burlington Northern & Santa Fe Railway's (BNSF) mainline between Chicago and the Twin Cities and the Canadian Pacific Railroad. Stretches of the railroads are reinforced with large boulder and rock riprap as necessary during Mississippi River high water.
- Airway. There are two airports in La Crosse County. Portions of the La Crosse Municipal Airport are located in a floodplain and therefore are subject to flooding. The Holland Air Park is not located in a floodplain and therefore would not be subject to flooding. Aircraft operation would not be possible during times of flooding if the La Crosse Municipal Airport runway was inundated with water.



- **Waterways.** The Mississippi River is the only commercially navigable waterway in La Crosse County. Each US Army Corps of Engineers Navigation Lock has a water elevation at which point the lock operations are stopped at that lock, and no further operations are conducted. All commercial tows, whether up bound or down bound, seek secure mooring in existing fleeting areas if possible. Some tows may be permitted to pass through the lock to a different pool after closure, if it can be safely done, to allow a tow access to a more secure mooring location. Improperly moored barges could break loose from fleets or terminals. Three dams impact the La Crosse County reach of the Mississippi River. The lock closure river elevation at Trempealeau Lock 6 is 651.5 feet above mean sea level. Lock and Dam 7, located at Dresbach closure elevation is 646.5 feet above mean sea level. Lock & Dam 8, located at the Village of Genoa closure elevation is 635.9.
- **Municipal Water.** In the county there are 44 municipal wells and water systems, see Table 3-11. These facilities are usually located outside the floodplain, which lessens their vulnerability to flooding. With the volume of water associated with floods and the runoff from the lands and sites that are not usually covered by water, filterization could be accelerated and pollutants could migrate into the water source. Pumping stations in low areas may need to be protected.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities can be located in low-lying areas especially gravity type systems making them vulnerable to flooding. Homes and businesses with basement floor drains that empty directly into the wastewater treatment systems can overload wastewater treatment facilities if the buildings are flooded causing the discharge of untreated wastewater. Floodwaters can infiltrate into the piping of the system that could result in the system operating over its capacity. Lift stations may need to be protected.
- **Hazardous Material Sites.** Hazardous material in transit is subject to the same risk as other material on a given transportation mode. Hazardous material in a storage mode must be protected from floodwaters. Material stored in floodplains should be moved or flood proofed when a prediction of high water is received.

#### **Riverine/Flooding Risk Assessment Designation**

Riverine/Flooding Historical Occurrence Rating: High - 7

Riverine/Flooding Vulnerability Rating: Limited - 4

Riverine/Flooding Probability Rating: Likely - 6

Riverine/Flooding Local Official Survey Rating: Medium - 5

Riverine/Flooding Risk Assessment Designation: **High Threat– 22 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Flooding Hazard Mitigation Ideas:**

- Acquire land in flood prone areas and remove structures and enforce permanent restrictions on development
- Relocate structures to less hazardous locations
- Elevate structures – mechanically lift so that the lowest floor, including the basement, is raised above the base flood elevation – utilities and other mechanical devices should also be raised above expected flood levels
- Dry-floodproofing – keep water out by strengthening walls, sealing openings, or by using waterproof compounds or plastic sheeting on walls
- Wet-floodproofing – Use water resistant paints or other materials that can allow for easy cleanup after floodwater exposure in accessory structures or in a garage area below an elevated residential structure. In basement, wet-floodproofing may be preferable to attempting to keep water out completely.
- Adopt zoning ordinances that limit development in the floodplain
- Limit density of developments in the floodplain
- Require that floodplains be kept as open space
- Subdivision design standards can require elevation data collection during the platting phase and lots may be required to have a buildable space above the base flood elevation
- Requirements for building design standards and enforcement include the following possibilities: 1) that a residential structure be elevated; and 2) that a non-residential structure be elevated or floodproofed
- Conservation easements may be used to protect environmentally significant portions of parcels from development – they do not restrict all use of the land, rather they direct development to areas of land that are not environmentally significant
- Purchasing flood insurance does not prevent a flood from occurring, but it does mitigate a property owner's financial exposure to loss from flood damage
- By taking initiative locally, to more accurately map problem areas with information not already on FEMA maps a community can warn residents about potential risks that may not have been anticipated
- To maintain dry access, roads should be elevated above the base flood elevation. However, if a road creates a barrier it can cause water to pond. Where ponding is problematic, drainage and flow may be addressed by making changes to culvert size and placement.
- Flood warning can alleviate health and safety risk by providing citizens time to escape and possibly remove belongings that could be damaged. NOAA weather radio and EAS broadcasts can be incorporated into a community's flood warning system
- Local and state governments should have a plan/procedure in place for flood damage control by establishing volunteer teams available for sandbagging etc. and providing for temporary relocation and storage of equipment, furniture etc.
- Communities should develop a post-flood clean up- decontamination, and recovery plan/procedures
- Alternate routes can be determined and marked in

advance of the actual flooding ● Movable message portable signs should be posted at locations where motorists can make detour decisions before entering into the flooded road segment ● Cleaning and clearing culverts, drains, and waterways must be kept uppermost as a maintenance practice ● After a flood it is especially important to check and maintain all drainage ways ● Highway agencies need to begin immediate patrols after floods have swept through an area to clean dangerous debris off the road and shoulder, and insure road signs and traffic signal are visible and functioning ● An emergency plan for retrieving and securing run away barges should be developed in cooperation with the barge towing industry and water-based terminals ● Have public relations strategy in place to counteract negative media reports after a flood to maintain community's tourism base

### 3.6 La Crosse County, Dam Failure Flooding Risk Assessment

**Dam Failure Flooding Definition:** A dam failure involves the uncontrolled release of stored water due to the breaching of a water control structure, resulting in rapid downstream flooding. A dam can fail because of excessive rainfall or melted snow, poor construction or maintenance, flood damage, earthquake activity, weakening caused by burrowing animals or vegetation, surface erosion, vandalism or a combination of these factors. Dam failures can result in the loss of life and significant property damage in an extensive area downstream of the dam.

Dams serve many purposes, including agricultural uses, providing recreation areas, electrical power generation, erosion control, water level control and flood control. The federal government has jurisdiction over dams that produce hydro-electricity-approximately 5% of the dams in Wisconsin. Private individuals own approximately 50% of the dams in Wisconsin, the State owns 19%, municipalities such as townships or county governments own 16% and 15% are owned by various other groups. The Wisconsin Department of Natural Resources regulates all dams on waterways to some degree. However, the majority of dams overall in Wisconsin are small and are not stringently regulated for safety purposes.

Most of the dams that provide a flood control benefit are large hydroelectric dams on major rivers where flood control is a secondary benefit or they are PL 566 dams built through the Watershed Protection and Flood Prevention Act of 1954. The PL 566 dams hold little or no water in their reservoirs under normal conditions. Since these dams only hold significant amounts of waters during floods, they present a special hazard as everyday water related problems such as seepage cannot be readily seen and corrected. When floodwater does arrive, the dam is used to its maximum capacity. The North American Hydro Dam at Lake Neshonoc (West Salem) is the only commercial hydroelectric facility in La Crosse County. Two PL-566 flood protection structures were built over 50 years ago along the Coon Creek watershed in the southeast corner of La Crosse County.

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

**Dam Failure Flooding History and Frequency:** There are no reported incidences of dam failure.

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Dam Failure Flooding a risk factor of 8 indicating this natural hazard is a low risk to the county. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. The Natural Hazard Risk Assessment assigns dam failure flooding a low risk factor in the county. No businesses have been identified as lying in the hydraulic shadow of a dam.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. The Natural Hazard

Risk Assessment assigns dam failure flooding a low risk factor in the county. The land below the dams is mostly agricultural and pastureland that would be subject to flooding in the rare occurrence a dam fails.

- Roads and Highways. Dam failure differs from traditional flooding in that flooding, even on a rapidly rising stream such as Pammel Creek happens both with a certain regularity in terms of not being an “if”, but a “when”, and also with a certain advance warning, perhaps weeks for the Mississippi but none-the-less, there is a warning period to take action to close roads, move equipment, or other take other mitigation. A dam break on the other hand could leave little time, even in terms of minutes, to take any mitigation action. Hydraulic shadows of dams in La Crosse County are not known.
- Railroads There are two railroad lines in La Crosse County. The Burlington Northern & Santa Fe Railway’s (BNSF) lies along the Mississippi River. And the Canadian Pacific (CP) runs East-West within the La Crosse River valley. The risk factor from dam failure to these rail lines is low.
- Airway. La Crosse Municipal and Holland Air Park are the two public airports located La Crosse County. Neither of these lies in the hydraulic shadow of a dam.
- Waterways. The hazard to commercial navigation on the Mississippi River from dam failures on tributaries is minute. In most cases the initial flush of water from a partial or complete failure of a dam on a tributary would not even reach the Mississippi in a noticeable form. Commercial navigation would be severely affected and possibly halted should one of the US Army Corps of Engineers Lock and Dams fail.
- Municipal Water. In the county there are 44 municipal wells and water systems, see Table 3-11. These facilities are usually located at higher elevations which, reduces their vulnerability to flooding or damage if a dam would fail. Hydraulic shadows for all dams in La Crosse County are not known.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities can be located in low-lying areas especially gravity type systems making them vulnerable to flooding in event that a dam fails. Floodwaters could infiltrate into the piping of the system that could result in the system operating over its capacity. Hydraulic shadows of all dams in La Crosse County are not known.
- Hazardous Material Sites. While all hydraulic shadows for dams in the County have not been determined, no major hazardous waste disposal or storage sites are located in the hydraulic shadows of dams. Most rural dwellings have fuel oil, bottled gas, gasoline, and other containers of various sizes mounted outdoors or in storage buildings. These containers need to be made secure from winds and flooding.

#### **Dam Failure Flooding Risk Assessment Designation**

Dam Failure Flooding Historical Occurrence Rating: Low - 1

Dam Failure Flooding Vulnerability Rating: Negligible - 2

Dam Failure Flooding Probability Rating: Unlikely - 3

Dam Failure Flooding Local Official Survey Rating: Low -2

Dam Failure Flooding Risk Assessment Designation: **Low Threat – 8 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Dam Failure Flooding Hazard Mitigation Ideas:** ● Have an inspection, maintenance and enforcement program in place to ensure the continued structural integrity of dams ● Remove unnecessary or old and structurally unsound dams ● Planning for dam breaks can include constructing emergency access roads as well as automating pump and flood gate operation ● Regulate development in a dam’s hydraulic shadow, where flooding would occur if there were a severe dam failure ● Develop and coordinate dam failure emergency action plans

### **3.7 La Crosse County, Forest/Wildland Fire Risk Assessment**

**Forest/Wildland Fires Definition:** A forest fire is an uncontrolled fire occurring in a forest or in woodlands outside the limits of incorporated villages or cities. A wildfire is any instance of uncontrolled burning in brush, marshes, grasslands or field lands. The causes of these fires include lightning, human carelessness and arson.

Forest and wildfires can occur at any time of the day and during any month of the year, but the peak fire season in Wisconsin is normally from March through November. The season length and peak months may vary appreciably from year to year. Land use, vegetation, amount of combustible materials present and weather conditions such as wind, low humidity and lack of precipitation are the chief factors determining the number of fires and acreage burned. Generally, fires are more likely when vegetation is dry from a winter with little snow and/or a spring and summer with sparse rainfall. In La Crosse County the Towns are susceptible to forest

fires but due to large amount of agriculture land there are no large contiguous tracks of forest which limits the possibility of a large forest fire.

Forest fires and wildfires are capable of causing significant injury, death and damage to property. A recent inventory showed that 46 percent of the state, 16 million acres is covered with forests. The potential for property damage from fire increases each year as more recreational properties are developed on wooded land and increased numbers of people use these areas. Fires can extensively impact the economy of an affected area, especially the logging, recreation and tourism industries. Major direct costs associated with forest fires or wildfires are the salvage and removal of downed timber and debris and the restoration of the burned area. If burned-out woodlands and grasslands are not replanted quickly to prevent widespread soil erosion, then landslides, mudflows and floods could result, compounding the damage.

**Forest/Wildland Fires History and Frequency:**

1990's:	1 event reported by NCDC - Wildfires Statewide
2000's:	3 events reported by NCDC - 4/5/2000, (Burr Oak, nearly 800 acres burned, \$20,000 PD); 4/10/2009 (Town of Shelby grass fire, 10 acres burned and several vehicles destroyed, \$60,000 PD; 4/19/2010 (La Crosse and Vernon County line, 10 acres burned, \$2,000 PD.

According to the Wisconsin Department of Natural Resources using information from the last 33 years, approximately 1,700 fires burn 6,000 acres each year in the State of Wisconsin. These acres are predominately forested but include other vegetation cover such as agricultural fields, shrubland, wetland, etc. The 1976 drought created the most severe fire danger condition in Wisconsin forests and grasslands since the 1930's. During 1976 a total of 4,144 fires occurred, the greatest number in any one-year since 1971, when detailed record keeping began. The fire season of 1988 is also remembered as one of the driest on record. A total of 3,242 fires occurred that year, but just 9,740 acres burned, an extraordinarily low number considering the severity of the threat. Department of Natural Resource records show that one major forest fires (*fires burning over 500 acres*) have been reported for La Crosse County from 1976 through 2011. This fire occurred at Burr Oak on 4/5/00 and burned approximately 800 acres and caused \$20,000 in property damage, homes were evacuated but none of the structures were damaged as fire fighters contained the blaze. In addition there were 2 other fires each 10 acres in size which caused property damage in the County. Using this historical data, La Crosse County can expect a fire to occur once every 5.5 years.

**Forest/Wildland Fires Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Forest/Wildland Fires a risk factor of 10 indicating this natural hazard is a low risk to the county. Critical facility's vulnerability to Forest/Wildland Fires is very negligible. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For the majority of urban businesses and industries forest/wildland fires pose a low risk. Businesses and industries located in rural areas or those located adjacent to forests and grasslands may be at a more significant risk. Examples of businesses that would be more vulnerable to these natural disasters include campgrounds and other recreation facilities.
- **Agriculture.** The overall hazard risk to agriculture is low. Agricultural buildings, especially out buildings that may be adjacent to forests or grasslands have an increased vulnerability to forest/wildland fires. Crops that have sustained long periods of drought or crops at harvest time could be more susceptible to damage from fires. Agricultural Forests are susceptible to forest/wildland fires. In addition this natural hazard could also endanger livestock.
- **Roads and Highways.** Smoke from forest fires can adversely affect visibility for motorists, but this is an isolated occurrence. The movement of heavy and specialized fire-fighting equipment on public roadways to fire scenes can cause temporary disruption or inconvenience to the motoring public. Following a major forest or wildland fire, sufficient vegetation may have been destroyed so as to warrant consideration of temporary emergence soil erosion control methods. This would especially apply to steep slopes, such as along STH 35.
- **Railroads.** Smoke from forest fires can adversely affect visibility for train operation, but this is an isolated occurrence and can be mitigated by notification of the railroad dispatcher. A decision to close the railroad temporarily can be made by railroad management. Following a major forest or wildland fire, sufficient vegetation may have been destroyed so as to warrant consideration of temporary emergence soil erosion control methods.

- **Airway.** Although fires in the hardwood forests of La Crosse County rarely reach the spectacular proportions of fires in the western state mountains, or even in the coniferous forests of northern Wisconsin, aircraft are sometimes used for observation, or water drops. During major fire events the La Crosse Municipal airport or Holland Air Park could become major hubs of air and ground activity. Highway traffic control by local officers in the vicinity of the airports might be needed.
- **Waterways.** Although there are some historical accounts of navigation by steamboat on the Mississippi River during wildfires on adjacent bluffs, these accounts relate little in the way of direct threat to boats on the river. As with land and air transportation, there could be isolated incidents of smoke drift creating a visibility hazard to river boat pilots, but modern tow boats equipped with radar, are less apt to be impacted by this than are motorists on a highway.
- **Municipal Water.** In the county there are 44 municipal wells and waters systems in operation, see Table 3-11. These facilities vulnerability to forest/wildland fires would be negligible except if these facilities are located adjacent to forests. The services provided by these facilities would not be interrupted except in extreme cases.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to forest/wildland fires would be negligible except if these facilities were located adjacent to forests. The services provided by these facilities would not be interrupted except in extreme cases.
- **Hazardous Material Sites.** Hazardous material storage areas in the path of forest or wildland fire would have to either receive concentrated protection, at the expense of resources that could otherwise be devoted to the main task of fire suppression, or the material would have to be moved and transported to a pre-designated relocation site if there were sufficient advance warning and accurate prediction of the fire's path. This latter option is not very likely to present itself.

**Forest/Wildland Fires Risk Assessment Designation**

Forest/Wildland Fires Historical Occurrence Rating: Low - 1  
 Forest/Wildland Fires Vulnerability Rating: Negligible - 1  
 Forest/Wildland Fires Probability Rating: Possible - 3  
 Forest/Wildland Fires Local Official Survey Rating: Medium - 5  
 Forest/Wildland Fires Risk Assessment Designation: **Low Threat – 10 points**  
 See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Forest/Wildland Fires Hazard Mitigation Ideas:** • Outreach efforts can promote such items as non-combustible roof covering, fire safe construction, and the important of cleaning brush away from buildings • Promote public education on smoking hazards and the risks of recreational fires • Zoning can be used to cluster development into defensible areas and keep development away from fire hazards such as steep slopes, where fires are difficult to contain • Damage potential can be reduced by ensuring that structures are surrounded by defensible space or buffer zones • Local power companies can help prevent or alleviate wildfires by property maintenance and separation of power lines, as well as efficient response to fallen power lines • Maintenance of property in or near wildfire prone areas (fuel management techniques, pruning/clearing dead vegetation, selective logging, planting fire-resistant vegetation, creating fire breaks) • Local governments can require burn permits and restrict campfires and outdoor burning • Establish or continue to maintain cooperative fire agreements with the Wisconsin Department of Natural Resources • Smoke from forest fires can adversely affect visibility for motorists, but can be mitigated by temporary signage or even road closures in a temporary basis • Following a major forest or wildland fire, sufficient vegetation may have been destroyed so as to warrant consideration of temporary emergence soil erosion control methods

**3.8 La Crosse County, Heavy Snowstorm Risk Assessment**

**Heavy Snowstorm Definition:** Winter storms can vary in size and strength and include heavy snowstorms. A heavy snowfall is the accumulation of six or more inches of snow in a 12-hour period or eight or more inches in a 24-hour period.

**Heavy Snowstorm History and Frequency:**

1990's:	13 reported events by NCDC – 1/16/94 (up to 9"), 1/26/94 (6"-12"), 2/22/94 (6"-16"), 2/25/94 (6"-10"), 3/6/95 (7"-10"), 4/9/95 (8"-12"), 11/26/95 (6"-14"), 1/18/96 (6"-10" with blowing and drifting causing drifts of 2'-4'), 11/20/96 (4"-6", \$100,000 PD), 2/4/97 (6"-10"), 3/13/97 (10"-20"), 1/1/99 (8"-13"), 1/24/99(6"-8", 1 death, 20 injuries, \$130,000 PD).
2000's:	28 reported events by NCDC –12/18/00 (4"-8"), 12/28/00 (5"-7"), 3/12/01 (6"-10"), 3/1/02 (6"-10" with 15-25 mph winds), 2/2/03 (3"-7"),

	1/26/04 (6"-7"), 2/1/04 (6"-11"), 12/20/04 (6"-9"), 1/21/05 (6"-10"), 2/20/05 (6"-10"), 3/17/05 (8"-16"), 2/15/06 (5"-9"), 2/23/07 (20-25"), 2/28/07 (6"-10"), 3/1/07 (6"-11"), 4/10/07 (3"-12"), 12/1/07 (3"-8"), 12/22/07 (6"-15"), 1/21/2008 (8"-9"), 2/17/08 (10"-15"), 3/21/2008 (6"-9"), 12/8/08 (6"-11"), 12/19/08 (6"-12"), 12/20/08 (4"-7"), 2/26/09 (2"), 12/8/09 (12"-18"), 12/3/10 (6"-10"), 12/10/10 (19"-20"),
2011	2 reported events by NCDC - 2/20/11 (6"-10"), 4/19/11 (3"-6")

Much of the snowfall in Wisconsin occurs in small amounts between one and three inches per occurrence. Heavy snowfalls that produce at least eight to ten inches accumulation happen on the average only five times per season. Southwestern Wisconsin receives most of its snow during mid-winter. Snowfall in Wisconsin varies between the seasonal averages of approximately 30 inches in the south central area of the state to over 100 inches a year in the extreme northwestern counties.

The National Climatic Data Center records show 13 heavy snowstorm events in La Crosse County during the 1990's and 30 so far in the 2000's. Based on this historical data La Crosse County can expect 2 heavy snow storms, which produces at least 6" of snow per year. Estimating potential future losses for winter storms is difficult. Typically damages are minor and widespread. Costs such as additional snow removal time and minor auto accidents are the typical costs associated with heavy snow storms and are not usually tracked at the county level.

**Heavy Snowstorm Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Heavy Snowstorm a risk factor of 30 indicating this natural hazard is a high risk to the county. In fact, this natural hazard received the highest risk assessment of all natural hazards assessed for the county. Heavy snowstorms with large accumulations of snow could cause structural damage to the roofs of these buildings due to inadequate snow load capacity. In extreme cases, operations of these facilities could be limited because employees are unable to get to work. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Heavy snowstorms with large accumulations of snow could cause structural damages to roofs of these buildings due to inadequate snow load capacity. Businesses and industries vulnerability to heavy snowstorms could include economic loss and disruptions of inputs and outputs in extreme cases.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Snow from snowstorms is beneficial to many crops because it provides insulation from freezing and extreme cold. Livestock can be vulnerable to heavy snowstorms and can cause injuries and death. Cropland with significant frost depth can be negatively impacted by heavy snow cover. Spring rains are needed to draw the frost out of the ground; otherwise the water from snow melt will not be absorbed by the soil and can cause severe runoff and flooding.
- Roads and Highways. Direct hazard caused by poor visibility and slippery surface. Safety concerns with snowplows. Following a heavy snowfall, visibility problems can persist with blowing snow and icing following partial melting and refreezing of the runoff water. Blowing snow is more apt to occur on north-south oriented roads such as STH 162. Following a heavy snowfall, children may be outside playing in the snow near the roadway and be oblivious to traffic. Following the snow deposition, lesser-used roads may remain blocked for hours, or even days after the storm is over. This blockage can cause motorist confusion and detours, as well as hampering access for emergency vehicles. Finding locations to store snow, especially snow removed from large expanses like urban parking lots, can be challenging.
- Railroads. Direct hazard caused by poor visibility. Following a heavy snowfall, visibility problems can persist with blowing snow.
- Airway. Plane operation from the La Crosse Municipal airport or Holland airpark would not be possible during a heavy snowstorm, because of the poor visibility and the physical blockage of the runway and taxiways. Following a heavy snowfall, visibility problems can persist with blowing snow and icing following partial melting and refreezing of the runoff water. Heavy snow squalls in the vicinity of La Crosse County could cause some light aircraft, possibly flying over the county, to decide to land at La Crosse or Holland until the storms stop.
- Waterways. The Mississippi River is typically closed from about the first week of December to the second week of March. Most heavy snowfalls occur in the winter when the Mississippi River is closed to navigation, and therefore present no challenge. Early heavy snows in early December or mid-March could catch an active tow still on the Upper

River. The same conditions of poor visibility that affect road and rail travel can impact river pilots as well. Although commercial riverboats are equipped with radar, eyesight visibility is still critical to navigate through locks, and while performing barge transfers. Heavy snow makes conditions dangerous for deck personnel where a slip and fall can be fatal. Lock workers experience the same problem. There is one Corps of Engineers navigation lock, Lock and Dam 7, at Dresbach, MN. Portions of that structure, including spillways, are located in La Crosse County.

- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to heavy snowstorms is negligible and would not cause interruption of services provided.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to heavy snowstorms is negligible and would not interrupt services provided.
- Hazardous Material Sites. Heavy snow does not have as great an impact on hazardous materials in storage as does some of the other natural hazards, but heavy snow could cause collapse of storage building roofs, as well as restricting the response of emergency crews to the scene.

**Heavy Snowstorm Risk Assessment Designation**

Heavy Snowstorm Historical Occurrence Rating: High - 9  
 Heavy Snowstorm Vulnerability Rating: Catastrophic - 7  
 Heavy Snowstorm Probability Rating: Highly Likely - 8  
 Heavy Snowstorm Local Official Survey Rating: High - 6  
 Heavy Snowstorm Risk Assessment Designation: **High Threat – 30 points**  
 See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Heavy Snowstorm Hazard Mitigation Ideas:** • Local and state governments can produce and distribute family and traveler emergency preparedness information relating to severe winter weather hazards • Safety strategies for severe weather events can be included in driver education classes • Burying or otherwise protecting electric and other utility lines can prevent utility disruption • Local governments can impact building/site design through building code enforcement of snow-related ordinances such as snow loads, roof slope, snow removal, and storage • Establish heating centers or shelters for vulnerable populations • Local governments need to always plan for and maintain adequate road and debris clearing capabilities • Use snow fences to limit blowing and drifting of snow over critical roadway segments

**3.9 La Crosse County, Ice Storm Risk Assessment**

**Ice Storm Definition:** Winter storms can vary in size and strength and include ice storms. An ice storm is an occurrence where rain falls from warmer upper layers of the atmosphere to the colder ground, freezing upon contact with the ground and exposed objects near the ground.

Freezing drizzle/freezing rain is the effect of drizzle or rain freezing upon impact on objects that have a temperature of 32 degrees Fahrenheit or below. Sleet is solid grains or pellets of ice formed by the freezing of raindrops or the refreezing of largely melted snowflakes. This ice does not cling to surfaces.

Both ice and sleet storms can occur at any time throughout the winter season from October into early April. Early and late season ice and sleet storms are generally restricted to northern Wisconsin; otherwise the majority of these storms occur in southern Wisconsin. In a typical winter there are 3-5 freezing rain events and a major ice storm occurs on a frequency of about once every other year. If a half inch of rain freezes on trees and utility wires, extensive damage can occur, especially if accompanied by high winds that compound the effects of the added weight of ice. There are also between three and five instances of glazing (less than ¼ inch of ice) throughout the state during a normal winter.

**Ice Storm History and Frequency:**

1970's:	1 event reported by Wisconsin Emergency Management – 3/76, devastating ice storm, \$8.5 million-Public Gov't Property and Facilities Damage and \$42 million Private-Individual Property, Crop and Facilities Damage to La Crosse and 21 other counties, <i>Presidential Disaster Declaration</i> .
1990's:	4 events reported by NCDC – 1/26/94 (heavy snow/ice storm); 12/13/95 (glaze); 2/26/96; 1/4/98 (La Crosse & 11 other counties, \$67,000 PD, 14 injuries)

2000's:	7 events reported by NCDC – 2/24/01, 1/1/05, 1/3/09, 2/26/09, 3/8/09, 11/24/10, 12/29/10 - \$280,000 PD
2011	2 events reported by NCDC - 1/29/11, 2/20/11

Wisconsin Emergency Management records show that in March of 1976 a devastating ice storm hit La Crosse County along with 21 other counties, causing over \$50 million in property damage warranting a Presidential Disaster Declaration. The National Climatic Data Center reported that La Crosse County experienced four ice storm events in the 1990's and nine events in 2000's. La Crosse County averages one ice storm every three years. Damages and costs typically associated with Ice Storms are downed power lines, auto accidents and additional personnel time for salting and plowing. Estimating future losses is difficult due to the fact that most costs associated with Ice Storms are not tracked at the County level.

**Ice Storm Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Ice Storm a risk factor of 23 indicating this natural hazard is a high risk to the county. Ice storms can damage the roofs of these facilities by forming “ice dams” and in severe conditions the weight of the ice from these storms can cause roofs to collapse. Ice storms can damage power and communication lines and cut off service to these buildings. Services provided by these facilities would not be interrupted except in extreme cases. See Table 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there were 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Ice storms can damage the roofs of these buildings by forming “ice dams” and in severe conditions the weight of the ice from these storms could cause roofs to collapse. Ice storms can damage power and communication lines and cut off service to buildings resulting in lost production and revenue from businesses and industries. Agricultural-related businesses and industries could suffer economic losses from crop damages, reduced milk production and loss of livestock due to ice storms.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. The hazard threat from ice storms is high in the county. The agricultural economy can sustain substantial economic losses from these storms. Ice storms can damage and collapse the roofs of buildings and can damage power and communication cutting off service. The dairy industry in particular is vulnerable to ice storms because these operations are dependent on electric milking equipment that could result in reduced production and extreme cases milk may have to be dumped. This natural hazard can result in the loss of livestock due to exposure and increase crop damages. Christmas tree farms and fruit tree orchards can suffer damages due to ice-sheared treetops, branches pulled down and destruction of trees. The gathering of sap for maple syrup production can be halted due to ice covering tree spigots and gathering systems during sap runs. Rural areas can be the last to get electrical power restored from downed lines to farms.
- Roads and Highways. Ice is one of the more treacherous hazards to roadway travel. It is not always as plainly obvious on the surface as is snow, and in spotty icing conditions; a vehicle can come upon it unexpectedly on a curve or the bottom of a hill, even though other parts of the highway are clear. Motorists tend to expect icing on bridges. Heavy ice can cause tree limbs or utility lines to fall across the roadway.
- Railroads. The main impact ice storms have on railroad movement is their potential to disrupt wire-based communications if the wires are weighted down and break. Icing can cause obvious productivity and safety hazards to rail crews working on the ground, as in necessary to switch cars at customer sidings or in rail sorting yards.
- Airway. Icing on wings and elsewhere on the exterior of an aircraft make it impossible to fly. Light planes in flight may have to make emergency landings at La Crosse or Holland if they encounter icing in flight. Aircraft parked in the open on the ground could have their control surfaces damaged by heavy ice storms.
- Waterways. Ice storms can occur earlier and later in the winter season than do severe snow storms, and the most typical time for ice storms is in November and March. Commercial navigation can still be in full operation at the time of an ice storm. Deck surface conditions can be very treacherous for deck hands working on barge tows and for workers at navigation locks and cargo piers.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to ice storms would be limited to such things as damage to the facilities roofs and loss of electrical service from downed power lines. Services provided would not be interrupted except in extreme cases.



- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in the county, see Table 3-12. These facilities vulnerability to ice storms would be limited to such things as damage to building's roofs and loss of electrical service from downed power lines. Services provided would not be interrupted except in extreme cases.
- **Hazardous Material Sites.** Ice, like snow, is more harmful for the potential peripheral impacts than direct impact. Icy road conditions can make emergency vehicle response difficult.

**Ice Storm Risk Assessment Designation**

Ice Storm Historical Occurrence Rating: Moderately Low - 5

Ice Storm Vulnerability Rating: Catastrophic - 7

Ice Storm Probability Rating: Likely - 5

Ice Storm Local Official Survey Rating: High - 6

Ice Storm Risk Assessment Designation: **High Threat – 23 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Ice Storm Hazard Mitigation Ideas:** • Local and state governments can produce and distribute family and traveler emergency preparedness information relating to severe winter weather hazards • Burying or otherwise protecting electric and other utility lines can prevent utility disruption • Local governments need to always plan for and maintain adequate road and debris clearing capabilities • Home and building maintenance should be encouraged in order to prevent roof and wall damage from “ice dams”

**3.10 La Crosse County, Blizzard Risk Assessment**

**Blizzard Definition:** Winter storms can vary in size and strength. A blizzard is the occurrence of sustained wind speeds in excess of 35 miles per hour accompanied by heavy snowfall or large amounts of blowing or drifting snow. True blizzards are rare in Wisconsin, however blizzard-like conditions often exist during heavy snowstorms when gusty winds cause severe blowing and drifting of snow.

**Blizzard History and Frequency:**

1990's:	1 event reported by NCDC – 11/26/96
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One blizzard event was recorded in 1996 by the National Climatic Data Center for La Crosse County. Damages and costs typically associated with Blizzards are downed power lines, auto accidents and additional personnel time for salting and plowing. Estimating future losses is difficult due to the fact that most costs associated with Blizzards are not tracked at the County level.

**Blizzard Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Blizzard a risk factor of 17 indicating this natural hazard is a moderate threat to the county. Blizzards with heavy snowfalls and strong wind speeds could cause structural damage to roofs of these facilities because of inadequate snow load capacity. Roofing material could be blown off. Electrical service may be interrupted. Operations of these facilities could be limited because employees are unable to get to work. The services of these facilities provided would not be interrupted except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Blizzards with heavy snowfalls and strong wind speeds could cause structural damage to buildings because of inadequate snow load capacity. Roofing material could be blown off. Businesses and industries' vulnerability to blizzards could include economic loss and disruption of inputs and outputs.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Snow from blizzards is beneficial to many crops because it provides insulation from freezing and extreme cold. Livestock can be vulnerable to exposure from strong and persistent winds and the heavy snowfall with drifting which can cause injuries and death. The strong winds that accompany blizzards can cause soil erosion of soil especially on ridge tops.

- Roads and Highways. The same problems created by heavy snowfall apply to blizzards as well, except blizzards are characterized by heavy winds in addition to snow. Direct hazards caused by poor visibility and slippery surface are safety concerns with snowplows. Following a heavy snowfall, visibility problems can persist with blowing snow and icing following partial melting and refreezing of the runoff water. Blowing snow is more apt to occur on north-south oriented roads such as STH 162. Following a heavy snowfall, children may be outside playing in the snow near the roadway and be oblivious to traffic. Following the snow deposition, lesser-used roads may remain blocked for hours, or even days after the storm is over. This blockage can cause motorist confusion and circuitous detours, as well as hampering access for emergency vehicles. Finding locations to store snow, especially snow removed from large expanses like urban parking lots, can be challenging.
- Railroads. Direct hazard caused by poor visibility. Following a heavy snowfall, visibility problems can persist with blowing snow.
- Airway. Plane operation from the La Crosse Municipal Airport and the Holland Airpark would not be possible during a heavy snowstorm, because of the poor visibility and the physical blockage of the runway and taxiways. Following a heavy snowfall, visibility problems can persist with blowing snow and icing following partial melting and refreezing of the runoff water. Heavy snow squalls in the vicinity of La Crosse County could cause some light aircraft, possibly flying over the county, to decide to land at La Crosse or Holland until the storms stop.
- Waterways. The River is closed to commercial navigation from about the first week of December to the second week of March. Most heavy snowfalls occur in the winter when the Mississippi River is closed to navigation, and therefore present no challenge. Early heavy snows in early December or mid-March could catch an active tow still on the Upper River. The same conditions of poor visibility that affect road and rail travel can impact river pilots as well. Although commercial riverboats are equipped with radar, eyesight visibility is still critical to navigate through locks, and while performing barge transfers. Heavy snow makes conditions dangerous for deck personnel where a slip and fall can be fatal. Lock workers experience the same problem. There is one Corps of Engineers navigation lock, Lock and Dam 7 located at the Dresbach.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to blizzards is negligible and would not be interrupted except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to blizzards is negligible and would not interrupt services provided by these facilities.
- Hazardous Material Sites. Heavy snow does not have as great an impact on hazardous materials in storage as does some of the other natural hazards, but heavy snow could cause collapse of storage building roofs, as well as restricting the response of emergency crews to the scene.

#### **Blizzard Risk Assessment Designation**

Blizzard Historical Occurrence Rating: Low - 1

Blizzard Vulnerability Rating: Catastrophic - 7

Blizzard Probability Rating: Possible - 3

Blizzard Local Official Survey Rating: High - 6

Blizzard Risk Assessment Designation: **Moderate Threat – 17 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Blizzard Hazard Mitigation Ideas:** • Local and state governments can produce and distribute family and traveler emergency preparedness information relating to severe winter weather hazards • Burying or otherwise protecting electric and other utility lines can prevent utility disruption • Local governments need to always plan for and maintain adequate road and debris clearing capabilities • Use snow fences to limit blowing and drifting of snow over critical roadway segments

### **3.11 La Crosse County, Extreme Cold Risk Assessment**

**Extreme Cold Definition:** Winters are often accompanied with extremely cold temperatures. Extremely cold temperatures with strong winds can result in wind chills that cause bodily injury such as frostbite and death.

**Extreme Cold History and Frequency:**

1990's:	5 reported events by NCDC - 12/10/95 (wind chills of 50-70 below zero), 12/9/95 (wind chills of 25 – 50 below zero, 2 deaths and 21 injuries reported statewide), 1/29/96 (wind chills of 20 – 30 below zero), 2/1/96 (wind chills of 30 – 52 below zero), and 1/16/97 (wind chills of 30-50 below zero).
2000's:	8 reported events by NCDC - 1/30/08 (wind chills of 30-40 below zero), 2/10/08 (wind chills of 35-45 below zero), 12/14/08 (wind chills of 20-40 below zero), 12/21/08 (wind chills of 20-40 below zero), 1/14/09 (wind chills of 33-44 below zero), 12/10/09 (wind chills of 20-30 below zero), 1/1/2010 (temperatures of 30 below zero), 1/28/10 (wind chills of 20 below).

The National Climatic Data Center reported that La Crosse County experienced 5 extreme cold events in La Crosse County during the 1990's and 8 events in the 2000's. This averages out to a little over 1 every other year. Damages associated with extreme cold temperatures include frostbite and even death. No deaths have been recorded in La Crosse County due to extreme cold temperatures. The severe winter of 2013-14 resulted in the need for an additional overnight Warming Shelter facility to assist persons lacking adequate shelter from the cold. Overnight temperatures were below 0 degrees during most of January and February with a new low temperature record set in early March (-21 degrees).

**Extreme Cold Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Extreme Cold a risk factor of 22 indicating this natural hazard is a high risk to the county. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Extreme cold can lead to physical problems for workers (frostbite) and lower productivity. The extreme cold can cause mechanical equipment failures, which could lead to economic loss and disruption of inputs and outputs.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Extreme cold can cause dangerous physical conditions (frostbite) for agricultural workers. Livestock can be vulnerable to exposure from cold temperatures causing more stress on the animal and less production. In addition, extreme cold can cause injuries and death. Equipment failures such as frozen water pipes, fuel lines, etc. can disrupt agricultural production.
- **Roads and Highways.** Extreme cold impacts highway transportation by creating problems with vehicle starting and operation. Fuels lines and cooling systems can freeze, door latches not work properly, and other mechanical components can fail. The problem of extreme cold is compounded by the fact the roadways usually are already impacted by snow and ice from previous snowstorms. There is a safety hazards to individual motorists if they have any vehicle mechanical problems, or a driving situation that forces them into the ditch or situation where the vehicle is inoperative. Exposure injury, or death, either in or out of the vehicle, can occur quickly. Adverse impact to the road infrastructure can include contraction of bridge joints; contribute to rock face collapse, and pavement cracking.
- **Railroads.** Extreme cold causes contraction of welded continuous rails, and the imposition of a speed limit by the railroad companies. This speed reduction would impact operations on some railroads. The mechanical components of locomotives, rail cars, and railroad crossing gates can be adversely impacted by extreme cold. The extreme cold can impact railroad operating and maintenance crew's personal safety if they are exposed to the temperatures.
- **Airway.** Extreme cold can adversely impact all of the mechanical components of an airplane, including the engine and control surfaces. Planes in flight during extreme cold periods can experience engine icing.
- **Waterways.** Extreme cold events would most likely only occur during periods of the year when commercial navigation on the Mississippi River would be seasonally closed. Recreational boaters in airboats, or recreationists crossing the Mississippi River in snowmobiles could be subject to extreme hazard if they became stranded in an inaccessible area due to mechanical failure or other cause.
- **Municipal Water.** In the county there are 44 municipal wells and water systems in operation, see Table 3-11. The water systems are at slight risk to extreme cold temperatures as water mains are more susceptible to problems (frozen water lines) but service interruption would be minimal except in extreme cases.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to extreme cold is negligible and would not interrupt services provided by these facilities.
- **Hazardous Material Sites.** Depending upon the type of material involved, there could be problems from the material escape if the containers or piping rupture during extreme cold.

### **Extreme Cold Risk Assessment Designation**

Extreme Cold Historical Occurrence Rating: Moderately Low - 4

Extreme Cold Vulnerability Rating: Catastrophic - 7

Extreme Cold Probability Rating: Likely - 5

Extreme Cold Local Official Survey Rating: Medium/High - 6

Extreme Cold Risk Assessment Designation: **High Threat – 22 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Extreme Cold Hazard Mitigation Ideas:**

- Local governments can organize outreach to vulnerable populations during periods of extreme temperature
- Communities can encourage utility companies to offer special arrangements for paying heating bills
- A community can establish heating and/or cooling centers for vulnerable populations

## **3.12 La Crosse County, Earthquake**

**Earthquake Definition:** An earthquake is a shaking or sometimes violent trembling of the earth which results from the sudden shifting of rock beneath the earth's crust. This sudden shifting releases energy in the form of seismic waves or wave-like movement of the earth's surface. Earthquakes can strike without warning and may range in intensity from slight tremors to great shocks. They can last from a few seconds to over five minutes and they may also occur as a series of tremors over a period of several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties may result from falling objects and debris, caused by the shaking of buildings causing damage or demolishing the buildings or other structures. Disruption of communications, electrical power supplies and gas, sewer and water lines should be expected. Earthquakes may trigger fires, dam failures, landslides or releases of hazardous material, compounding their disastrous effects.

Earthquakes are measured by two principal methods: seismographs and human judgment. The seismograph measures the magnitude of an earthquake and interprets the amount of energy released on the *Richter scale*, a logarithmic scale with no upper limit. This amount is expressed in Arabic numbers and each unit of increase represents a ten-fold increase in magnitude. An earthquake measuring 6.0 on the Richter scale is ten times more powerful than a 5.0 and one hundred times more powerful than an earthquake, measuring 4.0. This is a measure of the absolute size or strength of an earthquake and does not consider the effect at any specific location. The *Modified Mercalli Intensity Scale* is an intensity scale expressed in Roman numerals, which reports the amount of shaking and effects at a specific location based on expert judgment. The scale has twelve classes and ranges from I (not felt) to XII (total destruction). No occurrence of earthquakes in Wisconsin has been severe. The most serious recorded earthquake registered 5.1 on the Richter scale and had a maximum intensity on the Mercalli Scale of VII.

**Earthquake History and Frequency:** No major earthquakes have occurred in La Crosse County in recent history.

### **Earthquake Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Earthquake a risk factor of 12 indicating this natural hazard is a low threat to the county. Earthquakes can range from nothing felt to total destruction and loss of life. Since no major earthquakes have occurred in Wisconsin or La Crosse County in recent history the risk to these facilities is insignificant. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Businesses vulnerability to earthquakes can range from nothing felt to total destruction and loss of life. Since not major earthquakes have occurred in Wisconsin or La Crosse County the risk to businesses is insignificant.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture vulnerability to earthquakes is negligible.
- **Roads and Highways.** Earth movement can cause obvious incongruities with the roadway, as well as secondary damage due to related landslides, broken utility lines, and collapsed buildings on the roadway. This secondary damage of landslides would be most severe on roads in rock cuts, or cliffs, or any of the roads leading ridge tops. Broken water or

sewer lines could present the biggest problem in the eleven incorporated communities. Broken gas mains would present the greatest danger of fire and explosion, especially in the vicinity of downed power lines that are creating sparks.

- Railroads. Earth movement can cause obvious incongruities with railroad lines, as well as secondary damage due to landslides along the Mississippi River. Even a slight shift in the earth's surface can cause switches to not properly align, and a slight tremor could cause a parked rail car to move if the brakes were not properly set.
- Airway. Earth movement could cause parked planes to shift position, and in severe, but unlikely, movement, to smash into one another. Underground fuel tanks could rupture. Hangers and other structures could be damaged. Obviously an earthquake would have no direct effect on an airborne aircraft, but runway damage could occur, with rutting or furrowing affecting the unsuspecting pilot upon landing.
- Waterways. An earth tremor could cause wave action, and possibly temporary current reversal on even a large river like the Mississippi. If the event should occur during the active commercial navigation season the problems caused could include, moored barges breaking free, tows running aground, and lock chamber doors becoming jammed and inoperative.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability is negligible and would not interrupt services provided by the facilities except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to earthquakes is negligible and would not interrupt services except in extreme cases.
- Hazardous Material Sites. Industrial operations that require the piping of hazardous material to various locations in the storage or manufacturing process are most prone to earth tremor damage in that the pipes could break during the tremors. Material stored in tanks or other containers is always prone to the containers falling or being hit by debris, and breaking, resulting in the release of the material.

**Earthquake Risk Assessment Designation**

Earthquake Historical Occurrence Rating: Low - 1

Earthquake Vulnerability Rating: Catastrophic - 7

Earthquake Probability Rating: Possible - 3

Earthquake Local Official Survey Rating: Low - 1

Earthquake Risk Assessment Designation: **Low Threat – 12 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Earthquake Hazard Mitigation Ideas:** • Information gained from seismic hazard mapping can be used to assess risk • State and local highway departments should review construction plans from all bridges to determine their susceptibility to collapse • Local or state governments can use community outreach activities to foster an awareness of earthquake mitigation activities • Earthquake hazards can be mitigated through land use planning • Encourage local governments to adopt and enforce updated building code provisions is one effective way to reduce earthquake damage risk

**3.13 La Crosse County, Extreme Heat Risk Assessment**

**Extreme Heat Definition:** A heat wave is primarily a public health concern. During extended periods of very high temperatures or high temperatures of humidity, individuals can suffer a variety of ailments including heat exhaustion and heat stroke. Heat stroke in particular is a life-threatening condition that requires immediate medical attention. In addition to posing a public health hazard, periods of excessive heat usually result in high electrical consumption for air conditioning, which can cause power outages and brown outs. The majority of deaths during a heat wave are the result of heat stroke. The elderly, disabled and debilitated are especially susceptible to heat stroke.

Excessive heat in Wisconsin has become the most deadly hazards in Wisconsin in recent times. According to the National Weather Service Milwaukee/Sullivan Office, since 1982 heat waves have been responsible for more deaths in Wisconsin (216) than all other natural disasters. This is an average of 7 deaths per year.

**Extreme Heat History and Frequency:**

1990's:	5 reported events by NCDC - 7/12/95-7/15/95 (141 deaths directly or indirectly related to heat), 10/12/95, 7/4/99-7/5/99 (heat index value of 105-115 degrees), 7/23/99 (heat index value of 105 – 115 degrees), 7/28/99-7/31/99 (heat index value 110-125 degrees, 12 direct and 8 indirect deaths reported statewide)
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2000-2010	2 reported events by NCDC - 7/31/01 through first week and a half of August (temperatures over 100 degrees, 10 direct and 5 indirect deaths reported statewide), 7/27/10 (heat index of 105 degrees).
2011	1 reported event by NCDC - 7/17/2011 - Between 17 <sup>th</sup> -20 <sup>th</sup> , heat indices topped 110- 115 degrees, 2 deaths were directly related to extreme heat.

The National Climatic Data Center reported that La Crosse County experienced 5 extreme heat events during the 1990's, 2 events in the 2000's and one event was recorded in 2001. The National Weather Service records show that between 1982 and 2011 La Crosse County experienced 47 heat wave days which resulted in 2 deaths. Using the National Weather Service data, La Crosse County can expect to experience 2 heat wave days per year. Damages associated with extreme heat are difficult to estimate, as amounts directly related to extreme heat are not tracked at the county level. Most damages which occur are additional costs associated with the additional power consumption by air conditioning and the costs associated with medical responses to heat strokes.

**Extreme Heat Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns extreme heat a risk factor of 22 indicating this natural hazard is a high risk to the county. See Tables 3-9 through 3-16 and Maps 3-1 through 3-5 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Extreme heat can lead to physical problems for workers (heat exhaustion) and lower productivity. The extreme heat can cause mechanical equipment failures, which could lead to economic loss and disruption of inputs and outputs.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Extreme heat can cause dangerous physical conditions (heat exhaustion) for agricultural workers. Livestock can be vulnerable to extreme heat causing more stress on the animal and less production. In addition, severe heat can cause injuries and death. Equipment failures due to overheating could disrupt agricultural production.
- Roads and Highways. High heat does not present as direct a threat to transportation in general than do some other natural hazards such as blizzards or extreme cold, however heat can have many side impacts, such as the safety and comfort of people and livestock having to endure the condition without air conditioning. Motor vehicles may overheat and stall in unsafe locations at highway intersections, fuel stored, illegally, in vehicle trunks or truck beds is more apt to volatilize and cause safety problems. Extreme heat can cause asphalt road surface buckling and rough bumps and cracks. Extreme heat can cause dangerous working conditions for highway maintenance workers outdoors or in poorly ventilated or non-air conditioned shop buildings.
- Railroads. Extreme heat can cause buckling and kinking of welded continuous steel rails. Extreme heat can cause dangerous working conditions for track and other rail maintenance workers outdoors or in poorly ventilated or non-air conditioned shop buildings.
- Airway. Extreme heat can cause volatilization of fuel in aircraft parked outside. Extreme heat can cause changes in atmospheric pressure and in the lift characteristics of small aircraft that a pilot must be aware of and compensate for.
- Waterways. The biggest impact of extreme heat on commercial navigation is apt to be the danger of heat exhaustion to deck crews working outdoors. Hot weather could increase the number of pleasure craft operating on the Mississippi River and result in increased conflict with safe navigation.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability is negligible and would not interrupt services provided by the facilities except in extreme cases. In extreme cases water usage may increase to the point where the water system supply may be stressed.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to extreme heat is negligible and would not interrupt services except in extreme cases.
- Hazardous Material Sites. Hazardous material of various types could volatilize in extreme heat, especially if safety relief valves were not operating properly.

**Extreme Heat Risk Assessment Designation**

Extreme Heat Historical Occurrence Rating: Moderately High - 5

Extreme Heat Vulnerability Rating: Catastrophic - 7

Extreme Heat Probability Rating: Possible - 5

Extreme Heat Local Official Survey Rating: Medium - 5

Extreme Heat Risk Assessment Designation: **Moderate Threat - 22 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Extreme Heat Hazard Mitigation Ideas:** • Local governments can organize outreach to vulnerable populations during periods of extreme temperature • Communities can encourage utility companies to offer special arrangements for paying utility bills • A community can establish heating and/or cooling centers for vulnerable populations.

### 3.14 La Crosse County, Agricultural Risk Assessment

**Agricultural Definition:** Agriculture is the science or art of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation of these products for man's use - *Webster's New Collegiate Dictionary*. For more than 150 years, agriculture has driven the State of Wisconsin's economy. It remains the number one industry in Wisconsin, employing one of every five people. A 2004 U.S. Department of Commerce, Bureau of Economic Analysis report indicates showed that approximately 1.4% of La Crosse County's employed civilian population was employed in the Farming sector.

There are many natural hazards that can affect agricultural production in the State. Droughts reduce crop growth and yields, and can decimate croplands. Extreme temperatures, high winds, hail and other extreme weather conditions can also decimate crop production. Insects can also decimate a crop resulting in a total loss. Animal diseases in farm animals carry the potential of harming not only the animals' health, but also human health in some cases. Agricultural losses from floods include crop loss, soil erosion or property damage to farm structures and equipment. These are just some of the hazards that may affect agriculture. In La Crosse County agricultural losses are restricted to the Towns with the exception of the Town of Campbell which is exclusively urban with no agriculture located within the Town boundaries.

**Agricultural History and Frequency:** The history of agricultural losses due to droughts, floods, extreme temperatures, high winds, and hail are detailed under the appropriate natural hazard section.

There are so many natural hazards that can affect agricultural production (droughts, floods, extreme temperatures, high winds, hail, insects etc.) to name a few. Department of Revenue records show that in 2011 La Crosse County had approximately 113,328 acres of agricultural land. Agricultural hazards can occur annually in the county.

#### Agricultural Vulnerability Assessment

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Agriculture a risk factor of 12 indicating this natural hazard is a low risk to the county. Critical facility's vulnerability to agriculture is not applicable. See Table 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For most businesses and industries, vulnerability to agriculture production and raising of livestock would be negligible. Businesses and industries that are involved in the growth, production, processing, manufacturing, distribution and wholesale and retail sales of agricultural products and food products can be vulnerable to crop and livestock losses. These businesses and industries can sustain economic losses from reduced production of agricultural commodities due to damages caused by natural hazards.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture production is vulnerable to numerous natural hazards including droughts, floods, extreme temperatures, high winds, hail etc. and are detailed under the appropriate hazard section.
- **Roads and Highways, Railroads, and Waterways.** Unlike the other risks outlined in this section, agricultural risk is not a natural hazard, but rather an economic condition created by the occurrence of natural hazards. The only likely result of an agricultural hazard, or crop failure, would be a reduction in truck, train, and barge traffic due to less grain being produced. Ultimately an import of hay or other livestock feed into the area could result.

- **Airway.** Agricultural risk is an economic condition, not a natural hazard. There would be no direct threat to the airports or air travel.
- **Municipal Water.** In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to agriculture is not applicable.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to agriculture is not applicable.
- **Hazardous Material Sites.** If the agricultural risk is brought about because of severe drought, then it is likely natural weather conditions and ground cover condition is also conducive to the danger of wild fire. The same threat caused by fire would be possible. If the agricultural risk is caused by a shift in market conditions, or severe insect or disease infestation, the wildfire threat would not be as high.

**Agricultural Risk Assessment Designation**

Agricultural Historical Occurrence Rating: Low - 2

Agricultural Vulnerability Rating: Limited - 3

Agricultural Probability Rating: Possible - 3

Agricultural Local Official Survey Rating: Medium - 4

Agricultural Risk Assessment Designation: **Low Threat – 12 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Agricultural Hazard Mitigation Ideas:** Agricultural Hazard Mitigation Ideas for droughts, floods, extreme temperatures, high winds, and hail are detailed under the appropriate natural hazard section.

**3.15 La Crosse County, Drought Risk Assessment**

**Drought Definition:** A drought is an extended period of unusually dry weather, which may be accompanied by extreme heat (temperatures which are 10 or more degrees above the normal high temperature for the period). There are basically two types of drought in Wisconsin, agricultural and hydrologic. Agricultural drought is a dry period of sufficient length and intensity that markedly reduces crop yields. Hydrologic drought is a dry period of sufficient length and intensity to affect lake and stream levels and the height of the groundwater table. These two types of drought may but do not necessarily, occur at the same time.

Wisconsin is most vulnerable to agriculture drought. The state has about 16,400,000 acres of farmland on 78,000 farms and was ranked 10<sup>th</sup> in the country in overall farm receipts (Wisconsin Agricultural Statistics Service). Even small droughts of limited duration can significantly reduce crop growth and yields, adversely affecting farm income. More substantial events can decimate croplands and result in total loss, hurting the local economy. Droughts also greatly increase the risk of forest fires and wildfires because of the extreme dryness. In addition, the loss of vegetation in the absence of sufficient water can result in flooding, even from average rainfall, following drought conditions.

**Drought History and Frequency:**

1970's:	1 event report by Wisconsin Emergency Management, 1976, \$1 million-Public Gov't Property and Facilities Damage and \$623 million Private-Individual Property, Crop and Facilities Damage to La Crosse and 63 other counties, Presidential Emergency Declaration.
1980's	1 event report by Wisconsin Emergency Management, <i>Hazard Analysis, November 2002</i> - One of the most severe droughts on record for state - 1987-1998 drought that resulted in 52% of the state's 81,000 farms having a crop loss of 50% or more. All Wisconsin counties were designated eligible for drought assistance.

Wisconsin Emergency Management reported one major drought event (1976), which affected La Crosse and 63 other counties in the State. A Presidential Emergency Declaration was made for those counties. According to *Wisconsin Emergency Management's Hazard Analysis, November 2002*, Wisconsin's five most significant droughts in terms of severity and duration are: 1987-1988, 1976-1977, 1955-1959, 1948-1950 and 1929-1934.

**Drought Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Drought a risk factor of 14 indicating this natural hazard is a low threat to the



county. In drought situations, water use may be restricted and affect the operation of these facilities. Hospitals may need water storage systems in emergency situations. Fire stations need adequate water capacity to fight fires. Critical facility's vulnerability to droughts is negligible and won't interrupt services provided by these facilities except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.

- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For most businesses and industries, vulnerability to drought would be negligible. Examples of businesses and industries that are negatively impacted by drought conditions include: agribusinesses, tourism related businesses, boat dealerships and marinas, golf courses, businesses that rely on barge traffic for shipment of raw materials or transporting finished goods and products, and fisheries.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture's vulnerability to drought can be catastrophic. One of the most severe droughts in the state occurred in 1987-1988, which resulted in 52% of the states, 81,000 farms had crop losses of 50% or more. All Wisconsin counties were designated eligible for drought assistance. The costs and losses to agriculture producers can include: reduced yields and crop loss, increased insect infestation and plant disease, increased irrigation, cost of new or supplemental water resource development, wind erosion of top soil, forced reduction of foundation stock, reduced milk production, increased feed costs, high livestock mortality rates, disruption of reproductive cycles, decreased stock weights, reduced productivity of pastureland and loss of farms and dairy herds.
- **Roads and Highways, Railroads, and Waterways.** The impact of drought on transportation modes is much the same as that caused by agricultural failure; a reduction in agriculturally related freight traffic.
- **Airway.** Extended drought could increase the possibility of wildfires. The possible impact of wildfires on the La Crosse Municipal Airport and the Holland Airpark, and on light plane travel has been discussed under that topic.
- **Municipal Water.** In the county there are 44 municipal wells and water systems in operation, see Table 3-11. Municipal water vulnerability to droughts can include decreased supply of water from low water tables and increased pollutant concentrations. Services from these facilities should not be interrupted except in extreme cases.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to droughts can include decreased water supply and diminished sewage flows. Services from facilities should not be interrupted except in extreme cases.
- **Hazardous Material Sites.** Extended drought could increase the possibility of wildfires. The possible impact of wildfires on hazardous material sites has been discussed under that topic.

### Drought Risk Assessment Designation

Drought Historical Occurrence Rating: Low - 2

Drought Vulnerability Rating: Critical - 5

Drought Probability Rating: Possible - 3

Drought Local Official Survey Rating: Medium - 4

Drought Risk Assessment Designation: **Low Threat – 14 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Drought Hazard Mitigation Ideas:** • Citizens can be encouraged to take water-saving measures, especially when extra water is needed for irrigation and farming • Maintain adequate water storage for human consumption • Communities can pass ordinances to prioritize or control water use, particularly for emergency situations • Contingency plans can be developed to help anticipate needs and actions to take during a drought • Designs or plans for water delivery systems can include consideration of drought events • Crop insurance can preserve economic stability for farmers during a drought

### 3.16 La Crosse County, Fog Risk Assessment

**Fog Definition:** Simply, fog is a cloud near the ground. A cloud is an area of condensed water droplets (or ice crystals in the upper atmosphere). The same processes that produce clouds high above the ground can produce clouds near the surface. Therefore, understanding fog requires some basic meteorology. Fog forms when air can no longer hold all of the moisture it contains. This happens when 1) air is cooled to its dew point, which is the temperature at which air is holding as much moisture as it can (cool air can hold more moisture than warm air) or 2) the amount of moisture in the air increases. Once air has reached its dew point, it condenses onto very small particles forming tiny water droplets that comprise fog.

Fog is a hazard mostly for one very important reason: reduced visibility. Airport delays, automobile accidents, shipwrecks, plane crashes, and many other transportation problems are frequently caused by fog. However, like several other natural hazards, fog can also be beneficial. Several species of plants, including some crops, depend on fog for moisture and cool temperatures from decreased sunlight.

**Fog History and Frequency:**

2010's:	2 events reported by NCDC - 3/8/-3/9/2010 Dense Fog, La Crosse Airport recorded dense fog with visibilities of 0 to ¼ mile; 12/29-12/31/10, dense fog with visibilities of a ¼ mile or less occurred.
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Fog is responsible for an average of over \$1 million in property damage, dozens of injuries, and several deaths every year in the United States. The financial cost of transportation delays caused by fog has not been calculated, but is substantial.

**Fog Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Fog a risk factor of 12 indicating this natural hazard is a low threat to the county. Critical facilities vulnerability to fog is negligible and would not interrupt services provided by these facilities. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Businesses and industries vulnerability to fog would be negligible.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Several species of plants, including some crops, depend on fog for moisture. Agriculture's vulnerability to fog is negligible except in extreme cases during prolonged periods of heavy rains, fog may be a contributing factor in some plant diseases.
- Roads and Highways. Fogs are most apt to occur in lower elevations blocked by wind flow. STH 35 along the Mississippi River is a good example of fog occurrence. Poor visibility is the major problem with fog, although in the early spring and late fall freezing of the roadway surface can accompany fog and present an additional hazard. Heavy fog can be particularly challenging to pedestrians and bicyclists, even those not directly on the roadway. Heavy fog in parking lots can present security and safety problems for people walking to their cars to and from buildings.
- Railroads. The location of railway lines along the Mississippi River requires train engineers to operate more frequently in fog. The same visibility problems confronting the motorist confront the railroad engineer, except the rail operator is more assured other trains will be clear of the right-of-way than a motorist can be assured other vehicles will be clear of the highway. The train engineer still must contend with pedestrians and animals being on the track and not seen in a heavy fog, as well as the possibility of an unseen vehicle at a road grade crossing.
- Airway. The La Crosse Municipal airport is a commercial airport and is equipped to handle aircrafts in low visibility situations. The Holland Airpark is not equipped to handle aircraft in conditions other than Visual Flight Rules.
- Waterways. Commercial vessels on the Mississippi River are equipped with radar and Coast Guard licensed pilots that know how to use the equipment. Navigation in fog is possible, but the reduced visibility increases the danger. Pleasure craft operated by recreationists pose the biggest threat to safety during foggy periods. Fog makes deck work more dangerous for deck hands on commercial craft.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to fog is negligible and would not interrupt services provided by these facilities.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to fog is negligible and would not interrupt services provided by these facilities.
- Hazardous Material Sites. Fog presents no specific hazard to stored hazardous material. Hazardous material being transported is subject to the same danger as the transportation mode being used.

**Fog Risk Assessment Designation**

- Fog Historical Occurrence Rating: High - 1
- Fog Vulnerability Rating: Negligible - 1
- Fog Probability Rating: Highly Likely - 7

Fog Local Official Survey Rating: Medium - 3

Fog Risk Assessment Designation: **Low Threat – 12 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Fog Hazard Mitigation Ideas:** ● Local and State governments can develop automated visibility warning systems that use weather sensors to detect reduced visibility conditions (heavy rains, fog white-out). These systems could trigger a permanent or portable Dynamic Message Sign (DMS) with a message indicating the adverse driving conditions. These same systems could also distribute information on the road hazard to traffic management centers, public safety agencies, or other traffic information systems. ● Educate citizens on weather and road condition resources such as radio, cable TV, Internet etc.

### 3.17 La Crosse County, Landslide Risk Assessment

**Landslide Definition:** A landslide is a relatively sudden movement of soil and bedrock downhill in response to gravity. The movement of the soil can cause damage to structures by removing the support for the foundation of a building or by falling dirt and debris colliding with or covering a structure. Landslides can be triggered by heavy rain, bank or bluff erosion, or other natural causes.

**Landslide History and Frequency:**

2000's:	3 events reported - During the flooding that occurred 05/31/2000-6/2/2000 a mudslide buried a home under the Mississippi River bluffs in De Soto, Wisconsin. On 07/27/00 flash flooding triggered some mudslides. 8/19/2007 Mudslides along highway 35.
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Mudslides along Bliss road in the City of La Crosse did not damage any structures but did close down the road. The city did receive a mitigation grant to repair the road and stabilize areas along the road.

In Wisconsin landslides generally are not dramatic, however as indicated by the above data there have been instances of mudslides burying houses along the bluffs of the Mississippi River and the collapsing of hillsides during heavy rainfall.

**Landslide Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Landslide a risk factor of 8 indicating this natural hazard is a low risk to the county. Critical facility's vulnerability to landslides is negligible and would not interrupt services provided by these facilities except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. For most businesses and industries vulnerability to landslides would be negligible except for buildings located next to steep slopes or bluffs.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture's vulnerability to landslides is negligible because this natural hazard is usually an isolated incident and damages would be confined to a limited area.
- Roads and Highways. Landslides would be most severe on roads in rock cuts, or cliffs.
- Railroads. Landslides can cause obvious damage with railroad lines, especially on lines along the Mississippi River.
- Airway. The La Crosse Municipal Airport and the Holland Airpark are both located on flat areas and neither is located near a hill so landslides pose no threats to these facilities.
- Waterways. A landslide on a bluff along the Mississippi River could cause wave action on the river or affect boats moored at marinas in extreme cases. The chance that barge traffic would be affected would be negligible.
- Municipal Water. In the county there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities vulnerability to landslides is negligible and would not interrupt services provided by the facilities except in extreme cases.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. These facilities vulnerability to landslides is negligible and would not interrupt services provided except in extreme cases.

- **Hazardous Material Sites.** Industrial operations that require the piping of hazardous material to various locations in the storage or manufacturing process are most prone to landslide damage in that the pipes could break from a landslide. Material stored in tanks or other containers at the base of hills would be prone to the containers being hit by a landslide, and breaking, resulting in the release of the material.

#### **Landslide Risk Assessment Designation**

Landslide Historical Occurrence Rating: Low - 2

Landslide Vulnerability Rating: Negligible - 1

Landslide Probability Rating: Possible - 3

Landslide Local Official Survey Rating: Low - 2

Landslide Risk Assessment Designation: **Low Threat – 8 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Landslide Hazard Mitigation Ideas:**

- Local governments, developers, and residents can make better decisions using maps
- Building codes can set construction standards, including minimum foundation requirements, in landslide-prone areas
- Zoning ordinances may be used to create buffers between structures and high-risk areas
- A special purpose ordinance for slide-prone areas may be used to limit fill or dumping
- Set drainage control regulations to reduce the risk of landslides resulting from saturated soils
- Grading ordinances require developers and landowners to obtain permits prior to filling or regrading
- Hillside development ordinances are special purpose ordinances that set specific standards for construction on hillsides
- Sanitary system codes can reduce the effect of drainage on landslides by limiting the type and location of sanitary systems
- Open space designations keep landslide prone areas undeveloped
- Structures may be moved to less hazardous locations
- Land and structures may be purchased by and titled in the name of a local government body than can remove structures and enforce permanent restrictions on development
- Restraining structures may be designed and used to hold soil in place
- Grading can be used to increase slope stability
- Various types of vegetation increase soil stability
- Placing utilities outside of landslide areas decreases risk of service disruption
- Restrictive covenants, a legal binding agreement, can be used in a private development to impose restrictions on land use

### **3.18 La Crosse County, Subsidence Risk Assessment**

**Subsidence Definition:** Sinkholes are a geological phenomenon that can pose a hazard to structures and people. A sinkhole is a depression in the ground caused by an evacuation of support from below the soil. Sinkholes can form naturally in areas with karst geology, areas that have limestone or other bedrock that can be dissolved by water. As the limestone rock under the soil dissolves over time from rainfall or flowing groundwater, a hollow area may form underground, into which surface soil can sink. Sinkholes can also be caused by human activity. Areas with karst conditions can be subject to groundwater contaminants from pollutants entering a sinkhole, fissure or other karst features.

Sinkholes have not been a factor in any natural disaster. However, karst features should be identified and considered in a community especially for land use planning, stormwater management and hazardous materials planning to avoid possible damage to structures or contamination of groundwater. Even a well 100 feet deep can be contaminated for surface pollutants entering a sinkhole.

**Subsidence History and Frequency:** No information was found on major subsidence events in La Crosse County.

#### **Subsidence Vulnerability Assessment**

- **Critical Facilities.** In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. The Natural Hazard Risk Assignment assigns Subsidence a risk factor of 6 indicating this natural hazard is a low risk to the county. Buildings are susceptible to sink holes and can cause a wide range of damage to structures including damage to foundations, partial collapse and/or total destruction of buildings. Sinkholes have not been a factor in any natural disasters in the county. Critical facility's vulnerability to sinkholes in this area is negligible and would not interrupt services provided by these facilities except in extreme cases. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.

- **Business and Industry.** In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Buildings are susceptible to sinkholes and can cause a wide range of damages to structures including damage to foundations, partial collapse, and/or total destruction of buildings. Businesses and industries' vulnerability to sinkholes is negligible in this area.
- **Agriculture.** In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture vulnerability to sinkholes is negligible because this natural hazard is usually an isolated incident and damages would be confined to a limited area.
- **Roads and Highways.** Roads built on areas with karst topography could be subject to subsidence. Sinkholes, when they have occurred in other areas, often happen suddenly, and a vehicle on the highway could literally fall into a hole opening beneath it. The danger of the large subsidence area remains a threat to an unsuspecting motorist, especially at night, until proper barricades can be put up. The threat of subsidence is greater on the ridge top and side hill areas than in the valleys.
- **Railroads.** Subsidence along the railroad tracks could come from direct undermining of the banks by river action.
- **Airway.** The La Crosse Municipal airport and the Holland Airpark are not built in an area prone to subsidence.
- **Waterways.** Soil surface subsidence would have little impact on river navigation.
- **Municipal Water.** In the county there are 44 municipal wells and water systems in operation, see Table 3-11. Sinkholes can cause damage to structures and underground piping that carries the water supply. Wells can be contaminated from surface pollutants entering sinkholes. These facilities vulnerability to sinkholes in this area is negligible and would not interrupt services provide by the facilities except in extreme cases.
- **Wastewater Treatment Facilities.** There are 11 wastewater treatment facilities in operation in the county, see Table 3-12. Sinkholes can cause damage to structures and underground piping that carry wastewater. These facilities vulnerability to sinkholes is negligible and would not interrupt services provides except in extreme cases.
- **Hazardous Material Sites.** Unless a hazardous material storage or disposal site was built in karst topography or on unstable wetland soils, an unlikely possibility, subsidence would not pose a major problem.

#### **Subsidence Risk Assessment Designation**

Subsidence Historical Occurrence Rating: Low -1

Subsidence Vulnerability Rating: Negligible - 1

Subsidence Probability Rating: Possible - 3

Subsidence Local Official Survey Rating: Low - 1

Subsidence Risk Assessment Designation: **Low Threat – 6 points**

See Table 3-2 for a detailed analysis to determine the above Risk Assessment Designation.

**Subsidence Hazard Mitigation Ideas:** • Local governments and state governments can promote community awareness of subsidence risks and effects • Old mining areas or geologically unstable terrain should be identified and mapped so that development can be prevented and limited • Areas susceptible to collapse can be maintained as public open space • Local governments can acquire and title land and enforce permanent restrictions on development • Filling or buttressing subterranean open spaces, as with abandoned mines • Move structures to less hazardous locations • Monitor groundwater levels in subsidence-prone areas

### **3.19 La Crosse County, Pandemic Flu Risk Assessment**

**Pandemic Flu Definition:** A pandemic is a global disease outbreak. Flu pandemic occurs when a new influenza virus emerges for which people have little or no immunity, and for which there is no vaccine. The disease spreads easily person-to-person, cause's serious illness, and can sweep across the country and around the world in very short time.

It is difficult to predict when the next influenza pandemic will occur or how severe it will be. Wherever and whenever a pandemic starts, everyone around the world is at risk. Countries might, through measures such as border closures and travel restrictions, delay arrival of the virus, but cannot stop it. Flu Pandemics are low frequency events, but they have the capability of being extreme impact disasters

### **Pandemic Flu History and Frequency:**

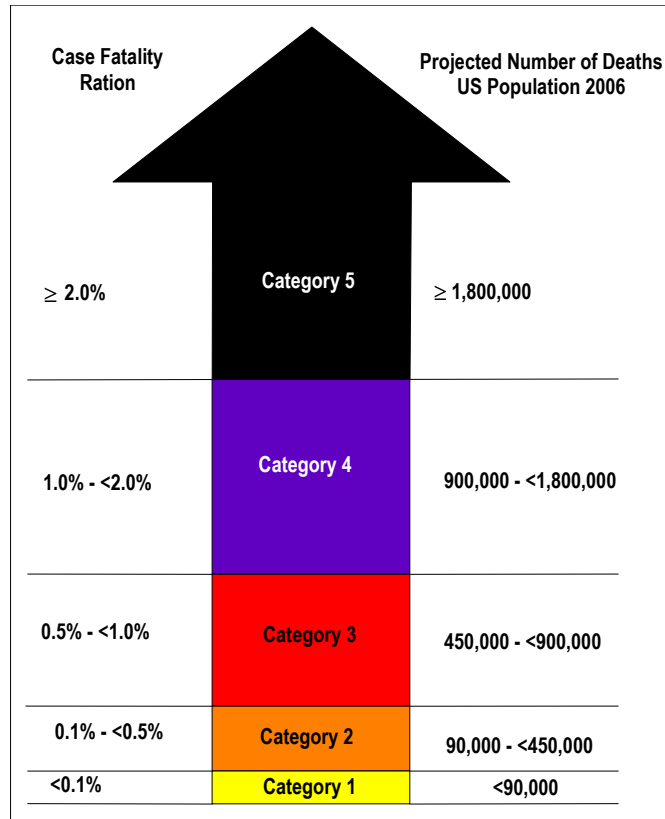
Flu Pandemics are naturally occurring events. Flu pandemics have occurred three times in the last century, in 1918, 1958, and 1967. The 1918 pandemic was the most severe disease outbreak in the history of the world. An estimated 20-40 million people died worldwide. It is not a matter of if another pandemic will occur but when will it occur and how lethal will it be.

### **Pandemic Flu Vulnerability Assessment**

- Critical Facilities. In the county 172 service orientated critical facilities were identified. These include (28) government and military facilities; (17) hospitals, clinics, and residential facilities; (22) police and fire facilities; and (105) schools. These facilities will be severely affected during a pandemic flu. Hospitals and clinics will be inundated with the sick, Residential Care facilities will be closed to visitors and all the services will be severely affected by employees unable to come to work. See Tables 3-7 through 3-10 and Maps 3-1 through 3-4 for further information and location of these facilities.
- Business and Industry. In La Crosse County there are 2,969 businesses and industries that employ 56,501 people, with an annual payroll of approximately \$1.87 billion, see Table 3-6. Businesses and industries will be severely affected by employees unable to come to work due to illness, at-home caring for ill family members, or perhaps a fear of going to work due to the contagious nature of the disease.
- Agriculture. In 2011, county land use statistics indicated that 36.9% or 111,328 acres of county land were classified as agricultural and another 41,510 acres (13.7% of county land) were classified as agriculture forest. Agriculture will be affected by workers unable to tend to crops and animals due to being unable to come to work.
- Roads and Highways. Automobiles and buses carrying affected people are a means of spreading a pandemic flu quickly throughout the U.S. and the world. A way of slowing this spread will be to ask people not to travel. In addition highway crews and maintenance personnel will be affected.
- Railroads. Trains carrying affected people are a means of spreading a pandemic flu quickly throughout the U.S. and the world. A way of slowing this spread will be to stop passenger train services. In addition other train services would be affected due to the lack of operators who would be unable to work due to the flu.
- Airway. Airplanes carrying affected people are a means of spreading a pandemic flu quickly throughout the U.S. and the world. A way of slowing this spread will be to close down airports. A pandemic flu will have a severe impact on airways.
- Waterways. Pandemic Flu presents no specific hazard to waterways.
- Municipal Water. In the County there are 44 municipal wells and water systems in operation, see Table 3-11. These facilities' vulnerability to Pandemic Flu is through the people who would be maintaining and running these facilities. If the operators are affected then the facility will be affected due to lack of operators.
- Wastewater Treatment Facilities. There are 11 wastewater treatment facilities in operation in the County, see Table 3-12. These facilities' vulnerability to Pandemic Flu is through the people who would be maintaining and running these facilities. If the operators are affected then the facility will be affected due to lack of operators.
- Hazardous Material Sites. Pandemic Flu presents no specific hazard to stored hazardous material but could impact persons responsible for monitoring and maintaining these sites.

**Pandemic Flu Risk Assessment Designation**

The index on the right is a Pandemic Severity Index, this index uses case fatality ratio as the critical driver for categorizing the severity of a pandemic. The index is designed to enable estimation of the severity of a pandemic on a population level to allow better forecasting of the impact of a pandemic.



Source: *Interim Pre-Pandemic Planning Guidance: Community Guidance for Pandemic Influenza Mitigation in the United States*

**Pandemic Flu Hazard Mitigation Ideas:** The pandemic mitigation framework that is proposed is based upon an early, targeted, layered application of multiple partially effective nonpharmaceutical measures. It is recommended that the measures be initiated early before explosive growth of the epidemic and, in the case of severe pandemics, that they be maintained consistently during an epidemic wave in a community. The pandemic mitigation interventions described in this document include:

1. Isolation and treatment (as appropriate) with influenza antiviral medications of all persons with confirmed or probable pandemic influenza. Isolation may occur in the home or healthcare setting, depending on the severity of an individual's illness and/or the current capacity of the healthcare infrastructure.
2. Voluntary home quarantine of members of households with confirmed or probable influenza case(s) and consideration of combining this intervention with the prophylactic use of antiviral medications, providing sufficient quantities of effective medications exist and that a feasible means of distributing them is in place.
3. Dismissal of students from school (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs, coupled with protecting children and teenagers through social distancing in the community to achieve reductions of out-of-school social contacts and community mixing.
4. Use of social distancing measures to reduce contact between adults in the community and workplace, including, for example, cancellation of large public gatherings and alteration of workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services. Enable institution of workplace leave policies that align incentives and facilitate adherence with the nonpharmaceutical interventions outlined above.

All such community-based strategies should be used in combination with individual infection control measures, such as hand washing and cough etiquette.

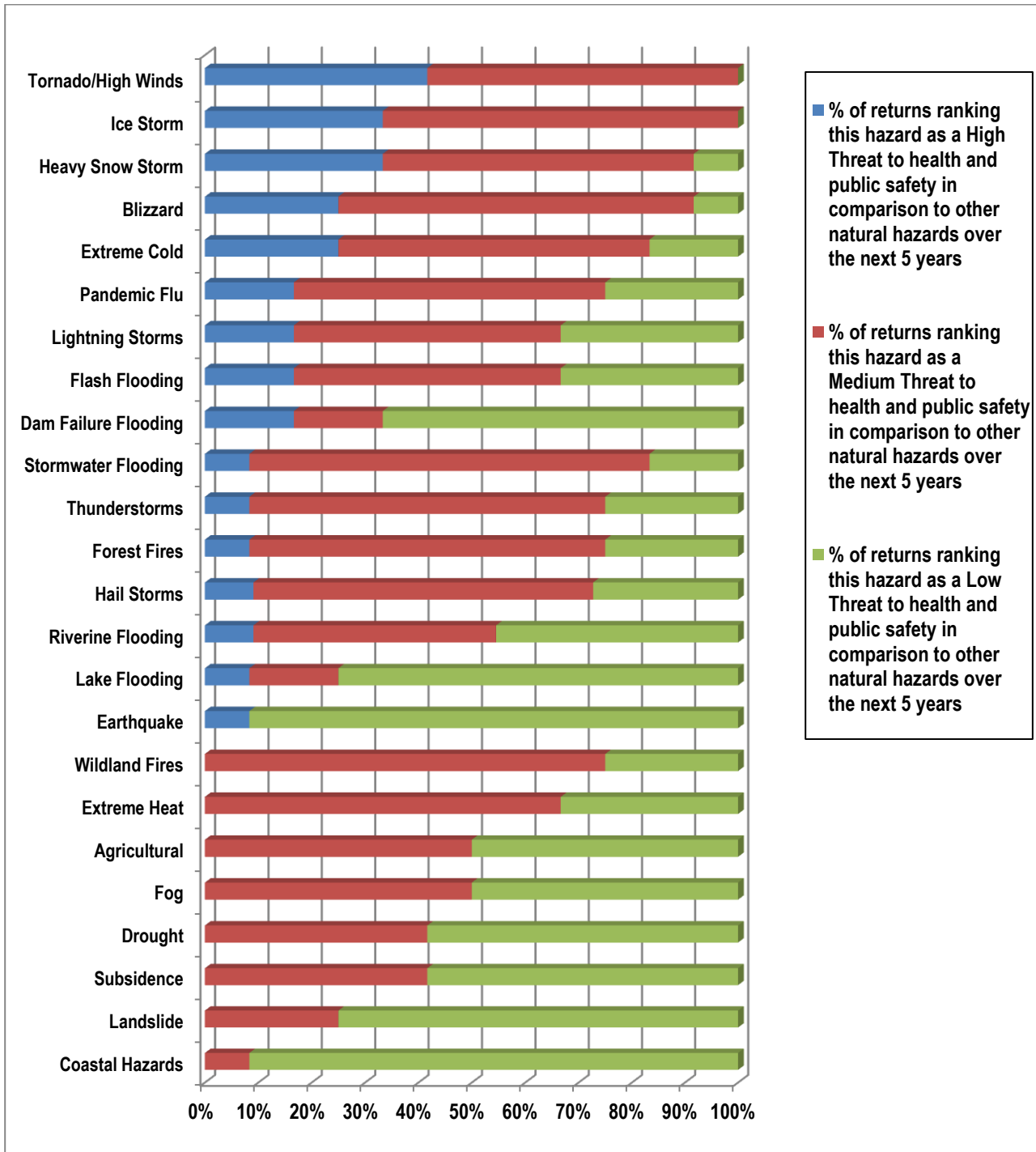
Implementing these interventions in a timely and coordinated fashion will require advance planning. Communities must be prepared for the cascading second- and third-order consequences of the interventions, such as increased workplace absenteeism related to child-minding responsibilities if schools dismiss students and childcare programs close.

Decisions about what tools should be used during a pandemic should be based on the observed severity of the event, its impact on specific subpopulations, the expected benefit of the interventions, the feasibility of success in modern society, the direct and indirect costs, and the consequences on critical infrastructure, healthcare delivery, and society. The most controversial elements (e.g., prolonged dismissal of students from schools and closure of childcare programs) are not likely to be needed in less severe pandemics, but these steps may save lives during severe pandemics. Just as communities plan and prepare for mitigating the effect of severe natural disasters (e.g., hurricanes), they should plan and prepare for mitigating the effect of a severe pandemic.



**Table 3-1  
La Crosse County Local Official's Hazard Risk Assessment Survey Results**

In spring of 2012 the La Crosse County Emergency Management Coordinator and the Mississippi River Regional Planning Commission coordinated efforts in developing a Natural Hazard Risk Assessment Survey for local officials to complete and return. This survey was mailed to all County Board Supervisors, Village Presidents, Town Chairman, Mayors, Chiefs of Police, the Sheriff, and Fire Department Chiefs in the County. Each local official was asked in the survey to rank the County's natural hazards as high, medium, or low regarding their opinion on each hazard's threat to their community's health and public safety. The following are results of this survey. Thirty seven surveys were mailed out and twelve were returned.



**Table 3-2  
La Crosse County Hazard Risk Assessment**

<b>Natural Hazards:</b>	<b>Historical Occurrence Rating Criteria:</b> <ul style="list-style-type: none"> <li>• Less than 4 occurrences in the past 25 years =Low rating, 1-3 points</li> <li>• 4 to 7 occurrences in the past 25 years = Moderately Low rating, 3-5 points</li> <li>• 8 to 12 occurrences in the past 25 years = Moderately High rating, 5-7 points</li> <li>• More than 12 occurrences in the past 25 years = High rating, 7-9 points</li> </ul>	<b>Vulnerability Rating Criteria:</b> <ul style="list-style-type: none"> <li>• Less than 10% of population or property adversely affected = Negligible rating, 1-3 points</li> <li>• 10% to less than 25% of population or property adversely affected = Limited rating, 3-5 points</li> <li>• 25% to 50% of the population or property adversely affected = Critical rating, 5-7 points</li> <li>• More than 50% of the population or property adversely affected = Catastrophic rating, 7-9 points</li> </ul>	<b>Probability Rating Criteria:</b> <ul style="list-style-type: none"> <li>• Less than 1% probability in the next 100 years = Unlikely rating, 1-3 points</li> <li>• From 1% and 10% probability in the next year or at least one chance in next 100 years = Possible rating, 3-5 points</li> <li>• Over 10% to nearly 100% probability in the next year or at least one chance in the next 10 years = Likely rating, 5-7 points</li> <li>• Nearly 100% chance in the next year = Highly Likely rating, 7-9 points</li> </ul>	<b>Local Official Hazard Survey Rating Criteria:</b> <ul style="list-style-type: none"> <li>• A majority of local officials were of the opinion that this hazard posed a “low” threat to health and public safety = Low rating, 1-3 points</li> <li>• A majority of local officials were of the opinion that this hazard posed a “medium” threat to health and public safety = Medium rating, 3-6 points</li> <li>• A majority of local officials were of the opinion that this hazard posed a “high” threat to health and public safety = High rating, 6-9 points</li> </ul>	<b>Risk Factor Rating Total:</b>	<b>Risk Assessment Designation:</b> <ul style="list-style-type: none"> <li>• A combined risk factor rating of 14 points or less = Low Threat</li> <li>• A combined risk factor rating of 15 to 21 points = Moderate Threat</li> <li>• A combined risk factor rating of 22 points or greater = High Threat</li> </ul>
Hailstorm	9	2	8	6	25	High Threat
Lightning Storm	3	2	7	5	17	Moderate Threat
Thunderstorm	9	2	8	6	25	High Threat
Tornado/High Winds	7	5	6	6	24	High Threat
Riverine/Flash Flooding	7	4	6	5	22	High Threat
Dam Failure Flooding	1	2	3	2	8	Low Threat
Forest/Wildland Fires	1	1	3	5	10	Low Threat
Heavy Snowstorm	9	7	8	6	30	High Threat
Ice Storm	5	7	5	6	23	High Threat
Blizzard	1	7	3	6	17	Moderate Threat
Extreme Cold	4	7	5	6	22	High Threat
Earthquake	1	7	3	1	12	Low Threat
Extreme Heat	5	7	5	5	22	High Threat
Agricultural	2	3	3	4	12	Low Threat
Drought	2	5	3	4	14	Low Threat
Fog	1	1	7	3	12	Low Threat
Landslide	2	1	3	2	8	Low Threat
Subsidence	1	1	3	1	6	Low Threat
Pandemic Flu	1	9	2	5	15	Moderate Threat

**Table 3-3  
Structures within the FEMA 100-year Floodplain By Municipality**

Municipality	Number of Parcels	2012 Assessed Land Value	2012 Assessed Improvement Value	2012 Assessed Total
Town of Bangor	1	\$18,000	\$191,900	\$209,900
Town of Barre	6	\$160,900	\$541,900	\$702,800
Town of Burns	5	\$82,000	\$1,106,000	\$1,188,000
Town of Campbell	127	\$6,173,700	\$8,123,300	\$14,297,000
Town of Farmington	8	\$52,000	\$360,800	\$412,800
Town of Hamilton	10	\$1,781,700	\$2,743,400	\$4,525,100
Town of Holland	6	\$124,200	\$347,000	\$471,200
Town of Medary	2	\$78,400	\$96,500	\$174,900
Town of Onalaska	51	\$1,143,700	\$5,633,300	\$6,777,000
Town of Shelby	16	\$672,100	\$2,105,400	\$2,777,500
Village of Bangor	6	\$88,400	\$474,500	\$562,900
Village of Holmen	8	\$204,000	\$1,051,000	\$1,255,000
City of La Crosse	1,184	\$27,435,300	\$111,498,900	\$138,934,200
City of Onalaska	6	\$1,102,500	\$2,287,000	\$3,389,500
<b>La Crosse County</b>	<b>1,436</b>	<b>\$39,116,900</b>	<b>\$136,560,900</b>	<b>\$175,677,800</b>

**TABLE 3-4  
LA CROSSE COUNTY (100 YEAR) FLOOD DAMAGE POTENTIAL  
FOR RESIDENCES AND BUSINESSES**

River Body and Location of Structures	Number of Structures at This Location	Structures Impacted During 100 Year Flood Event and First Floor Water Level Estimates <sup>1</sup>	Total Damage to Structures During a 100 Year Flood Level Event <sup>1</sup>
Black River and Flemming Creek	5 residences 7 agriculture 1 exempt	2 residences with 1' of water 3 residences with minor damage 3 agriculture with 1' of water 4 agriculture with minor damage 1 exempt with minor damage	Avg. residence \$88,020 Ave. agriculture \$56,229 2 X \$88,020 X 0.22 = \$38,729 3 X \$56,229 X 0.22 = \$37,111 8 X \$2,000 = \$16,000 <b>TOTAL \$91,840</b>
Sand Lake Creek	24 residences	12 residences with 1' of water 12 residences with minor damage	Avg. residence \$167,213 12 X \$167,213 X 0.22 = \$441,442 12 X \$2,000 = \$24,000 <b>TOTAL \$465,442</b>
Brice Prairie	30 residences 6 commercial 1 agriculture	22 residences with 1' of water 4 commercial with 1' of water 8 residences with minor damage 2 commercial with minor damage 1 agriculture with minor damage	Avg. residence \$66,297 Ave. commercial \$112,750 2 X \$66,297 X 0.22 = \$320,878 4 X \$112,750 X 0.22 = \$99,220 11 X \$2,000 = \$22,000 <b>TOTAL \$442,098</b>
C. Onalaska	6 commercial	2 commercial with 3' of water 2 commercial with 1' of water 2 commercial with minor damage	Ave commercial = \$381,167 2 X \$381,167 X 0.3 = \$228,700 2 X \$381,167 X 0.22 = \$167,714 2 X \$2,000 = \$4,000 <b>TOTAL \$400,414</b>

**TABLE 3-4  
LA CROSSE COUNTY (100 YEAR) FLOOD DAMAGE POTENTIAL  
FOR RESIDENCES AND BUSINESSES**

<b>River Body and Location of Structures</b>	<b>Number of Structures at This Location</b>	<b>Structures Impacted During 100 Year Flood Event and First Floor Water Level Estimates<sup>1</sup></b>	<b>Total Damage to Structures During a 100 Year Flood Level Event<sup>1</sup></b>
T. Campbell	126 residences 1 commercial	25 with 2' of water 75 with 1' of water 26 with minor damage 1 commercial with minor damage	Avg. residence \$63,272 25 X \$63,272 X 0.3 = \$474,540 75 X \$63,272 X 0.22 = \$1,043,988 <u>27 X \$2,000 = \$54,000</u> <b>TOTAL \$1,572,528</b>
City of La Crosse	1,041 residences 111 commercial 8 manufacturing 24 tax exempt	135 residences with 3' of water 177 residences with 2' of water 346 residences with 1' of water 11 com./man. with 3' of water 64 com./man. with 2' of water 52 com./man. with 1' of water 1 tax exempt with 3' of water 3 tax exempt with 2' of water 8 tax exempt with 1' of water 387 with minor damage	Avg. residence \$77,880 Avg. com./man. = \$255,678 135 X \$77,880 X 0.35 = \$3,679,830 177 X \$77,880 X 0.3 = \$4,135,428 346 X \$77,880 X 0.22 = \$5,928,226 11 X \$255,678 X 0.35 = \$984,360 52 X \$255,678 X 0.3 = \$3,988,577 52 X \$255,678 X 0.22 = \$2,924,956 387 X \$2,000 = \$774,000 1 X \$77,880 X 0.35 = \$27,258 3 X \$77,880 X 0.3 = \$70,092 <u>8 X \$77,880 X 0.22 = \$137,069</u> <b>TOTAL \$22,649,796</b>
La Crosse River	13 residences 1 commercial	5 residences with 1' of water 8 residences with minor damage 1 commercial with minor damage	Avg. residence \$128,596 5 X \$128,596 X 0.22 = \$141,456 <u>9 X \$2,000 = \$18,000</u> <b>TOTAL \$159,456</b>
Town of Shelby	15 residences 1 commercial	8 residences with 1' of water 7 residences with minor damage 1 commercial with minor damage	Avg. residence \$126,027 8 X \$126,027 X 0.22 = \$221,808 <u>8 X \$2,000 = \$16,000</u> <b>TOTAL \$237,808</b>
Bostwick Creek	5 residences 2 agriculture	2 residences with 1' of water 3 with minor damage 2 agricultural with minor damage	Avg. residence \$114,780 2 X \$114,780 X 0.22 = \$50,503 <u>5 X \$2,000 = \$10,000</u> <b>TOTAL \$60,503</b>
Dutch Creek	6 residences 1 agriculture	all with minor damage	<u>7 X \$2,000 = \$14,000</u> <b>TOTAL \$14,000</b>
<b>LA CROSSE COUNTY TOTAL COUNTY TOTAL</b>			<b>\$26,093,885</b>

1. Damage estimates are based on determining an average value for a residence or business at each of the eight locations identified in the far left column and multiplying this average value by a percentage factor provided by the Federal Insurance Administration that is based on the level of water in the first floor of the structure. For further information see Design Manual For Retrofitting Flood-Prone Residential Properties published by FEMA.

Table 3-5

## La Crosse County Transportation Assessment

Municipality	2011 Number of Motor Vehicles & Trailers <sup>(1)</sup>	Interstate Miles <sup>(2)</sup>	Fed/State Numbered Highways Arterial Miles <sup>(2)</sup>	Fed/State Numbered Highways Collector Miles <sup>(2)</sup>	County Hwy Miles <sup>(2)</sup>	Town Roads <sup>(2)</sup>	Village/ City Streets <sup>(2)</sup>	Total Hwy Miles	Burlington Northern Sante Fe Rail Miles	Canadian Pacific Rail Miles	Total Rail Miles
<b>Towns</b>											
Bangor	1,035	4.84		6.37	23.77	23.93		58.91		3.6	3.6
Barre	450				14.59	16.16		30.75			
Burns	610	0.39	6.29	13.09	20.14	35.09		75		0.8	0.8
Campbell	1,229	2.73			5.02	19.36		27.11		0.4	0.4
Farmington	2,067			10.08	66.62	39.68		116.38			
Greenfield	795		9.32		22.32	30.39		62.03			
Hamilton	1,199	5.79	5.07	4.99	21.9	48.17		85.92		4.1	4.1
Holland	1,446		9.41		16.69	48.23		74.33	2.2		2.2
Medary	584		1.90		4.06	17.29		23.25	1.0	0.9	1.9
Onalaska	1,760		7.62		34.34	46.77		88.73	6.5		6.5
Shelby	1,946		9.85		10.76	45.46		66.07	1.7		1.7
Washington	429		13.25		23.43	26.37		63.05			
<b>Cities &amp; Villages</b>											
V. Bangor	1,765	1.02		1.24	0.92		8.25	11.43		1.0	1.0
V. Holmen	11,281		0.75		8.69		38.07	47.51			
V. Rockland	841				0.75		4.4	5.15		0.5	0.5
V. West Salem	6,889	0.65	1.53		4.12		22.55	28.85		1.9	1.9
C. La Crosse	49,973	1.64	25.55		4.55		191.39	223.13	13.7	5.9	19.6
C. Onalaska	20,349	3.22	11.58		2.64		85.93	103.37	2.1		2.1
<b>COUNTY TOTAL</b>	<b>104,648</b>	<b>20.28</b>	<b>102.12</b>	<b>35.77</b>	<b>285.31</b>	<b>396.90</b>	<b>350.59</b>	<b>1190.97</b>	<b>27.2</b>	<b>19.1</b>	<b>46.3</b>

(1) Does not include vehicles registered in "unknown tax districts"

(2) There are five jurisdictional classifications: Interstate Highways (Example I94), State System Highways (Example USH 14-STH 171), County Highways (Example CTH B), Town Roads (Example Mound Ridge Rd), Village/City Streets (Example Main Street). Within incorporated areas (villages/cities), highways marked as state system or county roads will be classed by mileage by that system - even though they may also carry a local street name. The State system highways are either identified by functional classification-Principal/Minor Arterial (example USHs 14/61, STH 35, STH 27) or as Major/Minor collectors (example STH 179). Some local roads that are not identified as state systems roads may be a "federal aid" road.

**Table 3-6**  
**La Crosse County Vulnerability Assessment**  
**Number of Establishments/Employment/Payroll**

NAICS code description	No. of Employees <sup>(1)</sup>	Annual payroll (\$1,000) <sup>(2)</sup>	Total Establishments
<b>La Crosse County Totals</b>	<b>56,501</b>	<b>1,874,328</b>	<b>2,969</b>
11--- Forestry, fishing, hunting, and Agriculture Support	A	D	4
21--- Mining, quarrying, and oil and gas extraction	B	D	1
22--- Utilities	380	28,565	6
23--- Construction	2,343	126,208	309
31--- Manufacturing	6,816	247,311	151
42--- Wholesale trade	2,840	118,566	135
44--- Retail trade	8,237	162,719	429
48--- Transportation and warehousing	1,925	71,753	113
51--- Information	1,175	56,075	49
52--- Finance and insurance	2,772	123,037	236
53--- Real estate and rental and leasing	558	15,578	116
54--- Professional, scientific, and technical services	2,011	88,934	236
55--- Management of companies and enterprises	2,140	104,335	34
56--- Administrative and Support and Waste Mang and Remediation Svcs	2,825	79,633	137
61--- Educational services	1,306	31,117	34
62--- Health care and social assistance	11,124	473,534	278
71--- Arts, entertainment, and recreation	993	14,269	58
72--- Accommodation and food services	6,098	64,979	310
81--- Other services (except public administration)	2,849	59,557	325
99--- Industries not classified	9	164	8

Source: U.S. Department of Commerce-Economic and Statistics Administration-U.S. Census Bureau-County Business Patterns 2009

(1) Total includes No. of employees in all industry classifications, (2) Total Includes annual payroll in all industry classifications

Note: County Business Patterns (CBP) covers most NAICS industries excluding crop and animal production; rail transportation; National Postal Service; pension, health, welfare, and vacation funds; trusts, estates, and agency accounts; private households; and public administration. CBP also excludes most establishments reporting government employees.

A: 0-19 employees

B: 20-99 employees

C: 100-249 employees

E: 250-499 employees

F: 500-999 employees

G: 1,000-2,499 employees

H: 2,500 - 4,999 employees

I: 5,000 - 9,999 employees

J: 10,000 - 24,999 employees

K: 25,000 - 49,999 employees

L: 50,000 - 99,999 employees

M: 100,000 or more employees

S: Withheld because estimate did not meet publication standards

D: Withheld to avoid disclosing data for individual companies data are included in higher level totals

**Table 3-7**  
**La Crosse County Critical Facilities: Government and Military Facilities**

Facility	Community	Address	Telephone
Courthouse and Law Enforcement Center	La Crosse	333 Vine Street	(608) 785-9590
La Crosse County Administrative Center	La Crosse	400 4th Street N	(608) 785-9563
La Crosse County Health & Human Service Bldg.	La Crosse	300 4th Street N	(608) 785-5875
La Crosse Municipal Airport	La Crosse	2850 Airport Road	(608) 789-7464
La Crosse Center	La Crosse	300 Harborview Plaza	(608) 789-7400
Downtown La Crosse Transit Center	La Crosse	3rd and Jay Streets	
La Crosse City Hall	La Crosse	400 La Crosse Street	(608) 789-7500
Onalaska City Hall	Onalaska	415 Main Street	(608) 781-9530
OmniCenter	Onalaska	255 Riders Club Road	(608) 781-9566
Bangor Village Hall	Bangor	100 N. 17th Ave.	(608) 486-4084
Holmen Village Hall	Holmen	421 S Main Street	(608) 526-4336
Rockland Village Hall	Rockland	105 W Center Street	(608) 486-4037
West Salem Village Hall	West Salem	175 S Leonard Street	(608) 786-1858
Bangor Town Hall	Bangor	N4400 State Road 162	
Barre Town Hall	La Crosse	W3541 County Road M	
Burns Town Hall	Bangor	W1313 Jewett Road	(608) 486-4272
Campbell Town Hall	La Crosse	2219 Bainbridge Street	(608) 783-0050
Farmington Town Hall	Mindoro	N8309 State Road 108	(608) 857-3913
Greenfield Town Hall	La Crosse	N1800 Town Hall Rd	(608) 787-0400
Hamilton Town Hall	West Salem	N5105 N. Leonard Street	(608) 786-0989
Holland Town Hall	Holmen	W7937 County Road MH	(608) 526-3354
Medary Town Hall	La Crosse	N3393 Smith Valley Road	(608) 781-2275
Onalaska Town Hall	Onalaska	W7052 Second Street	(608) 783-4958
Shelby Town Hall	La Crosse	2800 Ward Avenue	(608) 788-1032
Onalaska National Guard Amory	Onalaska	910 Oak Forest Drive	(608) 789-4604
DNR La Crosse Area Headquarters	La Crosse	3550 Mormon Coulee Road	(608) 785-9000
DOT La Crosse Area Headquarters	La Crosse	3550 Mormon Coulee Road	(608) 785-9022
US Fish & Wildlife Service Resource Center	Onalaska	555 Lester Ave	(608) 783-4104

See Map 3-1 for the location of these government and military facilities.

**TABLE 3-8**

**La Crosse County Critical Facilities: Hospitals, Clinics and Residential Care Facilities**

Facility	City	Address Line 1	Telephone
St. Claire Health Mission	La Crosse	916 Ferry Street	(608) 791-9546
Mayo Clinic Health System	La Crosse	800 West Avenue So	(608) 785-0940
Mayo Clinic Holmen Clinic	Holmen	1303 Main Street South	(608) 526-3351
Mayo Clinic Onalaska Clinic	Onalaska	191 Theatre Road	(608) 392-5000
Mayo Clinic Family Health Clinic	La Crosse	815 10th Street South	(608) 392-7390
Gundersen Health System	La Crosse	1910 South Avenue	(608) 782-7300
Gundersen Health System - Onalaska Clinic	Onalaska	3111 Gundersen Drive	(608) 775-8100
Bethany Riverside	La Crosse	2575 S 7th Street	(608) 775-8200
St. Josephs Rehabilitation Center	La Crosse	2902 East Ave S	(608) 788-9870
Mulder Health Care Facility	West Salem	713 N Leonard Street	(608) 786-1600
Onalaska Care Center	Onalaska	1600 Main Street	(608) 783-4681
Bethany St. Joseph Care Center	La Crosse	2501 Shelby Road	(608) 788-5700
Hillview Health Care Center	La Crosse	3501 Park Lane Drive	(608) 789-4800
Lakeview Health Center	West Salem	902 E Garland Street	(608) 786-1400

See Map 3-2 for the location of these hospitals, clinics, and residential care facilities

**Table 3-9**

**La Crosse County Critical Facilities: Police and Fire Facilities**

Facility Name	City	Address	Telephone
<b>Fire Facilities</b>			
City of La Crosse Fire Station # 1	La Crosse	726 5th Ave S	(608) 789-7260
City of La Crosse Fire Station # 2	La Crosse	626 Monitor Street	(608) 789-7260
City of La Crosse Fire Station # 3	La Crosse	1710 Losey Blvd S	(608) 789-7260
City of La Crosse Fire Station # 4	La Crosse	904 Gillette Street	(608) 789-7260
Bangor-Burns Volunteer Fire Dept	Bangor	1310 Commercial St	(608) 486-2694
Campbell Township Fire Dept	T. Campbell	2219 N Bainbridge St	(608) 783-0050
Farmington Volunteer Fire Dept	Mindoro	W3210 County RD D	(608) 857-3913
Holmen Area Fire Dept	Holmen	710 S Main Street	(608) 526-9363
Onalaska Fire Dept	Onalaska	415 Main Street	(608) 781-9546
Shelby Fire Dept	T. Shelby	2801 Ward Avenue	(608) 788-1032
West Salem Volunteer Fire Dept	West Salem	100 S Mill Street	(608) 786-0111
La Crosse Municipal Airport Fire Department	La Crosse	2841 Fanta Reed Rd	(608) 789-7450
<b>Police Facilities</b>			
La Crosse County Sheriff's Office	La Crosse	333 Vine St	(608) 785-9629
Bangor Police Department	Bangor	100 17th Ave N	(608) 486-4276
Campbell Police Department	La Crosse	2219 Bainbridge St	(608) 783-1050
Holmen Police Department	Holmen	421 S Main	(608) 526-4212
La Crosse Police Department	La Crosse	400 La Crosse Street	(608) 789-7201
Onalaska Police Department	Onalaska	415 Main Street	(608) 781-9550
Shelby Police Department	La Crosse	2801 Ward Avenue	(608) 788-1032
West Salem Police Department	West Salem	175 S Leonard St	(608) 786-0407
UW-La Crosse Police Department	La Crosse	525 East Avenue North	(608) 789-9000

See map 3-3 for location of these police and fire departments.



**Table 3-10**  
**La Crosse County Critical Facilities: School Facilities**

Facility	Community	Address	Telephone
Bangor Elementary School	Bangor	701 14th Ave S	(608) 486-5206
Bangor Middle/High School	Bangor	700 10 <sup>th</sup> Ave S	(608) 486-5201
St Paul's Evangelical Lutheran School	Bangor	1301 Pearl Street	(608) 486-2641
Evergreen Elementary School	Holmen	510 Long Coulee Rd	(608) 526-9080
Holmen Middle School	Holmen	502 Main St	(608) 526-3391
Holmen High School	Holmen	1001 McHugh Rd	(608) 526-3372
Oak Grove Family Learning Center	Holmen	W7908 CTH Z	(608) 783-9393
Prairie View Elementary	Holmen	1201 Newport Lane	(608) 526-1600
Sand Lake Elementary School	Holmen	3600 Sand Lake Rd	(608) 781-0974
Viking Elementary School	Holmen	500 E Wall St	(608) 526-3316
Aquinas High School	La Crosse	315 South 11th Street	(608) 784-0287
Aquinas Middle School	La Crosse	315 South 11th Street	(608) 784-0156
Blessed Sacrament Elementary School	La Crosse	2404 King St.	(608) 782-5564
Cathedral School	La Crosse	1319 Ferry Street	(608) 782-5998
Central High School	La Crosse	1801 Losey Blvd S	(608) 789-7900
Chileda Institute	La Crosse	1825 Victory Street	(608) 772-6470
Coulee Montessori Charter School	La Crosse	1307 Hayes St	(608) 789-7760
Emerson Elementary School	La Crosse	2101 Campbell Rd	(608) 789-7990
First Evangelical Lutheran School	La Crosse	520 West Avenue S.	(608) 784-1050
Faith Baptist School	La Crosse	3615 S. 28 <sup>th</sup> St.	(608) 788-1165
Hamilton Early Learning Center	La Crosse	1111 7 <sup>th</sup> St S	(608) 789-7695
Hintgen Elementary School	La Crosse	3505 28 <sup>th</sup> St S	(608) 789-7767
Immanuel Lutheran School	La Crosse	806 St. Paul St.	(608) 784-5712
La Crosse Offsite Preschool	La Crosse	Hogan Admin Ctr, 807 East Ave S	(608) 789-7600
La Crossroads Charter	La Crosse	1500 Ranger Dr.	(608) 789-7695
Leadership	La Crosse	Grandview Center 1707 Main St	(608) 791-6240
Lincoln Middle School	La Crosse	510 9th St S	(608) 789-7780
Logan High School	La Crosse	1500 Ranger Dr.	(608) 789-7700
Logan Middle School	La Crosse	1450 Avon St	(608) 789-7740
Longfellow Middle School	La Crosse	1900 Denton St	(608) 789-7672
North Woods International School	La Crosse	2541 Sablewood Rd	(608) 789-7000
Northside Elementary	La Crosse	1307 Hayes St.	(608) 789-7760
Mount Calvary-Grace Lutheran School	La Crosse	1614 Park Ave.	(608) 784-8223
Providence Academy	La Crosse	716 Windsor	(608) 784-6167
School of Technology and Arts	La Crosse	1111 S. 7 <sup>th</sup> St.	(608) 789-7695
School of Technology and Arts II	La Crosse	510 9th St S	(608) 789-7780
Southern Bluffs Elementary School	La Crosse	4010 Sunnyside Dr.	(608) 789-7020
Spence Elementary School	La Crosse	2150 Bennett St.	(608) 789-7773
State Road Elementary School	La Crosse	N1821 Hagen Rd.	(608) 789-7690
Summit Environmental Elementary School	La Crosse	1800 Lakeshore Dr.	(608) 789-7980
Mindoro Elementary School	Mindoro	N8254 State Road 108	(608) 857-3410
Eagle Bluff Elementary School/Kindergarten Center	Onalaska	200 Eagle Bluff Court	(608) 783-2453
Luther High School	Onalaska	1501 Wilson St	(608) 783-5435
Northern Hills Elementary School	Onalaska	511 Spruce St.	(608) 783-4542
Onalaska Kindergarten Center	Onalaska	200 Eagle Bluff Court	(608) 783-2453
Onalaska High School	Onalaska	700 Hilltopper Place	(608) 783-4561
Onalaska Middle School	Onalaska	711 Quincy St.	(608) 783-5366
Pertzsch Elementary School	Onalaska	524 Main St.	(608) 783-5644
St Patrick's Elementary School	Onalaska	127 11th Ave. N.	(608) 783-5483
St Paul's Lutheran School	Onalaska	1201 Main St.	(608) 783-4822
Sandy Oak Amish School	Rockland	N4760 CTH J	NA
Christ St John's Lutheran School	West Salem	500 Park St	(608) 786-1250
Coulee Region Christian School	West Salem	230 W. Garland	(608) 786-3004
West Salem Elementary	West Salem	475 N. Mark St.	(608) 786-1662
West Salem High School	West Salem	405 E. Hamlin St.	(608) 786-1220
West Salem Middle School	West Salem	450 N. Mark St.	(608) 786-2090

Facility	Community	Address	Telephone
<b>UW-La Crosse</b>	<b>La Crosse</b>		
Angell Hall	UWL	422 N 14th Street	(608) 785-8075
Coate Hall	UWL	1405 Farwell Street	(608) 785-8075
Drake Hall	UWL	1510 Badger Street	(608) 785-8075
Eagle Hall	UWL	1500 La Crosse Street	(608) 785-8075
Hutchison Hall	UWL	1425 Pine Street	(608) 785-8075
Laux Hall	UWL	622 East Ave N.	(608) 785-8075
Reuter Hall	UWL	618 N. 19th Street	(608) 785-8075
Sanford Hall	UWL	1815 Farwell Street	(608) 785-8075
Wentz Hall	UWL	1515 Pine Street	(608) 785-8075
White Hall	UWL	1806 Farwell Street	(608) 785-8075
Cartwright Center	UWL	1741 State Street	(608) 785-8888
Archaeology Center	UWL	1631 Pine Street	(608) 785-8463
Centennial Hall	UWL	Center UW-LAX Campus	(608) 785-8000
Recreational Eagle Center	UWL	1601 Badger Street	(608) 785-8888
Whitney Center	UWL	515 N 15th Street	(608) 785-8888
Center For the Arts	UWL	336 N 16th Street	(608) 785-8000
Cowley Hall of Science	UWL	1707 Pine Street	(608) 785-8000
Graff Main Hall	UWL	1725 State Street	(608) 785-8000
Health Science Center	UWL	1300 Badger Street	(608) 785-5100
Mitchell Hall	UWL	1820 Pine Street	(608) 785-8000
Morris Hall	UWL	1615 State Street	(608) 785-8000
Murphy Library	UWL	1631 Pine Street	(608) 785-8505
W. Carl Wimberly Hall	UWL	1701 Badger Street	(608) 785-8000
Wing Technology Center	UWL	1705 State Street	(608) 785-8000
Wittich Hall	UWL	1710 Pine Street	(608) 785-8000
Cleary Alumni & Friends Center	UWL	615 East Ave N	(608) 785-8489
Veteran's Memorial Field Sports Complex	UWL	410 East Ave N	(608) 785-8000
<b>Viterbo University</b>	<b>La Crosse</b>		
Murphy Center	Viterbo	815 Viterbo Court	(608) 796-3000
Amie L. Mathy Center	Viterbo	811 8th Street South	(608) 796-3000
D.B. & Marge Reinhart Center	Viterbo	900 Viterbo Drive	(608) 796-3000
Fine Arts Center	Viterbo	929 Jackson Street	(608) 796-3737
Dahl School of Business	Viterbo	10th Street	(608) 796-3000
San Damiano Chapel	Viterbo	940 Franciscan Way	(608) 796-3000
Student Development Center	Viterbo	936 Franciscan Way	(608) 796-3000
Dining Hall & Student Union	Viterbo	Franciscan Way	(608) 796-3000
Canticle House	Viterbo		(608) 796-3000
Marian Hall	Viterbo	704 Franciscan Way	(608) 796-3000
Bonaventure Hall	Viterbo	700 Franciscan Way	(608) 796-3000
Treacy House	Viterbo	825 Market Street	(608) 796-3000
McDonald Terrace	Viterbo	715 8th Street South	(608) 796-3000
Rose Terrace	Viterbo	801 V-Hawk Court	(608) 796-3000
Varsity Athletics Center	Viterbo	Viterbo Campus	(608) 796-3000
School of Nursing	Viterbo	Viterbo Campus, 10th Street	(608) 796-3000
FSPA Maria Angelorum Chapel	Viterbo	Franciscan Way	(608) 796-3000
<b>Western Technical College</b>	<b>La Crosse</b>		
Administrative and Wellness Center	Western	111 Seventh Street North	(608) 785-9200
Roy E. Kumm Center	Western	400 Sixth Street North	(608) 785-9200
Academic Resource Center	Western	400 Seventh Street North	(608) 785-9200
John B. Coleman Center	Western	304 Sixth Street North	(608) 785-9200
Applied Technology Center	Western	325 Eighth Street North	(608) 785-9200
Business Education Center	Western	405 Eighth Street North	(608) 785-9200
Western Residence Hall	Western	820 La Crosse Street	(608) 785-9200
Center for Childhood Education	Western	419 Ninth Street North	(608) 785-9200
Western Wisconsin Job Center	Western	402 Eighth Street North	(608) 785-9200
Diesel Shop & Auto Tech Training Fac.	Western	2719 & 2721 Larson Street	(608) 785-9200
Lunda Center	Western	319 7th Street North	(608) 785-9200

See Map 3-4 for locations of these schools

**Table 3-11**  
**La Crosse County Critical Facilities: Wells**

Community	Utility ID	Well ID No	ID #	Well Depth (ft)	Design Yield (GPD)	Act'l Cap (GPM)	Currently in Service	Ground Storage	Elev Storage <sup>(1)</sup>
Bangor	350	Bangor 1	1	143	432,000	380	Yes		18,400
Bangor	350	Bangor 2	2	172	532,000	370	Yes		18,400
Holmen	2590	Holmen 1	4	150	160,836	1,270	Yes	1,300,000	
Holmen	2590	Holmen 2	5	130	77,385	1,100	Yes	1,300,000	
Holmen	2590	Holmen 3	6	178	291,784	1,200	Yes	1,300,000	
Holmen	2590	Holmen 4	7	175	291,919	1,000	Yes	1,300,000	
La Crosse	2920	La Crosse 2	12H	140	2,304,000	1,680	No	6,000,000	
La Crosse	2920	La Crosse 3	13H	151	2,664,000	2,100	Yes	6,000,000	
La Crosse	2920	La Crosse 4	14H	144	2,664,000	1,918	Yes	6,000,000	
La Crosse	2920	La Crosse 5	15H	147	3,024,000	2,000	Yes	6,000,000	
La Crosse	2920	La Crosse 6	16H	160	2,880,000	2,180	Yes	6,000,000	
La Crosse	2920	La Crosse 7	17H	160	2,880,000	1,960	Yes	6,000,000	
La Crosse	2920	La Crosse 8	19H	162	4,464,000	2,340	Yes	6,000,000	
La Crosse	2920	La Crosse 9	20H	160	4,464,000	2,000	Yes	6,000,000	
La Crosse	2920	La Crosse 10	21H	160	4,464,000	2,000	Yes	6,000,000	
La Crosse	2920	La Crosse 11	22H	149	3,384,000	2,320	Yes	6,000,000	
La Crosse	2920	La Crosse 12	23H	98	2,880,000	2,020	Yes	6,000,000	
La Crosse	2920	La Crosse 13	24H	108	2,880,000	1,920	Yes	6,000,000	
La Crosse	2920	La Crosse 14	25H	99	2,880,000	1,756	Yes	6,000,000	
La Crosse	2920	La Crosse 15	26H	94	2,880,000	2,050	Yes	6,000,000	
La Crosse	2920		# 1 Booster Station			100		6,000,000	
La Crosse	2920		# 2 Booster Station			300		6,000,000	
La Crosse	2920		# 3 Booster Station			1,040		6,000,000	
Mindoro	3730	Mindoro 1	BG168 PWSID 632	255	209	145	Yes	50,000	
Onalaska	4410	Onalaska 1	10	160	3,600,000	2,500	Yes	3,275,000	
Onalaska	4410	Onalaska 2	7	160	3,441,600	2,390	Yes	3,275,000	
Onalaska	4410	Onalaska 3	8	170	2,980,800	2,070	Yes	3,275,000	
Onalaska	4410	Onalaska 4	9	160	3,960,000	2,750	Yes	3,275,000	
Onalaska	4410		1 (Pump)			600		3,275,000	
Onalaska	4410		2 (Pump)			1,000		3,275,000	
Onalaska	4410		3 (Pump)			1,500		3,275,000	
Rockland	5130	Rockland 1	1	220	26,400	175	Yes		50,000
Rockland	5130	Rockland 2	2	220	240,000	250	Yes		50,000
T. Shelby	5390	Shelby 1	1	457	20,000	250	Yes	261,000	
T. Shelby	5390	Shelby 2	1	440	22,000	150	Yes	261,000	
T. Shelby	5390	Shelby 3	1	375	25,000	165	Yes	261,000	
T. Shelby	5390	Shelby 4	1	800	18,000	200	Yes	261,000	
T. Shelby	5390		Arbor Hills Booster # 1			250		261,000	
T. Shelby	5390		Arbor Hills Booster # 1			350		261,000	
St. Joseph	5240	St. Joseph 1	3	320	30,000	25	Yes	50,000	100,000
St. Joseph	5240	St. Joseph 2	4	803	360,000	250	Yes	50,000	100,000
West Salem	6430	West Salem	2	525	712,800	450	Yes	1,500,000	
West Salem	6430	West Salem	3	450	763,200	495	Yes	1,500,000	
West Salem	6430	West Salem	4	390	864,000	600	Yes	1,500,000	

Source: Wisconsin Public Service Commission - 2010 PSCW Annual Reports

(1) Standpipe or Elevated Tank Storage

See Map 3-1 for locations of these wells

**Table 3-12  
La Crosse County Critical Facilities: Wastewater Treatment Plants**

<b>Wastewater Treatment Plant</b>	<b>Community</b>	<b>2010 GPA</b>
Bangor Wastewater Treatment Facility	Bangor	4
Bostwick Valley Mobile Home Park Wastewater Treatment Facility	Onalaska	3.69
Brookview Mobile Home Court, LLC	La Crosse	4
Golden Valley Mobile Home Park – La Crosse	La Crosse	4
Holmen Wastewater Treatment Facility	Holmen	3.84
La Crosse, City of	La Crosse	3.59
Maple Grove Estates Sanitary District	West Salem	4
Mindoro Sanitary District 1 Wastewater Treatment Facility	Mindoro	3.46
Rockland Water Sewer Utilities Wastewater Treatment Facility	Rockland	4
St. Joseph Sanitary District	La Crosse	3.76
West Salem Wastewater Treatment Facility	West Salem	4

Source: Department of Natural Resources

**Table 3-13  
La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
1st Class Auto Body	103 N Leonard St	West Salem	WI	54669	2011
A + Roll-Off LLC	W2863 CTH T	Mindoro	WI	54644	2011
A B Dick Products Of La Crosse & Eau Claire	3440 Losey Blvd S	La Crosse	WI	54601	2011
A&A Chemical Laboratory Inc.	2400 Diagonal Rd	La Crosse	WI	54601	2011
A-1 Advanced Pumping Service Inc.	N4314 CTH M	West Salem	WI	54669	2011
ABC Autobody Inc.	W5305 Hwy F	La Crosse	WI	54601	2011
Ac Collision	562 Commerce St	West Salem	WI	54669	2011
Ace Hardware	4242 Mormon Coulee Rd	La Crosse	WI	54601	2011
Ace Hardware Distribution	500 Fanta Reed Pl	La Crosse	WI	54603	2011
Affordable Repair Service	1308 8th St S	La Crosse	WI	54601	2011
Air Freight Express Inc.	916 Commercial Ct	Onalaska	WI	54650	2011
Alexander Gary Shop	841 2nd Ave SW Site B	Onalaska	WI	54650	2011
All State Painters & Decorators	5504 Penny Ln	Onalaska	WI	54650	2011
Allied Van Lines - Peoples Moving & Storage	1300 Oak Forest Dr.	Onalaska	WI	54650	2011
Als Auto Body Of Lacrosse Inc.	823 Rose St	La Crosse	WI	54603	2011
American Asphalt Division Plant #41	Portable	Onalaska	WI	54650	2011
American Asphalt Plant 83 Div Of Mathy Const.	920 10th Ave N Plant 83	Onalaska	WI	54650	2011
American Materials	Rt. 4	La Crosse	WI	54601	2011
Amoco Station #15557	1420 Losey Blvd S	La Crosse	WI	54601	2011
Aquinas High School	315 S 11th St	La Crosse	WI	54601	2011
Aspen Dental	3132 Market Place	Onalaska	WI	54650	2011
ATK Onalaska Operations	N5549 CTH Z	Onalaska	WI	54650	2011
Auto Color Supply	55 Copeland Ave	La Crosse	WI	54603	2011
Automotive & Industrial Services	710 3rd St	La Crosse	WI	54601	2011
B & K Auto Body	425 North Star Rd	Holmen	WI	54636	2011
Badger Corrugating Co	944 Green Bay St	La Crosse	WI	54601	2011
Bagniefski Heating & Air Conditioning	1209 S 8th St	La Crosse	WI	54601	2011
T. Barre	Town Shop	West Salem	WI	54669	2011
T. Barre	Swamp Rd	T. Barre	WI	54601	2011
Bergstroms Buick & Toyota	40 Copeland Ave	La Crosse	WI	54603	2011
Bethany Lutheran Homes Riverside	2575 S 7th St	La Crosse	WI	54601	2011
Bethany St Joseph Care Center	2501 Shelby Rd	La Crosse	WI	54601	2011
Betsinger Thomas Property	W8328 CTH Z	Onalaska	WI	54650	2011
Biolife Plasmas Services LP	1278 Rudy St	Onalaska	WI	54650	2011
Blood Center Of Wisconsin	1800 Jackson St- Suite C	La Crosse	WI	54601	2011
Blue Ribbon Cleaners Inc.	1911 George St	La Crosse	WI	54601	2011
BNSF Railroad	RR Tracks 40 Yards E Of George S	La Crosse	WI		2011
Bob Johnson Lubricants - Onalaska	915 Commercial Ct	Onalaska	WI	54650	2011
Bob Johnson Oil Co	816 Bainbridge St	La Crosse	WI	54601	2011
Bobs Auto Techno	1003 West Ave S Site B	La Crosse	WI	54601	2011
Body Shop Supply Co	1240 Clinton St	La Crosse	WI	54603	2011
Body Shop Supply Inc.	209 Mason St	Onalaska	WI	54650	2011
Bonsack Earl Trucking Inc.	402 Sky Harbor Dr.	La Crosse	WI	54603	2011
Brenengen Chev Geo Inc.	990 W County Hwy 16	West Salem	WI	54669	2011
Brown Wilbert Inc.	2920 Airport Rd	La Crosse	WI	54603	2011
Byerson Auto & Marine Refinishing	67 Kraft St	La Crosse	WI	54603	2011
Canal Barge Co	Midwest Industrial Fuels Dock	La Crosse	WI		2011
Cargill Ag Horizons	416 S Front St	La Crosse	WI	54601	2011
Carquest Auto Parts La Crosse	901 Monitor St	La Crosse	WI	54603	2011
Central High School	1801 Losey Blvd. S	La Crosse	WI	54601	2011
Central States Warehouse Inc.	1629 Caledonia St	La Crosse	WI	54603	2011
CESA 4	923 E Garland St	West Salem	WI	54669	2011
Chart Energy & Chemical Inc.	2191 Ward Ave	La Crosse	WI	54601	2011
Chek It Products Inc.	W7385 CTH Zn	Onalaska	WI	54650	2011
Chucks Auto Body	115 W Wall St	Holmen	WI	54636	2011
Citgo Quik Stop	426 Second St	Onalaska	WI	54650	2011
City Brewing Co Inc.	1028 S 3rd St	La Crosse	WI	54601	2011
City Brewing Co Inc.	27 Market St	La Crosse	WI	54601	2011
City Brewing Co Inc.	925 3rd St S	La Crosse	WI	54601	2011
Clason Pontiac GMC Inc.	2915 East Ave S	La Crosse	WI	54601	2011

**Table 3-13  
La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
Clements Automotive LLC	N5252 STH 162 N	Bangor	WI	54614	2011
Complete Salvage Service - Dan Marini	W3697 CTH Q	Mindoro	WI	54664	2011
Computer Doctor	607 N Holmen Dr.	Holmen	WI	54636	2011
Coulee Country Truck & Trailer	W2197 CTH B	West Salem	WI	54566	2011
Coulee Region Diesel Repair LLC	W1710 STH 16 Site A	Bangor	WI	54614	2011
County Materials	120 Union St	Holmen	WI	54636	2011
Crescent Printing Co Inc.	1001 Commercial Ct	Onalaska	WI	54650	2011
Crown Cork & Seal	1501 St James St	La Crosse	WI	54603	2011
D & M Recycling	841 Second Ave SW	Onalaska	WI	54650	2011
D-Lux Screen Printing Inc.	301 N Star Rd	Holmen	WI	54636	2011
Dahl Ford La Crosse Inc.	711 S 3rd St	La Crosse	WI	54601	2011
Dahl Superior Auto Body	One Copeland Ave	La Crosse	WI	54601	2011
Dairyland Power Coop	3200 East Ave S	La Crosse	WI	54601	2011
Dairyland Power Coop Service Center	3251 East Ave S	La Crosse	WI	54601	2011
Dales Drywall & Painting	N4986 Hurricane Ct	Onalaska	WI	54650	2011
De Bauche Truck & Diesel	535 Fanta Reed Place	La Crosse	WI	54603	2011
Dees Gasoline Alley Inc.	419 N 4th St	La Crosse	WI	54601	2011
Dels Auto Repair	221 Main St	Onalaska	WI	54650	2011
Design Cabinetry Inc.	3905 Circle Dr.	Holmen	WI	54636	2011
Dura Tech Inc.	3216 Commerce St	La Crosse	WI	54603	2011
Dynamic Concrete	212 Hood St	La Crosse	WI	54601	2011
Dynamic Recycling	2135 Enterprise Ave	La Crosse	WI	54603	2011
Earthgrains Baking Companies Inc.	334 5th Ave S	La Crosse	WI	54601	2011
Eds Service Center Inc.	3607 Mormon Coulee Rd	La Crosse	WI	54601	2011
Emmons-Napp	117 N 6th	La Crosse	WI	54601	2011
Empire Screen Printing Inc.	N5206 Marco Rd	Onalaska	WI	54650	2011
Evans Implement Inc.	341 E Jefferson	West Salem	WI	54669	2011
Everbrite LLC	3145 Airport Rd	La Crosse	WI	54603	2011
F J Robers Co Inc. (Omaha Rail & Tie)	515 Bainbridge St	La Crosse	WI	54601	2011
FABCO Equipment	2400 Cunningham St	La Crosse	WI	54603	2011
Fairway Painting & Sandblast Inc.	115 Union St	Holmen	WI	54636	2011
Farm And Fleet Of La Crosse	9438 USH 16	Onalaska	WI	54650	2011
Fiberpro Inc. DbA Advanced Fiber Products	2970 Luoyang Ave	La Crosse	WI	54603	2011
Finches Lincoln Mercury Inc.	3400 Losey Blvd S	La Crosse	WI	54601	2011
Firestone	500 S 3rd St	La Crosse	WI	54601	2011
First Student Inc. #20761	2321 Commerce St	La Crosse	WI	54603	2011
Fleet Paint & Body Repair LLC	N5565 Commerce Rd	Onalaska	WI	54650	2011
Fleet Transportation LLC	920 10th Ave N	Onalaska	WI	54650	2011
Franciscan Skemp Healthcare	1303 Main Street	Holmen	WI	54636	2011
Franciscan Skemp Healthcare - Home Health Svc	212 S 11th St	La Crosse	WI	54602	2011
Franciscan Skemp Healthcare Mayo Healthcare	700 West Ave S	La Crosse	WI	54601	2011
Franciscan Skemp Healthcare/Mayo Healthcare	191 Theater Road	Onalaska	WI	54650	2011
French Island Frog Pond	1729 La Crescent St	La Crosse	WI	54601	2011
Gander Mountain #115	1210 Crossing Meadows Dr.	Onalaska	WI	54650	2011
Gateway Feathers	Hwy 53 N	Holmen	WI	54636	2011
Goodyear	9352 USH 16	Onalaska	WI	54650	2011
Goose Island Park Wbs	W6488 CTH GI	Stoddard	WI	54658	2011
Great Lakes Cheese Of Wi	2200 Enterprise Ave	La Crosse	WI	54603	2011
Green Earth Compost Products	N6595 Hwy Xx	Holmen	WI	54636	2011
Gross Trucking	131 Milwaukee St	La Crosse	WI	54603	2011
Gundersen Lutheran Clinic Ltd (Duplicate Id)	1836 South Ave	La Crosse	WI	54601	2011
Gundersen Lutheran Medical Center	1900 South Ave	La Crosse	WI	54601	2011
Gundersen Lutheran Medical Center East	724 Denton St	La Crosse	WI	54601	2011
Gundersen Lutheran Onalaska	3111 Gundersen Drive	Onalaska	WI	54650	2011
Gundersen Lutheran Onalaska Clinic	3111 Gundersen Dr.	Onalaska	WI	54650	2011
Gundersen Lutheran Renal Dialysis - Onalaska	3075 S Kinney Coulee Road	Onalaska	WI	54650	2011
Harry Viner Inc.	1600 Miller St	La Crosse	WI	54601	2011
Harters Quarry	N6200 CTH Xx	Onalaska	WI	54650	2011
Harters Quick Clean-Up Service Inc.	2850 Larson St (Site B)	La Crosse	WI	54603	2011
Harters Trash & Recycling Inc.	2850 Larson St	La Crosse	WI	54603	2011

**Table 3-13  
La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
Harters Trash & Recycling Inc.	841 Second Ave SW	Onalaska	WI	54603	2011
Harters Trash & Recycling Inc.	Larson St & Hauser St	La Crosse	WI	54603	2011
Heirloom Restorations	1604 Caledonia St	La Crosse	WI	54603	2011
Hilltopper Refuse & Recycling Service Inc.	W6836 Industrial Blvd	Onalaska	WI	54650	2011
Hoff Property	2437 Jackson St	La Crosse	WI	54601	2011
Hogan Administrative Center	807 East Ave S	La Crosse	WI	54601	2011
Holiday Station Stores	146 Rose St	La Crosse	WI	54601	2011
Holiday Station Stores #121	3334 Mormon Coulee Rd	La Crosse	WI	54601	2011
Hollister	3800 STH 16 State 131	La Crosse	WI	54601	2011
Holmen Custom & Collision	307 Ryan St	Holmen	WI	54636	2011
Home Depot #Hd4905	2927 Market Place	Onalaska	WI	54650	2011
Houvies Inc. Boulevard Cleaners	1537 Losey Blvd	La Crosse	WI	54601	2011
Hutson Ray Chevrolet Nissan	3232 Mormon Coulee Rd	La Crosse	WI	54601	2011
Hydrite Chemical Co	701 Sumner St	La Crosse	WI	54603	2011
Hylendale Steel Supply	N3192 CTH J	Bangor	WI	54614	2011
Immediate Response Abatement Inc	N3135 Vista Court S	La Crosse	WI	54602	2011
Indus International Inc	340 S Oak St	West Salem	WI	54669	2011
Inland Label & Marketing LLC	2009 West Ave S	La Crosse	WI	54602	2011
Inland Label And Marketing Services LLC	3030 Airport Rd	La Crosse	WI	54603	2011
Inov8 International Inc.	430 Nelson Place	La Crosse	WI	54601	2011
Insulation Plus	2326 Commerce St	La Crosse	WI	54603	2011
Interstate Roofing & Waterproofing Inc.	N5544 Commerce Rd	Onalaska	WI	54650	2011
J & H Auto Body Shop Inc.	2520 Ward Ave	La Crosse	WI	54601	2011
J C Penney Corp Inc. Store #1210	3700 STH 16	La Crosse	WI	54601	2011
J F Brennan Co Inc.	820 Bainbridge St	La Crosse	WI	54601	2011
Jahn Transfer Inc.	2414 Hemstock Dr.	La Crosse	WI	54603	2011
Jeff Baker Repair	W7124 CTH T	Holmen	WI	54636	2011
Jeffs Tri-State Radiator	3207 South Ave	La Crosse	WI	54601	2011
Johns Auto Body & Sales	1800 Rose St	La Crosse	WI	54603	2011
Jolivette Farms	W3416 STH 16	West Salem	WI	54669	2011
Jolivette Modern Cleaners	1645 Caroline St	La Crosse	WI	54603	2011
Jos J Leinfelder & Sons Inc.	2015 Ward Ave	La Crosse	WI	54601	2011
K Mart Store 3567-Onalaska	3131 USH 16	Onalaska	WI	54650	2011
Kammel Excavating Inc.	4000 Kammel Rd	La Crosse	WI	54601	2011
Kevins Auto Body	625 Copeland Ave	La Crosse	WI	54603	2011
Kmart #4089	2415 State Rd	La Crosse	WI	54601	2011
Korish Auto Body	723 Commerce St	Holmen	WI	54636	2011
Krause Konstruktion - St Johns Church	630 West Ave	La Crosse	WI	54601	2011
Kwik Trip Inc.	1626 Oak St	La Crosse	WI	54603	2011
Kwik Trip Inc.	530 West Ave N	La Crosse	WI	54601	2011
Kwik Trip Store #761	500 Cass St	La Crosse	WI	54601	2011
L B White Inc.	W6636 L B White Rd	Onalaska	WI	54650	2011
La Cro Products Inc.	1648 Liberty St	La Crosse	WI	54602	2011
La Crosse County Household Haz Materials Fac	6502 STH 16	La Crosse	WI	54601	2011
La Crosse County Lf Msw & Ash Monofill	6500 STH 16	La Crosse	WI	54601	2011
C. La Crosse	2000 Marco Dr.	La Crosse	WI	54601	2011
La Crosse Fire Dept	Isle La Plume Drill Site	La Crosse	WI	54601	2011
La Crosse Medical Health Science Consortium	1300 Badger St	La Crosse	WI	54601	2011
La Crosse Sign Co	1450 Oak Forest Dr.	Onalaska	WI	54650	2011
La Crosse Transport Refrigeration	410 Sky Harbor Dr.	La Crosse	WI	54603	2011
La Crosse Tribune	401 N 3rd St	La Crosse	WI	54601	2011
La Crosse Truck Center Inc.	205 Causeway Blvd	La Crosse	WI	54603	2011
La Crosse Truck Center Inc.	215 Milwaukee St	La Crosse	WI	54603	2011
La Crosse Veterinary Clinic	2128 STH 16	La Crosse	WI	54601	2011
Lacrosse Fish Health Center--Us Fish & Wildlife	555 Lester Ave	Onalaska	WI	54650	2011
Ledegar Roofing	1711 Miller	La Crosse	WI	54601	2011
T. Leon	RT 1	Rockland	WI	54653	2011
Les Manske & Sons Excavating & Landscaping	W4845 N Chipmunk Rd	Stoddard	WI	54658	2011
Lincoln Middle School	510 9th St S	La Crosse	WI	54601	2011
Lithia Chrysler-Jeep Dodge Of La Crosse	434 S 4th St	La Crosse	WI	54601	2011

**Table 3-13**  
**La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
Litho Graphics Printing Co	2401 Hemstock Dr.	La Crosse	WI	54603	2011
Logan High School	1500 Ranger Dr.	La Crosse	WI	54603	2011
Logan Middle School	1450 Avon St	La Crosse	WI	54601	2011
Longfellow Middle School	1900 Denton St	La Crosse	WI	54601	2011
Lunde Foundry Inc.	430 North Star Rd	Holmen	WI	54636	2011
Luther High School	1501 Wilson St Box 129	Onalaska	WI	54650	2011
Macys North - La Crosse	3900 USH 16	La Crosse	WI	54601	2011
Magic Coin Laundry	334 West Ave N	La Crosse	WI	54601	2011
Main Street Renaissance	100 S 3rd St	La Crosse	WI	54601	2011
Mannstedt Ted & Sons Inc.	1722 Miller St	La Crosse	WI	54601	2011
Mathy Const. Co Cedar Rapids	920 10th Ave N Cedar Rapids	Onalaska	WI	54650	2011
Mathy Const. Co Plant 1	915 Commercial Ct Plant 1	Onalaska	WI	54650	2011
Mathy Const. Co Plant 4	920 10th Ave N Plant 4	Onalaska	WI	54650	2011
Mathy Const. Co Plant 46 Portable	920 10th Ave N Plant 46	Onalaska	WI	54650	2011
Mathy Const. Co Plant 49 Portable	920 10th Ave N Plant 49	Onalaska	WI	54650	2011
Mathy Const. Co Plant 52 Portable	920 10th Ave N Plant 52	Onalaska	WI	54650	2011
Mathy Const. Co Plant 54	915 Commercial Ct Plant 54	Onalaska	WI	54650	2011
Mathy Const. Co Plant 60	915 Commercial Ct Plant 60	Onalaska	WI	54650	2011
Mathy Const. Co Plant 66	920 10th Ave N Plant 66	Onalaska	WI	54650	2011
Mathy Const. Co Plant 67	920 10th Ave N Plant t 67	Onalaska	WI	54650	2011
Mcloone Metal Graphics Inc.	75 Sumner	La Crosse	WI	54603	2011
Means Services Inc.	1920 N Oak St	La Crosse	WI	54601	2011
Medicine Shoppe	510 Cass St	La Crosse	WI	54601	2011
Memory Lane Furniture	2401 S 16th St	La Crosse	WI	54603	2011
Menards	223 Lang Dr.	La Crosse	WI	54603	2011
Menards Onalaska	1301 Sand Lake Rd	Onalaska	WI	54650	2011
Metallics Inc.	W7274 CTH Z	Onalaska	WI	54650	2011
Mid-City Steel Fabricating Inc.	115 Buchner Place	La Crosse	WI	54601	2011
Midas	520 State St	La Crosse	WI	54601	2011
Midtown Collision Center LLC	530 Lang Drive	La Crosse	WI	54603	2011
Midwest Auto Sales & Body Shop	N7735 Amsterdam Prairie Rd	Holmen	WI	54636	2011
Midwest Industrial Asphalt	615 Sumner St	La Crosse	WI	54601	2011
Modern Business Products	714 La Crosse St	La Crosse	WI	54601	2011
MTI Mfg. Inc.	3235 George St	La Crosse	WI	54603	2011
Mulder Health Care Facility	713 N Leonard St	West Salem	WI	54669	2011
Mustang Classics Restorations	W6098 CTH T	Holmen	WI	54636	2011
Naval Reserve Center La Crosse	2226 Green Bay St	La Crosse	WI	54601	2011
Noffke Body Shop Inc.	1612 Lauderdale Pl	La Crosse	WI	54603	2011
Northern Automotive Systems LLC	2500 Commerce St	La Crosse	WI	54656	2011
Northern Automotive Systems LLC	2540 Commerce St	La Crosse	WI	54603	2011
Northern Engraving Corp	1400 Sandlake Rd	Holmen	WI	54636	2011
Northern Engraving Corp	2266 Enterprise Ave	La Crosse	WI	54601	2011
Northern Engraving La Crosse North	2325 Enterprise Ave	La Crosse	WI	54603	2011
Northern Engraving West Salem	600 Brickl Rd	West Salem	WI	54669	2011
Northern Micrographics Inc.	2004 Kramer St	La Crosse	WI	54601	2011
Northwest Hardwoods Inc. - Onalaska	718 2nd Ave SW	Onalaska	WI	54650	2011
Northwestern Supply Co	1010 Green Bay St	La Crosse	WI	54601	2011
Nonwest Bank La Crosse Na	305 5th Ave S	La Crosse	WI	54601	2011
Novak (Mark) Property	W1784 CTH A	Farmington	WI	54762	2011
NSPW French Island Power Plant	200 S Bainbridge St	La Crosse	WI	54601	2011
NSPW La Crosse Service Area	1500 Green Bay St	La Crosse	WI	54601	2011
NSPW La Crosse Service Center	3215 Commerce St	La Crosse	WI	54603	2011
NSPW Propane Air Plant	2nd And Grove	La Crosse	WI	54601	2011
NSPW West Salem Office	Jefferson St	West Salem	WI	54669	2011
Onalaska Army Reserve Center	W6821 Industrial Blvd	Onalaska	WI	54650	2011
Onalaska Care Center	1600 Main St	Onalaska	WI	54650	2011
T. Onalaska	N7024 Josie St	Onalaska	WI	54650	2011
One Hour Cleaners	1817 Jackson	La Crosse	WI	54601	2011
One Hour Cleaners	224 Sand Lake Coulee Rd	Onalaska	WI	54650	2011
ORC Industries Inc.	2700 Commerce St	La Crosse	WI	54603	2011



**Table 3-13  
La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
Pacal Industries LLC	400 Car St	La Crosse	WI	54603	2011
Paint By Lee Anderson	539 Brickl Rd Unit C	West Salem	WI	54669	2011
Painters Plus	644 Commerce St	Holmen	WI	54636	2011
Pauls Towing	620 Amy Dr	Holmen	WI		2011
Penske Auto Center La Crosse	2415 State Rd Site B	La Crosse	WI	54601	2011
Pepsi Cola Of La Crosse	1900 West Ave S	La Crosse	WI	54601	2011
Peter Pan Cleaners	111 Second Ave N	Onalaska	WI	54650	2011
Peterslie Property	118 S 3rd St	La Crosse	WI	54601	2011
Photo Art Techniques In Metal	100 N Hattan St	Bangor	WI	54614	2011
Pinnacle Pharmacy	3235 Airport Rd	La Crosse	WI	54603	2011
Platinum Press Inc.	2946 Airport Rd	La Crosse	WI	54602	2011
Powerhouse Marine	518 Logan St	La Crosse	WI	54603	2011
Quad City Sealers	1638 Caroline St	La Crosse	WI	54603	2011
Quality Woods Inc.	504 E Rock St	Rockland	WI	54353	2011
Retaining Wall Specialist Inc.	N1045 Brookside Dr.	La Crosse	WI	54601	2011
River City Furniture Stripping	108 E Clinton St	La Crosse	WI	54603	2011
River States Truck & Trailer Inc.	3959 N Kinney Coulee Rd	La Crosse	WI	54601	2011
River States Truck & Trailer Inc.	508 Monitor St	La Crosse	WI	54603	2011
River Steel Inc.	817 Bainbridge St	La Crosse	WI	54601	2011
RJS Transports	W5499 CTH F	La Crosse	WI	54601	2011
Roadway Express	2615 Hemstock St	La Crosse	WI	54603	2011
Rochester Sand & Gravel Plant 2	Portable	Portable	WI	54650	2011
Royal Engraving Co	214 Copeland Ave	La Crosse	WI	54603	2011
Runde Metal Recycling	643 Commerce St	Holmen	WI	54636	2011
Rybold Excavating & Plumbing Inc.	216 W Roberts St	Holmen	WI	54636	2011
Ryder Transportation Services Local 2099	1900 West Ave South Site B	La Crosse	WI	54601	2011
Ryder Truck Rental Inc.	912 Commercial Ct	Onalaska	WI	54650	2011
S & S Cycle Distribution Center	322 Causeway Blvd	La Crosse	WI	54601	2011
Salem Auto Body	N5089 CTH M	West Salem	WI	54669	2011
Sams Club #6436	1211 Crossing Meadows Dr.	Onalaska	WI	54650	2011
Schaller Jacobson	1621 Chase St	La Crosse	WI	54601	2011
Schaller Jacobson	4115 Mormon Coulee Ct	La Crosse	WI	54601	2011
Scientific Recyclers Inc.	659 Commerce St	Holmen	WI	54636	2011
Sears Roebuck And Co 2432	4200 USH 16	La Crosse	WI	54601	2011
Seidel Property	N3247 Hanks Peak Rd	La Crosse	WI	54601	2011
Serigraphic Silk Screen Inc.	2505 Larson St	La Crosse	WI	54601	2011
Service Drugs	111 Sand Lake Rd	Onalaska	WI	54650	2011
T. Shelby	2800 Ward Ave	La Crosse	WI	54601	2011
Sherwin Williams Store #3232	3902 Circle Dr.	Holmen	WI	54636	2011
Sherwin Williams Store 3826	818 Palace St	La Crosse	WI	54603	2011
Sir Speedy Printing	2330 Rose St	La Crosse	WI	54603	2011
Skipper Manufacturing LLC	127 Marina Dr.	La Crosse	WI	54603	2011
Smith Auto Body	215 S Oak St	West Salem	WI	54669	2011
Spectragraphics Printing	1750 Rose St	La Crosse	WI	54601	2011
Sprain Painting	CTH D	Holmen	WI	54636	2011
St Joseph Equipment Inc.	W2795 Sherry Ln	La Crosse	WI	54601	2011
St Joseph's Rehabilitation Center	2902 East Ave S	La Crosse	WI	54601	2011
Stella-Jones Corp	W1038 CTH U, Suite 101	Bangor	WI	54614	2011
Strupp Trucking Inc.	N3567 Shiflar Rd	La Crosse	WI	54603	2011
Stumlin Property	W3868 CTH De	Mindoro	WI		2011
Swansons Heavy Moving Co	2400 Hauser St	La Crosse	WI	54603	2011
Swiss Valley Farms Co	1415 James St	Bangor	WI	54614	2011
T & C Automotive Machine	2109 Ward Ave	La Crosse	WI	54601	2011
Target Store #0620	9400 STH 16	Onalaska	WI	54650	2011
Tauscher Construction	N3510 Welsch Coulee Rd	La Crosse	WI	54601	2011
The Marble Shop	2310 Cunningham St	La Crosse	WI	54601	2011
Thompson (Marshall) Property	N9643 Hutch Ct	Mindoro	WI	54644	2011
Thompson Laboratory	510 Copeland Ave	La Crosse	WI	54601	2011
Tires Plus	1247 Crossing Meadows Dr.	Onalaska	WI	54650	2011
Todd Jones Property	3001 Lakeshore Dr.	La Crosse	WI	54601	2011

**Table 3-13  
La Crosse County Critical Facilities: Hazardous Waste Generators**

Facility Name	Address	Municipality	State	Zip	Reporting Year
Tomlins I90 Amoco	2610 Rose St	La Crosse	WI	54603	2011
Toms Shell Service	234 N Leonard St	West Salem	WI	54669	2011
Torrance Casting Inc.	3131 Commerce St	La Crosse	WI	54603	2011
Trane Co	2213 S 20th	La Crosse	WI	54601	2011
Tri State Carpets Unlimited Inc.	RT 1 Wolter Rd	West Salem	WI	54669	2011
TSA At La Crosse Municipal Airport (Lse)	2850 Airport Rd	La Crosse	WI	54604	2011
TSS Fabricating	1625 Miller Po Box 2771	La Crosse	WI	54601	2011
Turnmire Auto Repair	W1710 STH 16 Site B	Bangor	WI	54614	2011
Twin City Testing Corp	2710 Commerce St	La Crosse	WI	54603	2011
Two Guys And A Dumpster	W6019 CTH S	Onalaska	WI	54650	2011
United Auto Supply Inc.	625 S Third St	La Crosse	WI	54601	2011
United Parcel Service	2550 Commerce St	La Crosse	WI	54601	2011
Upper Midwest Environmental Sciences Center	2630 Fanta Reed Rd	La Crosse	WI	54603	2011
UPS Freight	111 Causeway Site B	La Crosse	WI	54601	2011
US Army Reserve Onalaska	910 Oak Forest Dr. Site B	Onalaska	WI	54650	2011
UW La Crosse	855 East Ave N	La Crosse	WI	54601	2011
Venture Machine & Tool Inc.	1109 Venture Place	Onalaska	WI	54650	2011
Viking Aviation Inc.	Address Unknown	Medary	WI		2011
Viking Field	Between Main St And Hwy 35	Holmen	WI	54636	2011
Viterbo College	815 S 9th St	La Crosse	WI	54601	2011
W M W I - La Crosse	415 Island St	La Crosse	WI	54603	2011
Wal-Mart Supercenter #1679	3107 Market Place	Onalaska	WI	54650	2011
Wal-Mart Supercenter #5127	4622 Mormon Coulee Rd	La Crosse	WI	54601	2011
Walcraft Industries Inc.	2600 Hemstock St	La Crosse	WI	54603	2011
Webers Auto Body Inc.	102 Clinton St	La Crosse	WI	54603	2011
Wehrs Chevrolet Body Shop	1710 Pearl St	Bangor	WI	54614	2011
Wehrs Chevrolet Inc.	190 & Hwy 162	Bangor	WI	54614	2011
Weiss-Bush Auto Body	1102 Island St	La Crosse	WI	54603	2011
West Salem Pharmacy	126 S Leonard St	West Salem	WI	54669	2011
West Salem Village Yard Waste Facility	W3779 CTH C	West Salem	WI	54669	2011
Western Technical College	402 N 8th St RM 105	La Crosse	WI	54601	2011
Western Technical College	505 N 9th	La Crosse	WI	54602	2011
Western Technical College Transportation	2719 Larsen St	La Crosse	WI	54603	2011
Western Technical College-Kumm Center	400 6th Street North	La Crosse	WI	54601	2011
White Glove Auto	2002 Ward Ave	La Crosse	WI	54601	2011
White Glove Collections	2145 Ward Ave	La Crosse	WI	54601	2011
Wi Army National Guard Onalaska	910 Oak Forest Dr.	Onalaska	WI	54650	2011
Wi DNR La Crosse Area Shop	3550 Mormon Coulee Rd	La Crosse	WI	54601	2011
Wi Dot D 5	3550 Mormon Coulee Rd	La Crosse	WI	54601	2011

**Table 3-14  
La Crosse County Critical Facilities: Dams**

MAP CODE	DAM ID	DAM OFFICIAL NAME	DAM SIZE TYPE	DOWN CITY MI AMT	DOWN CITY NAME	ESTD HAZ RATING CODE
1	148	NESHONOC	LARGE	13	LA CROSSE	H
2	269	BURNS	LARGE	0	NONE	L
3	365	COON CREEK 33	LARGE	0	NONE	L
4	366	COON CREEK 35	LARGE	6	COON VALLEY	L
5	5014	LOCK & DAM NO 7	LARGE	2	LA CRESCENT	S
6	10271	BARRE'S	SMALL	0	BARRE MILLS	L
7	10272	DUTCH CREEK	SMALL	1	BANGOR	L
8	10273	VETERAN'S PARK	SMALL		NONE	L
9	11011	ANTONY, AL	SMALL			
10	11012	ARENTZ,ROBERT	SMALL			
11	11013	ARNTSEN, SARAH JANE	SMALL			
12	11014	BOSSHARD,JOHN	SMALL			
13	11015	BOSSHARD, JOHN	SMALL			

**Table 3-14**  
**La Crosse County Critical Facilities: Dams**

<b>MAP CODE</b>	<b>DAM ID</b>	<b>DAM OFFICIAL NAME</b>	<b>DAM SIZE TYPE</b>	<b>DOWN CITY MI AMT</b>	<b>DOWN CITY NAME</b>	<b>ESTD HAZ RATING CODE</b>
14	11016	DOBRUNZ, WILLARD J.	SMALL			
15	11017	ELSEN,GERALD	SMALL			
16	11018	GABRIELSON,HARLAND	SMALL			
17	11019	GABRIELSON, HARLAND	SMALL			
18	11020	GOARDER, GENE	SMALL			
19	11021	GUNDERSON, DEAN	SMALL			
20	11022	HANSON,CONRAD	SMALL			
21	11023	HAUSER, KENNETH #1	SMALL			
22	11024	HAUSER, KENNETH	SMALL			
23	11025	HAUSER, KENNETH #2	SMALL			
24	11026	HILBY,DAVID	SMALL			
25	11027	HUNDT, ARNOLD	SMALL			
26	11028	HUNDT, STANLEY	SMALL			
27	11029	KAMMEL, REINALD	SMALL			
28	11030	KROENER, KENNETH	SMALL			
29	11031	LAWSON, DAVID	SMALL			
30	11032	LAWSON, DAVID	SMALL			
31	11033	MIKSHOWSKY, JOSEPH	SMALL			
32	11034	MILLER, BERNIE	SMALL			
33	11035	MUELLER, TERRY	SMALL			
34	11036	NICCUUM, VERLIE	SMALL			
		NORTHERN ENGRAVING				
35	11037	COMPANY	SMALL			
36	11038	PFAFF, GORDON	SMALL			
37	11039	RHYME, ROBERT				
38	11040	SARAZIN, RICHARD	SMALL			
39	11041	SCHAMS, EUGENE NO.1	SMALL			
40	11042	SCHAMS, EUGENE NO.2	SMALL			
41	11043	SCHAMS,PAUL	SMALL			
42	11044	SCHMECKPEPER, ED	SMALL			
43	11045	SKEMP,SAMUEL J	SMALL			
44	11046	SMITH, ORVILLE	SMALL			
45	11047	STACH, FRANCIS	SMALL			
46	11048	TEMP, DON	SMALL			
47	11049	TIMM, GALE NO.1	SMALL			
48	11050	TIMM, GALE NO.2	SMALL			
49	11051	WELSH COULEE GROUP #1	SMALL			
50	11515	THOFTNE, WILLIAM				
51	11696	ALBERS,HARRY	SMALL			
52	11697	BRYE, EMIL	SMALL			
53	11698	BUCKNER,GARY	SMALL			
54	11699	CAMPBELL, CLOYCE				
55	11700	EVENSON,BRYON	SMALL			
56	11701	GOODENOUGH, STANLEY	SMALL			
57	11702	HALVORSEN,ROBERT	SMALL			
58	11703	HAUSER, WENDELL	SMALL			
59	11705	HOTH, GERARLD	SMALL			
60	11706	JAEKEL,ARVID	SMALL			
61	11707	JOHNSON, ARNOLD	SMALL			
62	11708	KICK, LEONARD	SMALL			
63	11709	KLOS,JEROME	SMALL			
64	11710	KNUDSON,ERNEST	SMALL			
65	11711	KOSS, ROBERT	SMALL			
66	11712	LATHAM, THEODORE	SMALL			
67	11713	MASHAK, LYLE T.	SMALL			

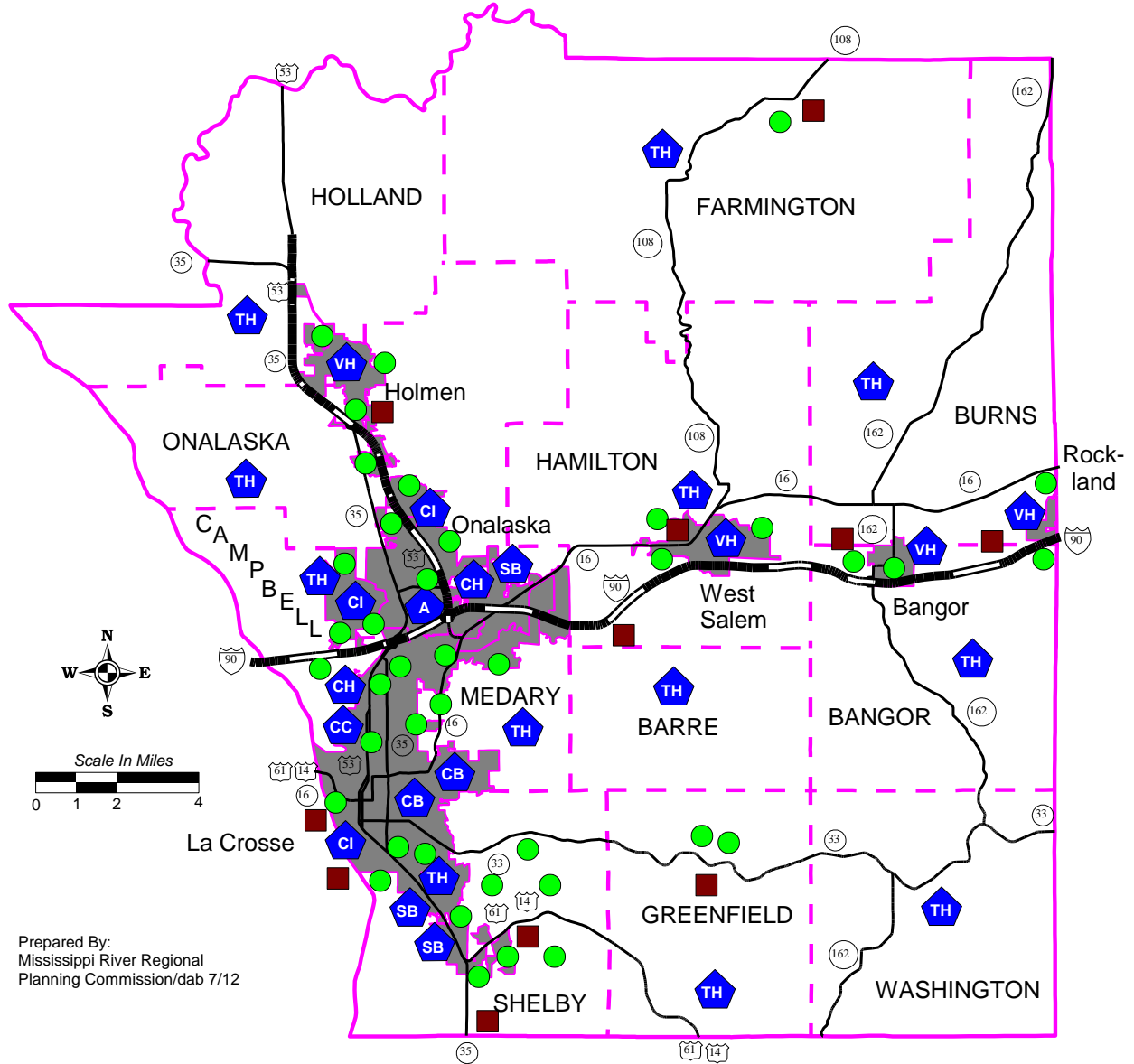
**Table 3-14  
La Crosse County Critical Facilities: Dams**

MAP CODE	DAM ID	DAM OFFICIAL NAME	DAM SIZE TYPE	DOWN CITY MI AMT	DOWN CITY NAME	ESTD HAZ RATING CODE
68	11714	MAZUR,RICHARD NO.2	SMALL			
69	11715	MAZUR, RICHARD NO.1				
70	11716	MILLER, WILBERT	SMALL			
71	11717	PFAFF,LAWRENCE				
72	11718	SCHALLER, ELDRED	SMALL			
73	11719	SCHALLER, ROBERT	SMALL			
74	11720	SCHAMS, DONALD	SMALL			
75	11721	SCHAMS, DONALD	SMALL			
76	11722	SCHAMS,EUGENE	SMALL			
77	11723	SCHAMS,JOHN	SMALL			
78	11724	SCHAMS, WILLIAM JR.	SMALL			
79	11725	SCHAMS, VINCE AND PAUL	SMALL			
80	11726	SHEALY, NORMAN	SMALL			
81	11727	STOVER,CLAYTON	SMALL			
82	11728	TIMM,CHARLES	SMALL			
83	11729	TIMM,WILLIAM H	SMALL			
84	11730	TYLER,STANLEY G.	SMALL			
85	11731	WELCH,JAMES	SMALL			
86	11732	WERNER, RAY	SMALL			
		WEST SALEM ROD AND GUN CLUB				
87	11733	CLUB	SMALL			
88	11734	WILLINGER, DONALD	SMALL			
89	11735	WITTE, SHERMAN	SMALL			
90	11794	SIMDARS,WILLIAM E.	SMALL			
91	12024	WELSH COULEE GROUP #2	SMALL			
92	12112	OERTEL, EDWARD NO 2	SMALL			
93	12113	OERTEL, EDWARD NO 1	SMALL			
94	12114	OERTEL, EDWARD NO 3	SMALL			
103	2	LA CROSSE NO. 7				
104	38	LA CROSSE NO. 6 -UP				
105	38	LA CROSSE NO. 6 -DN				
106	39	LA CROSSE NO. 5 -UP				
107	39	LA CROSSE NO. 5 -DN				
108	40	LA CROSSE NO. 4 -UP				
109	40	LA CROSSE NO. 4 -DN				
110	41	LA CROSSE NO. 3 -UP				
111	41	LA CROSSE NO. 3 -DN				
112	42	LA CROSSE NO. 2 -UP				
113	42	LA CROSSE NO. 2 -DN				
114	43	LA CROSSE NO. 1 -UP				
115	43	LA CROSSE NO. 1 -DN				
116	11704	CLEMENTS FAMILY	SMALL			L
117		SLYER'S DAM				
118		BADGER MILL DAM				
119		CASPERGS DAM				
120		STEVENSTOWN DAM				

*Hazard Rating Code - Dams are classified as Low, Significant or High Hazard. A dam is assigned a rating of High Hazard when its failure would put lives at risk. The "hazard" rating is not based on the physical attributes, quality or strength of the dam itself, but rather the potential for loss of life or property damage should the dam fail.*

# Map 3-1 La Crosse County Critical Facilities - Government, Military, Wastewater Treatment Plants and Wells

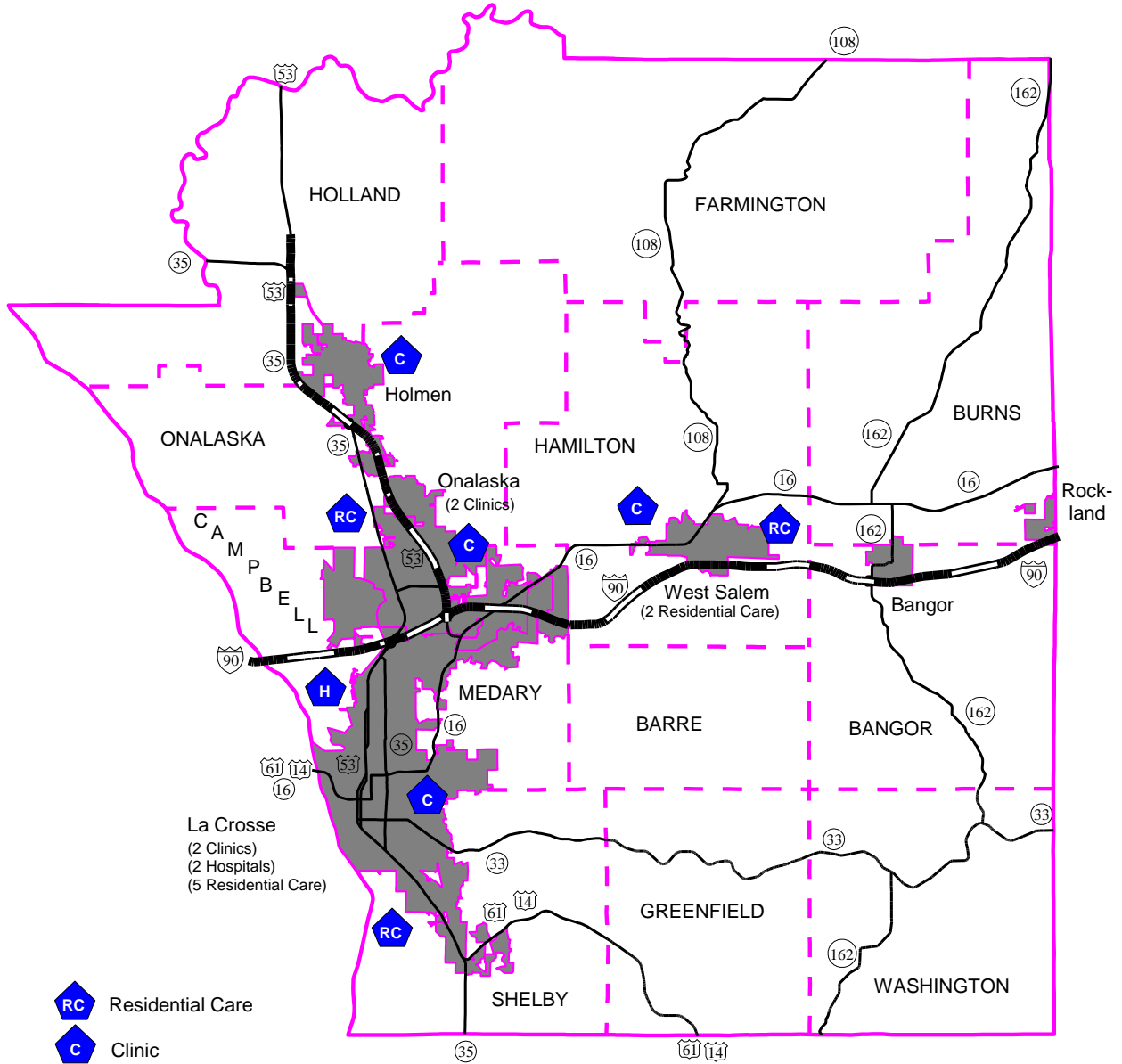
There are: 12 town halls, 4 village halls, 2 city halls, 3 city buildings, 3 county buildings, 1 armory, and 3 state buildings.  
See Tables 3-7, 3-11 and 3-12 for specific names and contact information










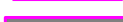
Prepared By:  
Mississippi River Regional  
Planning Commission/dab 7/12

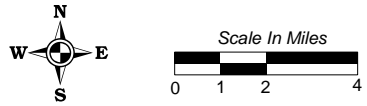
- |                        |                   |                            |
|------------------------|-------------------|----------------------------|
| Interstate             | Armory            | Town Hall                  |
| State / U.S. Highway   | County Courthouse | Village Hall               |
| Town Boundary          | County Building   | State Building             |
| County Boundary        | City Hall         | Well                       |
| Incorporated Community | City Building     | Wastewater Treatment Plant |

## Map 3-2 La Crosse County Critical Facilities - Hospitals, Clinics and Residential Care



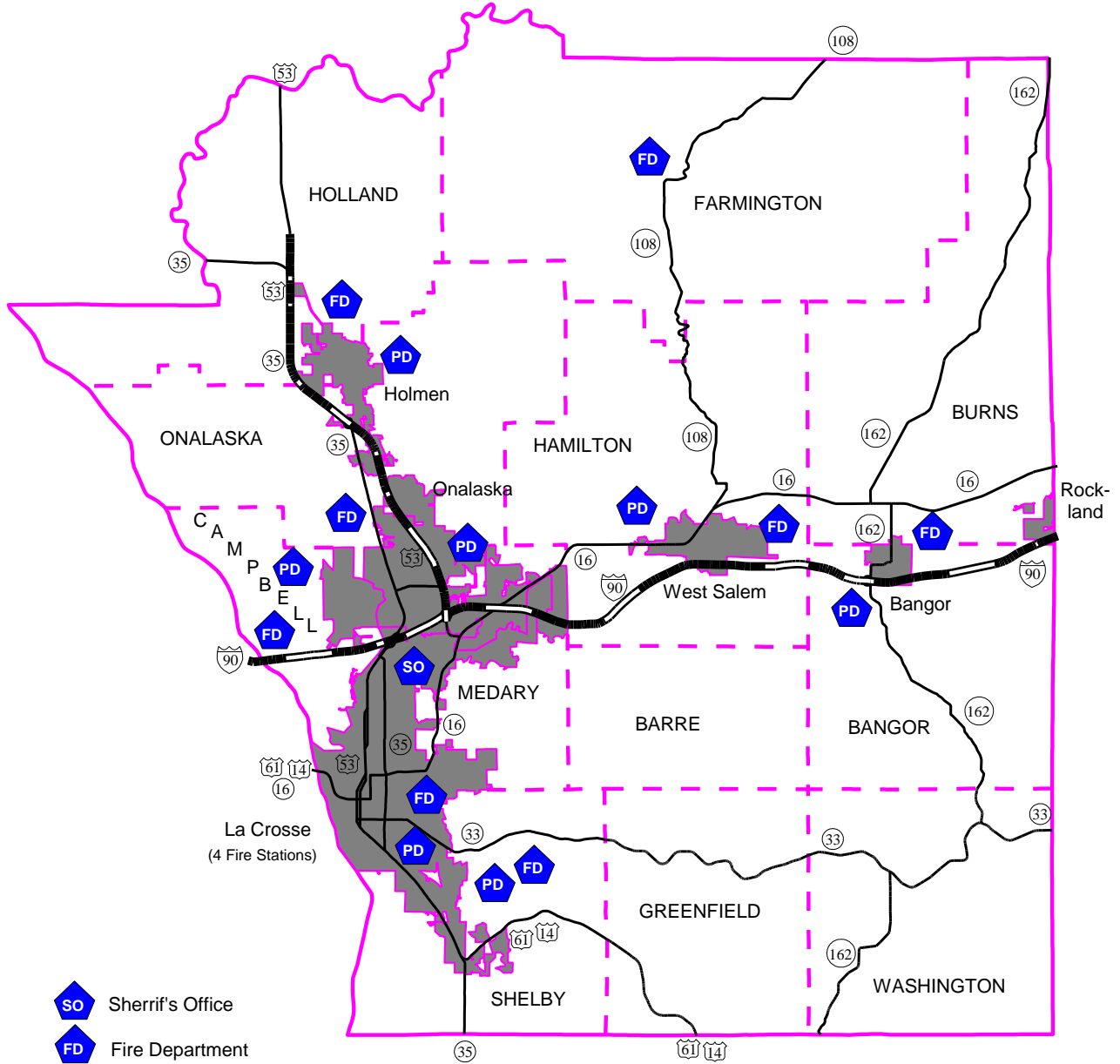
There are 6 Clinics, 2 Hospitals and 8 Residential Care facilities in the county. See Table 3-8 for specific contact information.

-  Residential Care
-  Clinic
-  Hospital
-  Interstate
-  State / U.S. Highway
-  Town Boundary
-  County Boundary
-  Incorporated Community



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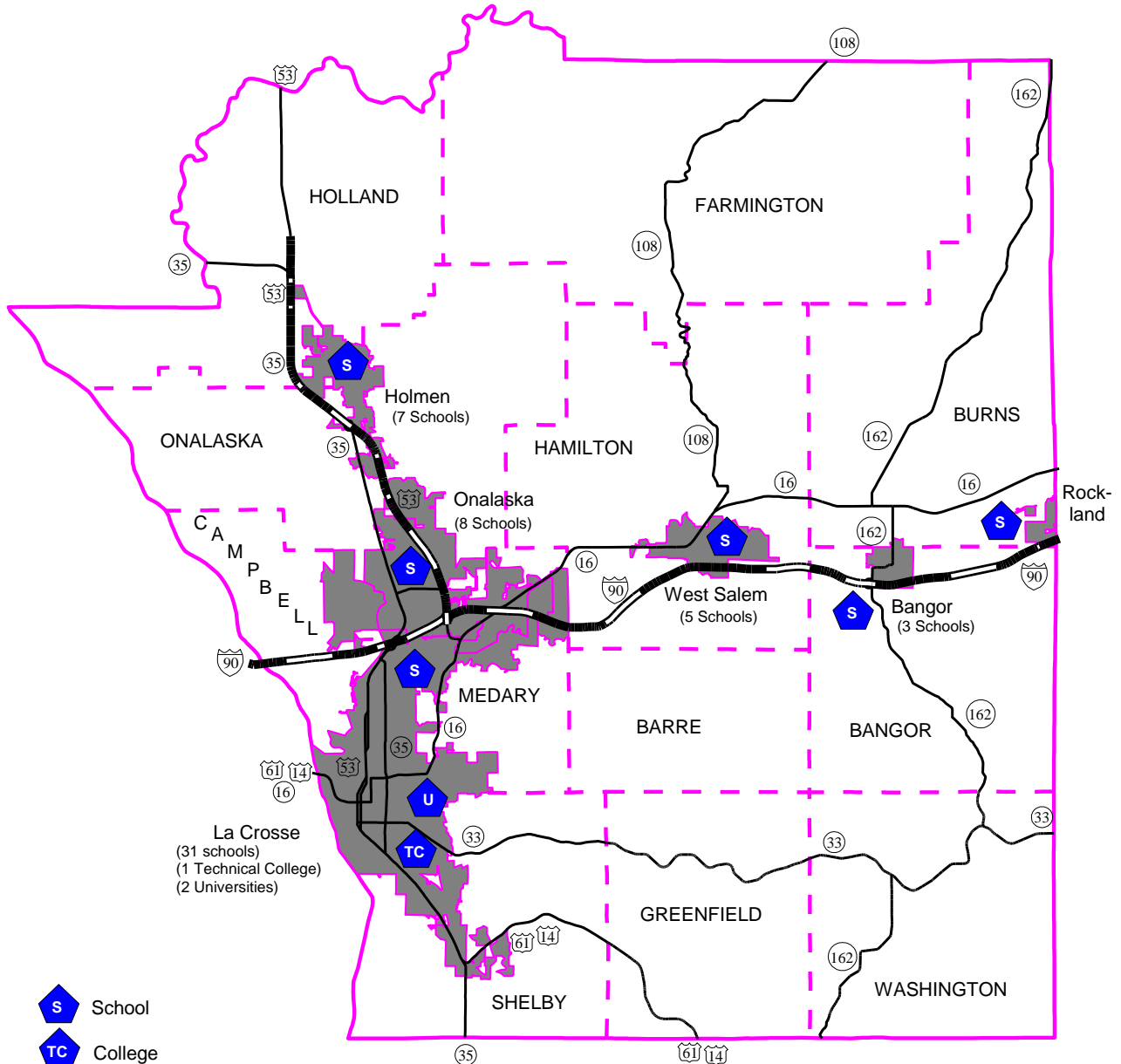
### Map 3-3 La Crosse County Critical Facilities - Police, Fire Departments and Hazardous Material Sites



There are over 330 different Hazardous Material Sites/Generators within the County. See Table 3-13 for information on these sites/generators. There are 9 Fire Departments, 8 Police Departments and the Sheriff's Office that serve the County. See Table 3-9 for contact information.

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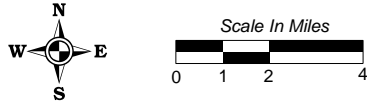
## Map 3-4 La Crosse County Critical Facilities - Schools, Colleges and Universities



- School
- College
- University

- Interstate
- State / U.S. Highway
- Town Boundary
- County Boundary
- Incorporated Community

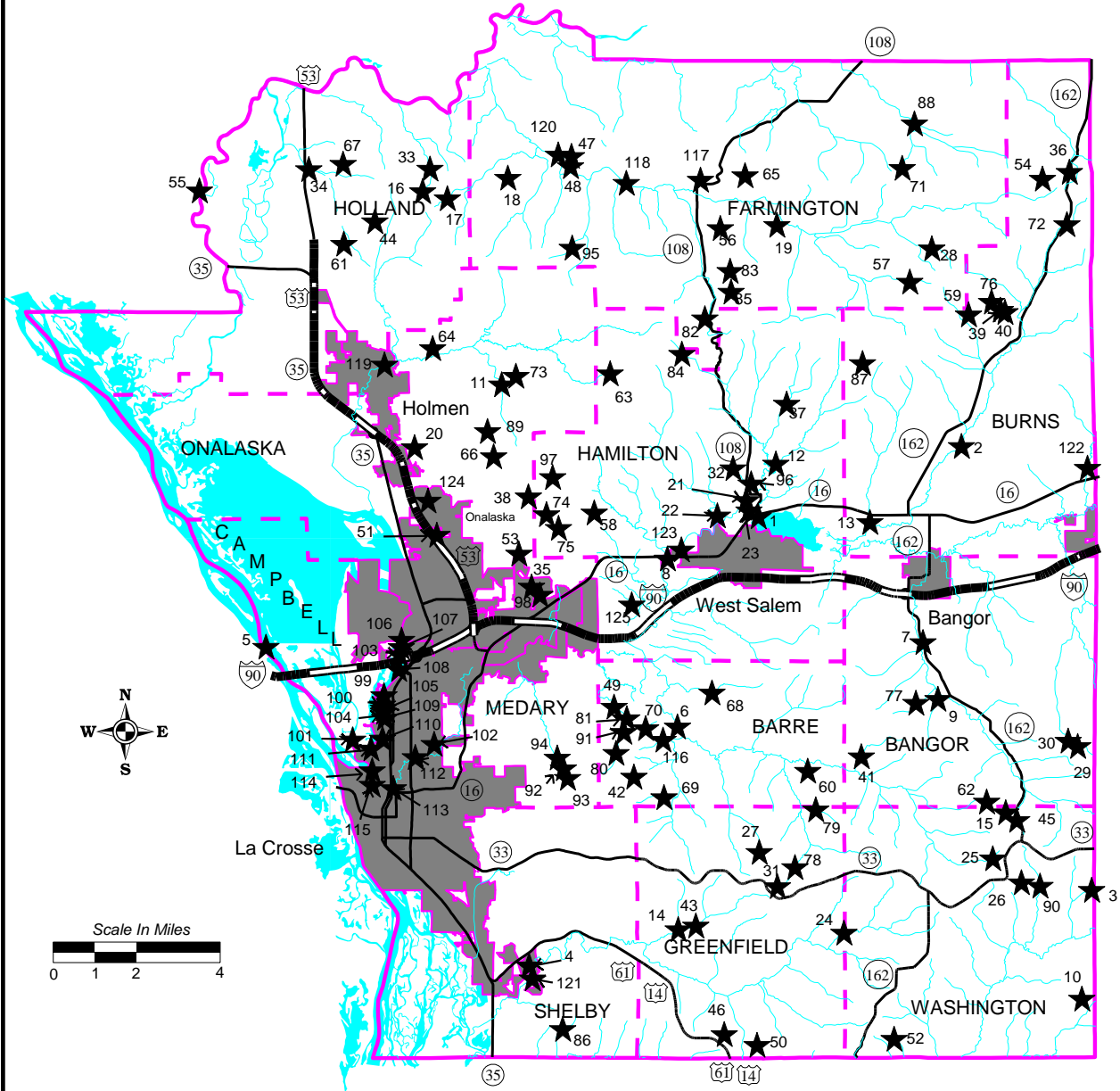
There are 56 schools: 9 High Schools, 8 Middle Schools, 34 Elementary Schools and 5 Other Schools in the County. See Table 3-10 for specific contact information. In addition there is one Technical College with 11 buildings and 2 Universities. Viterbo University has 17 Buildings on its Campus and the University of Wisconsin La Crosse has 27 buildings on its campus.



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## Map 3-5 La Crosse County Critical Facilities - Dams

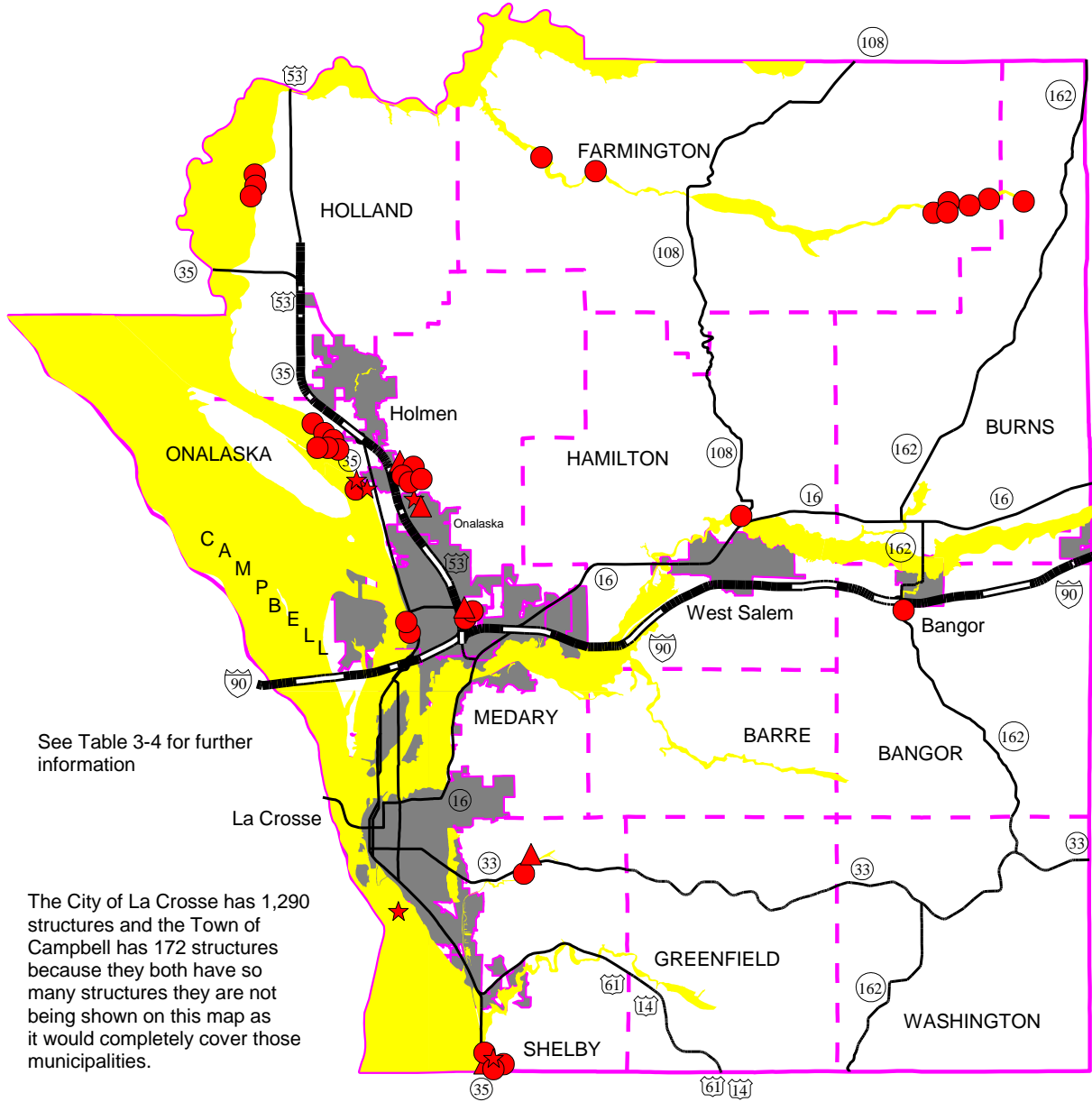


- Dam
- Interstate
- State / U.S. Highway
- Town Boundary
- County Boundary
- Incorporated Community

There are 125 dams in the county that have been identified by the Wisconsin DNR. See Table 3-14 for further information on these dams.

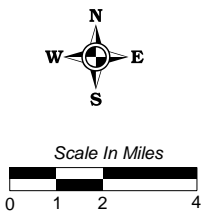
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## Map 3-6 La Crosse County Structures within the FEMA 100-year Flood Boundary



See Table 3-4 for further information

The City of La Crosse has 1,290 structures and the Town of Campbell has 172 structures because they both have so many structures they are not being shown on this map as it would completely cover those municipalities.



- |   |                              |  |                        |
|---|------------------------------|--|------------------------|
|  | FEMA 100-year flood boundary |  | County Boundary        |
|  | 1 Floodplain Structure       |  | Town Boundary          |
|  | 5 Floodplain Structures      |  | Interstate             |
|  | 10 Floodplain Structures     |  | State/US Highway       |
|   |                              |  | County Road            |
|   |                              |  | Incorporated Community |

## 4.0 LA CROSSE COUNTY MULTI-HAZARDS MITIGATION PLAN STRATEGIES

The County’s villages, city and towns overall multi-hazards mitigation goal is to identify economical and environmentally sound ways to protect life, health and property from future hazards.

The following is a list of projects and actions by local governments or organizations that are designed to achieve this goal that collectively serve as an overall strategy for hazard mitigation. These goals, actions and projects are the result of the public participation process outlined in Chapter One and the hazard risk assessment conducted in Chapter 3. Cost effectiveness is not used to prioritize projects due to costs being unknown until the time that the project study is actually launched. A cost effectiveness study will be completed when costs for the project are known and sources of funds have been committed to undertake them. The project timetable on the following pages is how the County and municipalities will prioritize these goals, actions and projects. The project timetable listed for each of the municipalities was obtained from the respective municipality officials. Municipal officials did stress that due to financial considerations if funding for a specific project becomes available then that specific project would become its priority. Once funding becomes available a cost benefit review would be completed to prioritize which projects would be completed. Due to reductions in budgets and loss of State Aids most projects listed the La Crosse County Multi-Hazards Mitigation Plan 2008 - 2012 have been carried over or deferred to this plan.

The La Crosse County Emergency Coordinator will be the lead person for all jurisdictions regarding hazard mitigation projects as no other jurisdiction has a dedicated Emergency Management department. The County along with all Villages and the Cities have the authority to enact and enforce zoning ordinances, are their own taxing authority, have their own comprehensive plan and maintain their own annual budget. The County along with all jurisdictions within the county are members in the Mississippi River Regional Planning Commission and are eligible for planning assistance from that organization.

### LA CROSSE COUNTY SPECIFIC HAZARD GOALS, ACTIONS AND PROJECTS

The following is a list of goals La Crosse County has developed for the various hazards

**Table 4-1 La Crosse County  
Hazard Mitigation Goals**

<b>Hazard</b>	<b>Goal</b>
<b>Flooding, Stormwater Drainage, and Dams</b>	<i>Protect the health and safety of residents and property in high water events by improving infrastructure and warning and communication systems.</i>
<b>Hail, Lightning, Thunderstorm and Fog</b>	<i>Inform residents on the dangers of hail, lightning, thunderstorm and fog hazards and take actions to improve warning and communications and reduce loses from these hazards.</i>
<b>Tornadoes and High Winds</b>	<i>Protect the health safety and welfare of residents and property by improving emergency communication systems and shelters.</i>
<b>Extreme Cold and Heat Event Hazards</b>	<i>Provide educational information to the public on the dangers of extreme heat and cold to reduce future loss of life.</i>
<b>Forest and Wildland Fire Hazards</b>	<i>Protect residents and property from forest and wild land fires.</i>
<b>Heavy Snow and Ice Storms and Blizzard Hazards</b>	<i>Inform the public about the threat of heavy snow and Ice storms and blizzards and take actions to improve warning and communications and reduce future losses from these hazards.</i>
<b>Earthquake, Landslide and Subsidence Hazards</b>	<i>Lessen the impact of earthquakes, landslides, and subsidence on persons and property.</i>
<b>Agricultural and Drought Hazards</b>	<i>Inform the public on the hazards associated with drought and provide information on methods to reduce water usage and minimize agricultural losses.</i>
<b>Pandemic Flu Hazards</b>	<i>Inform the public on the hazards associated with pandemic flu and provide information on methods to reduce future losses.</i>

The following is a list of Multi-Hazard Mitigation Actions and Projects to be implemented by La Crosse County.

**Table 4-2  
La Crosse County  
Hazard Mitigation Actions or Projects**

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
<b>Flooding, Storm water Drainage, and Dam Hazards Actions and Projects</b>				
Investigate the concept of a voluntary floodplain property buyout program through a survey of property owners in the floodplain. This survey could also inquire about interest in flood proofing and/or elevating their properties to protect health, public safety and welfare.	Existing County staff resources	Emergency Management Committee	Continual	Carried over, this project will be on-going until all floodplain structures are mitigated
Continue to monitor and enforce N.R. 116 Floodplain, Shore Land - Wetland Regulations and any changes to it.	County Zoning Administrator	County Zoning Administrator	Annually	Carried over from previous plan
Investigate the idea of promoting the National Flood Insurance Program through a community seminar where federal and state officials would be able to present the program and answer questions.	Existing County staff resources	Local Emergency Planning Committee	2015-2016	Deferred
Identify and upgrade/improve or replace existing culverts and bridges within the County that are causing flooding issues or concerns as funding becomes available.		Emergency Management Director and County Highway Department	Continual Program	
To maintain the County's compliance with the National Flood Insurance Program the County will undertake the following actions: 1) The County Zoning Administrator shall annually attend floodplain zoning seminars and workshops to keep informed on floodplain issues and regulations 2) The County Zoning Administrator shall report quarterly on floodplain permit activity to the Local Emergency Planning Committee 3) The County Zoning Administrator shall administer, enforce and update the County's floodplain ordinances as prescribed by law.	Existing County staff resources	County Zoning Administrator	Continual Program	
In coordination with affected Villages and the City of La Crosse develop evacuation plans for those areas lying within the floodplain	Existing County staff resources	Emergency Management Director	2015-2017	Deferred
Annually review and upgrade the County's communications capability specifically the wireless capability	Existing County staff resources	County Local Emergency Planning Committee, County Emergency Management Director	Continual Program	
Review flood disaster impacts and revise and update this plan as needed after a flood disaster. New flood hazard mitigation projects and strategies are likely to arise after a flood disaster. To deal with this situation the County Emergency Management Director and Zoning Administrator shall meet and report in a timely manner to the County Local Emergency Planning Committee on potential changes to the County's All Hazard Mitigation Plan. The Local Emergency Planning Committee shall recommend reaffirmation, amendment or update (rewrite) of this plan to the County Board for action. This disaster assessment may be included in the annual review process discussed in the Plan Maintenance and Adoption section of this plan if doing so will not impair the response to the recent flood disaster.	Existing County staff resources	County Zoning Administrator, County Local Emergency Planning Committee, County Emergency Management Director	After each flood disaster	
<b>Hail, Lightning, Thunderstorm and Fog Hazard</b>				
Encourage the burying of electrical lines	Existing County staff resources	Local Emergency Planning Committee	Continual Program	
Encourage the burying of telecommunication lines	Existing County staff resources	Local Emergency Planning Committee	Continual Program	
Upgrade lightning protection at all public safety and Skywarn (Amateur Radio) radio tower sites located in La Crosse County		County Emergency Management Director	2018	Deferred
Install security and operation monitoring systems at all public safety radio tower sites		County Emergency Management Director	As funding becomes available	Deferred

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
Utilize the Severe Awareness Week to alert residents of the need for concern about hail, lightning, thunderstorm and fog hazards and actions they can take to minimize losses from these hazards.	Existing County staff resources	County Emergency Management Director	Annual Program	
<b>Tornadoes and High Winds</b>				
Require anchoring on new mobile home residences, carports and porches.	Existing County staff resources	County Local Emergency Planning Committee	Continual Program	
Encourage the burying of underground power, cable and telephone lines.	Existing County staff resources	County Local Emergency Planning Committee	Continual Program	
Encourage the use of interlocked roofing shingles.	Existing County staff resources	County Local Emergency Planning Committee	Continual Program	
Encourage the construction of concrete safe rooms in mobile home parks and other residential structures subject to high winds.	Existing County staff resources	County Local Emergency Planning Committee	Continual Program	
Identify buildings that will provide protection to the public in the event of a tornado or high winds.	Existing County staff resources	County Local Emergency Planning Committee	Continual Program	
Place NOAA All Hazards warning radios in all special needs facilities and campgrounds. (Approximately 200 locations @ \$45 each)	\$9,000	County Local Emergency Planning Committee	2008-2009	Completed
Purchase Mobile and portable amateur radios for Skywarn storm spotter. 20 portable radios @ \$200 = \$4,000. 10 mobile radios plus antennas @ \$350 = \$3,500	\$7,500	County Local Emergency Planning Committee	2015-2016	Deferred
Purchase NOAA All Hazards radios for county residents		County Local Emergency Planning Committee	Continual Program	
<b>Extreme Cold and Heat Event</b>				
Identify buildings that could be used as shelters with appropriate heating, ventilation and air conditioning for housing that segment of population that are more vulnerable to extreme temperature events, such as the low income, elderly, and sick.	Existing County staff resources	County Emergency Management Director and the County Local Emergency Planning Committee	2007-2008	Completed
Extend or enhance the existing AmeriCorps/Citizens Corps partnership with La Crosse County Health Dept. and Emergency Management to provide education to vulnerable and special needs person for disaster preparedness and for training for organizations or agencies that provide guidance, support or services to these individuals with a focus on natural (weather) hazards.	Existing County staff resources	County Emergency Management Director and the County Local Emergency Planning Committee	Continual Program	
Install natural gas heater in the Communications & Command Vehicle garage	\$10,000	County Emergency Management Director	2010	Not interested in project anymore
Investigate developing a program that provides fans to the elderly in times of extreme heat	Existing County staff resources	County Emergency Management Director and the County Local Emergency Planning Committee	Continual Program	Changed timetable to continuous from specific year
<b>Forest and Wildland Fire</b>				
Develop/maintain cooperative fire agreements with area fire departments and the Department of Natural Resources as necessary.	Existing County staff resources	County Emergency Management Director	Continual Program	
Upgrade/enhance Wildland fire trailer equipment		County Emergency Management Director	2015-2016	Deferred
Encourage periodic cutting of Conservation Reserve Program (CRP) land per program requirements	Existing County staff resources	County Emergency Management Director and NRCS	Continual Program	
<b>Heavy Snow and Ice Storms and Blizzard</b>				
Prepare timely releases that inform the public on actions and precautions they can take to minimize disruptions and losses	Existing County staff resources	County Emergency Management Director	Annually	
Purchase four programmable highway message boards for placement along major routes for evacuation and road closure warnings during blizzards, ice storms or		County Emergency Management Director	2018	Deferred due to budget constraints

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
other winter weather emergencies				
Investigate the concept of identifying locations in the County where snow fences could be constructed or trees and bushes (living snow fence) could be planted to increase motor vehicle safety.	Existing County staff resources	Emergency Management Director in cooperation with the County Highway Commissioner and Village Officials	2017	Deferred
Construct a regional salt storage building to increase capacity for availability of salt for winter maintenance for county and surrounding municipalities and to aid in cost controls of seasonal salt orders.		County Highway Commissioner	2019	Deferred due to prioritization of projects within Highway department
<b>Earthquake, Landslide and Subsidence</b>				
Investigate developing an inventory/prioritization of roads/road segments that have shoulders with slopes conducive to erosion and land/mud slides. The roads/road segments identified can be stabilized as funding becomes available.	Existing Village staff resources	County Emergency Management Director in cooperation with the County Highway Commissioner and Village Officials	2015-2016	Deferred due to prioritization of projects within Highway department
<b>Agricultural and Drought</b>				
Develop an education/information program that informs agricultural producers and residents about water conserving measures and crop insurance.	Existing County staff resources	County Emergency Management Director in cooperation with City, Village and Village Officials	2015-2016	Deferred
<b>Pandemic Flu</b>				
Develop a pandemic flu plan listing specific actions and identifies emergency powers and who has the authority to use them.	Existing County staff resources	County Emergency Management Director in cooperation with City Officials, Village Officials, Emergency response personnel and local hospitals and clinics	<del>2008-2009</del>	Completed

**Mitigation Projects for Municipalities**

The following is a list of Multi-Hazard Mitigation Actions and Projects to be implemented by each City, Village and Town within La Crosse County.

**Table 4-3  
La Crosse County Municipal  
Hazard Mitigation Actions or Projects**

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
<b>Flooding, Storm water Drainage, and Dam Hazards Actions and Projects</b>				
In conjunction with the County investigate the concept of a voluntary floodplain property buyout program through a survey of property owners in the floodplain. This survey could also inquire about interest in flood proofing and/or elevating their properties to protect health, public safety and welfare.	Existing Village and County staff resources to investigate	County Emergency Management Director to serve as coordinator	Continual	Continual program, determine interest on an area by area basis
Continue to monitor and enforce N.R. 116 Floodplain, Shore Land - Wetland Regulations and any changes to it.	Existing Village and City resources	Village or City Board or designee	Annually	Continual Program
Work to reduce or eliminate repetitive loss or substantially damaged structures by undertaking the following: 1) The Village or City Clerk or designee biannually shall provide a list of owners of repetitive loss structures or substantially damaged structures within the Village or City to the County Emergency Management Director. The County Emergency Management Director will then biannually write a	Existing Village, City and County staff resources	Village or City Board or designee and the County Emergency Management Director	Biannually	Carried over from previous plan

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
<p>letter to owners of repetitive loss structures or substantially damaged structures to inform them of techniques and potential state and federal resources available to reduce further flood losses. Specific emphasis will be placed on contacting them if the County, City or a Village proceeds with a voluntary buyout program as described above.</p> <p>2) Inform property owners through the annual Survey to act as a resource for information and answer questions on how to reduce future flood losses.</p>				
In conjunction with the County investigate the idea of promoting the National Flood Insurance Program through a community seminar where federal and state officials would be able to present the program and answer questions.	Existing Village, City and County staff resources	Village or City Board or designee and the County Emergency Management Director	2015-2016	Deferred, relates to NFIP compliance
<p>To maintain compliance with the National Flood Insurance Program the Village/City will undertake the following actions:</p> <p>1) The Village/City Clerk or designee shall annually attend floodplain zoning seminars and workshops to keep informed on floodplain issues and regulations.</p> <p>2) The Village/City Clerk or designee shall report monthly on floodplain permit activity to the Village Board.</p> <p>3) The Village/City Clerk or designee shall administer, enforce and update the municipality's floodplain ordinance as prescribed by law.</p>	Existing Village/City staff and resources	Village/City Clerk or designee	Annually	Carried over from previous plan, relates to NFIP compliance
Work in conjunction with the County to review flood disaster impacts and revise and update this plan as needed after a flood disaster. New flood hazard mitigation projects and strategies are likely to arise after a flood disaster. To deal with this situation the Village/City Clerk or designee shall meet and report in a timely manner to the Village/City Board on potential changes to the Village's portion of the La Crosse County Multi-Hazard Mitigation Plan. The Village Board shall recommend to reaffirm, amend or update (rewrite) this plan to the County Emergency Management Coordinator and the Emergency Management Committee. This disaster assessment may be included in the annual review process discussed in the Plan Maintenance and Adoption section of this plan if the response to the recent flood disaster will not be impaired by doing so.	Existing Village and County staff resources	Village Clerk or designee, Village Board, Emergency Management Coordinator, Emergency Management Committee	After each flood disaster	Carried over from previous plan
Identify and upgrade/improve or replace existing culverts and bridges that are causing flooding issues or concerns as funding becomes available		Individual municipal boards in conjunction with Emergency Management Director and County Highway Department	Continual Program	
<b>Hail, Lightning, Thunderstorm and Fog Hazard</b>				
Encourage the burying of electrical lines	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Encourage the burying of telecommunication lines	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Assist the County in utilizing the Severe Awareness Week to alert residents of the need for concern about hail, lightning, thunderstorm and fog hazards and actions they can take to minimize losses from these hazards.	Existing City, Village, Town and County staff resources	County Emergency Management Director coordinating with City, Town and Village Clerks	Annual Program	Carried over from previous plan
<b>Tornadoes and High Winds</b>				
Require anchoring on new mobile home residences, carports and porches.	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Encourage the burying of underground power, cable and telephone lines.	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Encourage the use of interlocked roofing shingles.	Existing City, Village, Town	Individual municipal Boards in conjunction with	Continual Program	Carried over from previous plan

Mitigation Action or Project	Funding Source(s)	Responsible Official or Organization	Project Timetable	Comments
	and County staff resources	the County Emergency Management Committee		
Encourage the construction of concrete safe rooms in mobile home parks and other residential structures subject to high winds.	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Identify buildings that will provide protection to the public in the event of a tornado or high winds.	Existing City, Village, Town and County staff resources	Individual municipal Boards in conjunction with the County Emergency Management Committee	Continual Program	Carried over from previous plan
Purchase NOAA All Hazards radios		Individual municipal Boards in conjunction with the County Local Emergency Planning Committee	Continual Program	
<b>Extreme Cold and Heat Event</b>				
In conjunction with the County and adjacent municipalities identify buildings within or adjacent to their respective municipality that could be used as shelters with appropriate heating, ventilation and air conditioning for housing that segment of population that are more vulnerable to extreme temperature events, such as the low income, elderly, and sick.	Existing City, Town, Village and County staff resources	County Emergency Management Director will coordinate with each municipal board or their designee	2007-2008	Completed
<b>Forest and Wildland Fire</b>				
Develop/maintain cooperative fire agreements with area fire departments and the Department of Natural Resources as necessary.	Existing City, Town and Village staff resources	City, Town and Village Boards will be responsible for their municipality	Continual Program	Carried over from previous plan
<b>Heavy Snow and Ice Storms and Blizzard</b>				
Cooperate with the County in preparing timely releases that inform the public on actions and precautions they can take to minimize disruptions and losses.	Existing County staff resources along with City, Town and Village staff and resources	County Emergency Management Director coordinating with City, Town and Village Clerks	Annually	Carried over from previous plan
Identify locations where snow fences could be constructed or trees/brushes (living snow fences) could be erected or planted to increase motor vehicle safety by reducing or eliminating blowing/drifted snow	Existing County staff resources along with City, Town and Village staff and resources	County Emergency Management Director and County Highway Commissioner coordinating with City, Town and Village Clerks	2017	Deferred from previous plan, project was not budgeted for in either Highway or Emergency Management department
<b>Earthquake, Landslide and Subsidence</b>				
Investigate developing an inventory/prioritization of roads/road segments that have shoulders with slopes conducive to erosion or land /mud slides. The roads/road segments identified can be stabilized as funding becomes available.	Existing City, Village/ and Town staff resources	City, Town or Village Board or designee	2015-2016	Deferred due to prioritization of projects within Highway department
<b>Agricultural and Drought</b>				
In conjunction with the County consider developing an education/information program that informs agricultural producers and residents about water conserving measures and crop insurance.	Existing County staff resources	County Emergency Management Coordinator in cooperation with City, Village and Town Officials	2016-2017	Deferred



**Individual Municipal Projects**

The following is a list of Multi-Hazard Mitigation Actions and Projects which individual municipalities have identified.

**Table 4-4  
Municipal Specific Hazard Mitigation Actions or Projects**

<b>Village of Bangor</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Relocate / Update warning sire	Village Board		Current siren does not reach entire community
Purchase generator for Police Dept.	Village Board		
Construct new Emergency Operation Center – to be shared with surrounding communities	Village Board		
Construct walk bridges over Dutch Creek	Village Board		Bridges are required for access during high water
Storm sewer cleanup	Village Board		
Construct new sand/salt storage building	Village Board		
Purchase multi-purpose vehicles for emergency responses on local State Trail and nearby marsh areas	Village Board		
Construct backup water reservoir	Village Board		
New curb & gutter along with storm water system	Village Board		
Purchase new communications equipment	Village Board		
Create education material, i.e. develop call list, outreach	Village Board		
Additional training for village personel and community residents	Village Board		
Purchase approx. 650 weather alert radios	Village Board		
Change roofs on municipal buildings to more weather proof types	Village Board		
Purchase portable emergency signs	Village Board		
Purchase snow fencing	Village Board		
Purchase cots and other needed supplies for emergency shelter	Village Board		

<b>Village of Holmen</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Replace and relocate 2 civil defense sirens	Village Board	2016	Est. \$30,000
Purchase backup generator	Village Board	ASAP	Est. \$69,000

<b>Village of Rockland</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Investigate and improve storm water and snow melt drainage from Sarah Circle	Village of Rockland Board	As soon as funding becomes available	
Establish the Rockland Fire Station as a cooling station for village residents	Village of Rockland Board		
Construct a shed to house sand and salt mixture for use during snow and ice events.	Village of Rockland Board		
Purchase a backup generator to replace existing aging generator	Village of Rockland Board	As soon as funding becomes available	Existing generator is constantly needing repair

<b>Village of West Salem</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Develop a Stormwater utility	Village administrator		Completed
Develop a text messaging / social notification program	Police Chief	2015 - 2019	New Project
Upgrade snow removal equipment	Village Administrator	2015 - 2019	New Project
Develop policy regarding requirement of a retention/detention pond on develops over 1 acre in size	Village Administrator	2015	New Project
Complete an engineering study and replace entire storm water drainage ditch along West Elm St. and all receiving ditches from that line	Village Administrator	When funding available	New Project
Purchase portable pumps for use during flooding	Village Administrator	2015 - 2019	New Project
Upgrade/Repair existing detention/retention ponds	Village Administrator	When funding available	New Project
Upgrade/replace the sanitary sewer mains beginning at West Hamilton St and continuing northwest through the Village	Village Administrator	2015 - 2019	New Project
Construct a new EOC that will also double as a storm shelter. New EOC would then double as a backup EOC for La Crosse County.	Village Administrator and County Emergency Management Director	2018 or when funding becomes available	New Project – Existing EOC lacks telephone lines, electrical outlets and communication equipment
Replace old outdated communication system with new up-to-date system which will have redundancy	Village Administrator	2015 - 2019	New Project
Purchase NOAA All Hazards radios	Village Administrator	Continual	New Project
Repair/replace existing weather warning sirens	Village Administrator	2018	New Project
Install lightning protection measures for the delicate water and sewer utility's telemetry system	Village Administrator	2015 - 2019	New Project
Construct a storm shelter for residents of the Anderson Mobile Home Park	Village Administrator	When funding available	New Project
Develop an emergency call list in the event of extreme temperatures	Village Administrator	2015 - 2019	New Project
Establish a cooling/heating center with a backup generator	Village Administrator	When funding available	New Project
Purchase water rescue equipment	Police Chief	2015 - 2019	New Project
Purchase ATV for emergency response on State Trail	Village Administrator	When funding available	New Project

<b>City of La Crosse</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Fix neighborhood flooding at 18 different locations within the city	City planner, engineering department, public works	2015-2019	Est. \$26,400,000
Northside flooding improvements, storm gates, dikes	City planner, engineering department, public works	2015-2019	Est. \$3,800,000
Ebner Coulee area flood control	City planner, engineering department, public works	2015-2019	Est. \$4,900,000
Fill the former Mobil Oil/Patros Steel property to above base flood elevation	City planner, engineering department, public works	2015-2019	Est. \$4,000,000
Raise USH 53 from Interstate 90 south to Livingston St. when reconstructed. This will provide additional flood protection	City planner, engineering department, public works	2015-2016	Est. \$2,000,000
Bury power lines on Ward Ave., Rose St., and Copeland St.	City planner		
Develop a snow/ice control and public information plan	City planner	2015	Annual updates afterwards
Stabilize slopes along Bliss Road	City Planner along with City Engineering Department		Completed
Inspect Bliss Road annually and take inclinometer readings	City Engineering Department and public works	Annually	

<b>City of Onalaska</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Complete a full update of the Emergency Operations Plan that was last updated in 2011	City officials in conjunction with County Emergency Management Director	2015	
Complete Hazardous Material Trainings in conjunction with Burlington Northern Railroad	City Fire Department	Annually	If not funded annually then every 2 years as funding allows
Ensure all residential and commercial buildings have identifiable house numbers	City officials	2015	
Complete and Educational Campaign that identifies emergency shelters throughout the City, strategies for "Sheltering in Place" for all severe storms/extreme temperatures, promoting standardized storm kits for vehicles, and kits for residences via newsletters, press releases, social media, pamphlets, cable access television and or mailings	City officials	2015	
Draft and implement policies for managing severe weather events for Parks & Recreation Department events and programs	Parks & Recreation Department	2015	

<b>Town of Campbell</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Drainage Channel Improvements	Town Board		
Stormwater mitigation plan and improvements	Town Board		
Levee repair	Town Board		
Develop a flood warning plan	Town Administrator		
Purchase backup generators for use in heating cooling centers	Town Administrator		
Purchase backup generators for use by police and fire	Town Fire & Police Chiefs		
Develop an educational brochure to distribute to Town residents	Town Administrator		
Develop safe rooms/storm shelters for mobile home parks	Town Board		
Develop and implement a tree management plan	Town Administrator		
Construct or retrofit an existing building for use as a heating & cooling center	Town Board		
Develop an outreach/public awareness brochure to educate residents regarding dangers and locations of assistance during extreme heat and cold periods	Town Board		
Develop a plan for temporary debris removal/storage after a disaster hits	Town Administrator		

<b>Town of Farmington</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Raise part of Herman Coulee Road	Town Chair		Est. \$12,000 - Deferred
Drainage improvements on Mickelson and H. Mickelson Roads	Town Chair		Est \$20,000 - Deferred
Purchase severe weather sirens	Town Board	2015	Est. \$35,000 - Deferred
Develop water sources in high risk areas	Town Board		Est. \$35,000 - Deferred
Draft and implement policies for managing severe weather events for Parks & Recreation Department events and programs	Parks & Recreation Department	2015	
Develop a community Wildfire protection plan	Town Board	2016	
Purchase snow removal equipment for the Mindoro Sanitary District	Mindoro Sanitary district	2015-2017	Est. \$15,000 - Deferred
Add second well to Mindoro public water system	Barry Schimke 857-3056		Est. \$150,000 - Deferred

<b>Town of Greenfield</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Purchase weather radios for residences	Town Board in conjunction with the County LEP C	Continual Program	

<b>Town of Holland</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Stormwater improvements	Kathy Dummer 608-386-2447	2015-2017	Est. \$10,000-\$25,000 - Deferred
Purchase backup generator for Town Hall	Town Chairman		Est. \$8,000 - Deferred

<b>Town of Medary</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Install emergency generator in Town Hall	Terry Houlihan 781-3344		Est. \$15,000

<b>Town of Onalaska</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Sand Creek Sediment Trap and Wetland rehabilitation in Midway	Joe Dorova/Tim Dienger 788-4958	2015-2017	Est. \$300,000
Halfway Creek Sediment Trap – near Cth XX	Joe Dorova/Tim Dienger 788-4958	2018	Est. \$500,000

<b>Town of Shelby</b>			
<b>Mitigation Action or Project</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Elevate Hanifl Road to provide dry land access during high water events	Town Administrator	2016	Deferred
Purchase a boat to provide emergency services to areas not accessible by dry land during high water events.	Town Administrator	2017	Deferred
Purchase a truck to haul water in the event a lightning strikes a water well	Town Administrator	2017	Deferred
Purchase communication equipment to coordinate water and sewer departments during storm events	Town Administrator	2016	Deferred
Purchase backup power generators for municipal water wells	Town Administrator	2016	Est. \$70,000 – Deferred
Purchase communication system for sewer lift stations and water wells	Town Administrator		Est. \$30,000 – Deferred
Purchase brush chipper to manage dead and excessively overgrown areas	Town Administrator		Est. \$35,000 - Deferred
Install Dry well (water points) locations on ponds and creeks for firefighting purposes	Town Administrator	Town Board in conjunction with the County LEPC	2015-2017 - Deferred

**La Crosse County Plan Maintenance and Adoption Action Plan**

The following table is the La Crosse County Multi-Hazards Mitigation Plan Maintenance and Adoption Action Plan. The plan maintenance and adoption projects are detailed in Chapter 5. La Crosse County’s Plan Maintenance and Adoption goal is: *To provide a continual opportunity for local officials to update, maintain and implement the La Crosse County Multi-Hazard Mitigation Plan.*

**TABLE 4-5  
La Crosse County Multi-Hazards Mitigation Plan Maintenance and Adoption Action Plan**

<b>Plan Maintenance and Adoption Projects</b>	<b>Funding Source(s)</b>	<b>Responsible Official or Organization</b>	<b>Project Timetable</b>	<b>Comments</b>
Continual monitoring of progress made toward achieving plan goals, projects and action items by the Emergency Management Coordinator	Existing County resources	County Emergency Management Director	Annually	See Chapter 5
Post disaster Multi-Hazard Mitigation Plan review and comment period for plan stakeholders	Existing County staff resources	County Emergency Management Director in cooperation with County, City, Village and Town Officials	Post disaster	See Chapter 5
Annual Multi-Hazard Mitigation Plan review and comment period for plan stakeholders	Existing County staff resources	County Emergency Management Director in cooperation with County, City, Village and Town Officials	Annually	See Chapter 5
County, City, Village, and Town plan approval by adopting resolutions	Existing County , City, Village, and Town resources	County Emergency Management Director in cooperation with County, City, Village and Town Officials	After plan modification	See Chapter 5



## **5.0 LA CROSSE COUNTY MULTI-HAZARDS MITIGATION PLAN MAINTENANCE AND ADOPTION**

### **Plan Maintenance**

Since changes across the County's landscape will always be occurring this Multi-Hazards Mitigation Plan should be monitored and amended as needed to meet these changing conditions. To accomplish this it has been determined that the County Emergency Management Coordinator should review the contents of the plan for its applicability each year during the 3<sup>rd</sup> quarter and report to the Local Emergency Planning Committee on the progress made pertaining to goals, projects and actions contained in the plan. Prior to the end of each calendar year, the County Local Emergency Planning Committee shall recommend either reaffirmation, amendment or update (rewrite) of the plan to the County Board for their action based on recommendations provided by county staff, public input and other pertinent information provided to the committee. The Disaster Mitigation Act of 2000 requires that this plan be evaluated and updated at least every five years to remain eligible for assistance.

It has also been determined that the County Local Emergency Planning Committee evaluate the plan after disasters to determine if the information, goals and actions are still appropriate in light of the given disaster. In addition, the committee shall evaluate the plan bi-annually to assess the following: are the goals and objectives addressing current or expected conditions; are the nature, magnitude, and/or type of risks changed; are current resources appropriate for implementing the plan; are there implementation problems, such as technical, political, legal, or coordination issues with other agencies; have agencies and other partners participated as proposed; and have outcomes happened as expected. When this plan is being considered for evaluation due to the annual evaluation policy or because of the post disaster evaluation policy it will be the County Emergency Management Director's responsibility to let stakeholders know through meeting notices and public announcements about the plan evaluation process and provide them with an adequate comment period if they cannot attend a plan evaluation meeting. The Disaster Mitigation Act of 2000 requires that this plan be evaluated and updated at least every five years to remain eligible for hazard mitigation grant assistance.

### **Plan Coordination**

Upon adoption of the plan by the County and other participating local units of government the County Emergency Management Director will distribute copies to key stakeholders including any additional copies needed by local governments that participated in and adopted the plan. The initial Hazard Mitigation Plan was not incorporated as well as it could have been into other planning activities. The plan was used during land use planning by some but not all municipalities. To ensure that this updated plan will be incorporated into planning activities within the county, the County Emergency Management Coordinator and the County Planner will monitor other planning activities being undertaken and see to it that any related topics, goals or projects in this plan are presented to those involved in planning activities and especially those involved in preparing county, city, village or town comprehensive plans. In addition the annual plan evaluation policy should serve as another method to ensure the information, findings, goals, actions and projects in this plan are incorporated into other planning projects and initiatives across the County. Lastly the County Emergency Management Director will annually send out letters to all participating local units of government, county department directors and all new county board supervisors reminding them of the existing plan and that the plan should be incorporated into any new or revised comprehensive plan, ordinance or code..

### **Plan Approval Process**

The adoption of this plan by the County and any participating local government certifies to program and grant administrators from FEMA and Wisconsin Emergency Management that the Plan's findings, goals and projects have been thoroughly considered and they have a desire to take planned actions to reduce losses from future hazard events. In exchange for this local commitment to plan to reduce future losses the Federal Emergency Management Agency and Wisconsin Emergency Management Agency will designate the County and other participating local governments that adopted the plan eligible for their Hazard Mitigation Grant Programs. The County and other participating local units of government are to adopt this plan by appropriate public meeting notice and by resolution.

**Adoption Resolutions**

The following is a list of the local units of government in the County. Those local units of government that have adopted this plan are indicated with a check mark. The adoption resolutions from each local government follow this list.

Municipality	Adopted 2008-2012 Plan	Adopted 2015 - 2019 Plan
La Crosse County	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Bangor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Barre	<input type="checkbox"/>	<input type="checkbox"/>
Town of Burns	<input type="checkbox"/>	<input type="checkbox"/>
Town of Campbell	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Farmington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Greenfield	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Hamilton	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Holland	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Medary	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Municipality	Adopted 2008-2012 Plan	Adopted 2015 - 2019 Plan
Town of Onalaska	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Shelby	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Town of Washington	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Village of Bangor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Village of Holmen	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Village of Rockland	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Village of West Salem	<input checked="" type="checkbox"/>	<input type="checkbox"/>
City of La Crosse	<input checked="" type="checkbox"/>	<input type="checkbox"/>
City of Onalaska	<input checked="" type="checkbox"/>	<input type="checkbox"/>



**APPENDIX A**  
**RISK ASSESSMENT SURVEY**

The following is the email and the survey sent out to solicit information regarding risks to municipalities by the various natural hazards.

MEMORANDUM

Date: April 17, 2012  
To: All chief elected officials of local governments of La Crosse County  
All EMS, First Responders, Fire and Police Departments serving La Crosse County  
From: Keith Butler, La Crosse County Emergency Management Director  
Subject: Multi-Hazards Mitigation Information

La Crosse County is in the process of updating the La Crosse County All Natural Hazards Mitigation Plan 2008-2012. The County applied for and received a grant from Wisconsin Emergency Management to update this plan. The County has contracted with the Mississippi River Regional Planning Commission for the preparation of the update. The All Natural Hazards Mitigation Plan is a plan that describes the hazards that occur in La Crosse County and lists strategies, goals and projects, which will eliminate or minimize the loss of life and damages. The plan covers all natural hazards, i.e. tornadoes, hail, severe winds, flooding, extreme heat or cold, drought, snow storms, etc.

In order to get better idea of how specific natural hazards affect your jurisdiction we are asking for your assistance. Enclosed you will find a survey, please complete this survey and return it before May 15, 2012.

Thank you for your time in this matter.

**Keith Butler, Director  
Emergency Management  
La Crosse County  
April 17, 2012**

**LA CROSSE COUNTY NATURAL HAZARD RISK ASSESSMENT SURVEY**

From your experience living in your community and the current societal and environmental conditions please check one of the three columns titled Low, Medium or High Risk Rating to the right of each natural hazard listed in the far left column. Your check mark should be based on your opinion of that natural hazard's probable threat to your community's health and public safety over the coming five years. Each of the Hazards listed is to receive only one check mark. For example if you check a medium risk rating for Lightning Storms this would be interpreted to mean that you think that over the next five years Lighting Storms will probably have a medium harmful affect on your community in comparison to the other hazards listed. The five year period was chosen because that is how often La Crosse County must update their Multi-Hazards Mitigation Plan. This survey is one of the methods La Crosse County is using to receive public input into the plan. The survey information you and others provide is advisory and will not by itself set future public policy on how to deal with natural hazards.

<b>NATURAL HAZARDS - Each natural hazard should receive either a low, medium, or high risk rating check mark.</b>	<b>Low Risk Rating</b> ✓ A hazard risk rating of low means that in your opinion this hazard probably will have the least harmful affect on health and public safety in your community over the next five years in comparison to the other hazards listed in column one.	<b>Medium Risk Rating</b> ✓ A hazard risk rating of medium means that in your opinion this hazard will probably have a medium or average harmful affect on health and public safety in your community over the next five years in comparison to the other hazards listed in column one.	<b>High Risk Rating</b> ✓ A hazard risk rating of high means that in your opinion this hazard will probably have the highest or greatest harmful affect on health and public safety in your community over the next five years in comparison to the other hazards listed in column one.
Hail Storms			
Lightning Storms			
Thunderstorms			
Tornado/High Winds			
Flash Flooding			
Riverine Flooding			
Lake Flooding			
Stormwater Flooding			
Dam Failure Flooding			
Forest Fires			
Wildland Fires			
Coastal Hazards			
Heavy Snow Storm			
Ice Storm			
Blizzard			
Extreme Cold			
Earthquake			
Extreme Heat			
Agricultural			
Drought			
Fog			
Landslide			
Subsidence			
Pandemic Flu			

Do you have any suggestions on projects or programs that may be undertaken by your local unit of government, the County or others that would reduce future losses and the threat to health and public safety from any of the above natural hazards? Please describe your suggestion(s) here or on a separate sheet of paper.

\_\_\_\_\_

I am a resident of the (circle one) Town / Village / City of \_\_\_\_\_

Please return this survey to Keith Butler La Crosse County Emergency Management Director, La Crosse County Emergency Management, 333 Vine Street, La Crosse, Wisconsin 54601 By May 15, 2012.

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**APPENDIX B**  
**HAZARD MITIGATION PROJECTS SURVEY**

**LA CROSSE COUNTY MULTI-HAZARDS MITIGATION PROJECT NEED SURVEY**

La Crosse County is updating the La Crosse County Multi-Hazards Mitigation Plan 2008-2012. A key part of this plan is the identification of policies, programs and projects from throughout the county that will reduce losses from future natural hazards. Please be inclusive and generous in your ideas for policies, programs, or projects that you think are needed for your local government or organization. Listing a project in this survey will be interpreted as something needed to meet a local need and not as a commitment to undertake it. Projects you list may possibly become eligible for funding from Federal and State grant programs.

1. Does your local unit of government or organization you represent have any flooding, storm water drainage or dam hazard mitigation projects? If so, please describe below: (Examples of this these types of projects could include: road raising (dry land access) and/or repair, bridge improvements, culvert improvements, drainage channel improvements, elevation of buildings, flood proofing of buildings, floodplain mapping, dam hydraulic shadow mapping, new river gages, flood warning plans, evacuation plans, storm water, water line and sewer line improvements, and dam inspection or maintenance projects.)

Proposed flooding, storm water drainage, or dam hazard mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

2. Does your local unit of government or organization you represent have any hail, thunderstorm, lightning and fog hazard mitigation projects? If so, describe below. (Examples of these types of projects could include: Improving protection of warning and communication equipment, burying of power and communication lines, improvements to public early warning systems and plans, improvements to roadways and waterways that provide aid to visibility.)

Proposed hail, thunderstorm, lightning and fog hazard mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

3. Does your local unit of government or organization you represent have any tornado, and high wind mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: public warning communication systems and networks i.e. sirens, telecommunications, radios, weather radios, weather spotters etc.; storm shelters-particularly for mobile home courts and campgrounds; projects that strengthen public and private structures i.e. structural bracing, straps, anchor bolts, using laminated or impact resistant glass; concrete safe rooms for mobile home parks, fairgrounds and shopping areas; protection of permanent and temporary debris disposal sites by fencing or relocation; burying power and telecommunication lines; purchase power supply backup power resources-generators.)

Proposed tornado and high wind hazard mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

4. Does your local unit of government or organization you represent have any extreme cold and heat mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: local governments, civic and social service organizations can organize outreach activities to vulnerable residents during periods of extreme temperature; local governments, civic and social service organizations can work together to offer special arrangements for paying utility bills of vulnerable residents during times of extreme temperatures; local governments and civic and social service organizations can establish heating and cooling centers for vulnerable residents.)

Proposed extreme cold and heat event mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

5. Does your local unit of government or organization you represent have any forest and wildfire hazard mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: promote use of non-combustible roof covering, fire safe construction materials and techniques; public education of smoking hazards and risks of recreational fires; use of zoning and subdivision regulations that create defensible space or buffer zones between structures and woodlands or grasslands; select logging, pruning and clearing of vegetation; create fire breaks; planting fire resistant vegetation; having adequate water supply locations, tanker trucks and pumping equipment.)

Proposed forest and wildfire mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

6. Does your local unit of government or organization you represent have any heavy snow, ice or blizzard hazard mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: promote traveler emergency preparedness in education programs on severe weather hazards; burying electric and telecommunication lines underground; joint acquisition of vehicles and equipment among local governments to respond to severe winter storms; use of snow fences, including planting of trees to limit blowing and drifting of snow over roadways and to protect critical facilities.)

Proposed heavy snow, ice or blizzard mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			



7. Does your local unit of government or organization you represent have any earthquake, landslide or subsidence hazard mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: mapping and educating the public about areas in the county vulnerable to landslides and subsidence; identify and warn public about areas where falling rock from hillsides or cliffs can cause damage or harm; prepare zoning, subdivision, and site construction ordinances that set land use, development density, setback and slope construction standards.)

Proposed earthquake, landslide and subsidence mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

8. Does your local unit of government or organization you represent have any agricultural or drought hazard mitigation projects you would like to undertake? If so, describe below. (Examples of these types of projects could include: encouraging the purchase of crop insurance to preserve economic stability for farmers during drought; maintaining adequate municipal water storage supplies to provide water for human consumption over an extended period during times of drought; pass local government water emergency control ordinances to limit water use; construction of reservoirs for use during times of drought for agricultural use; purchasing tank trucks and pumping equipment for conveyance of water to special impact areas.)

Proposed agricultural or drought hazard mitigation projects your local government or organization would like to seriously consider.	Estimated Project Cost if Known?	Proposed Project Beginning & Ending Date if Known	Key Project Contact Person & Telephone Number
a.			
b.			
c.			
d.			

**Thank you for completing the survey. Please return it by May 15, 2012 to Keith Butler, Emergency Management Director**

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**APPENDIX C**

**PUBLIC HEARING NOTICE,  
LOCAL EMERGENCY PLANNING COMMITTEE AGENDA  
&  
MISSISSIPPI RIVER REGIONAL PLANNING COMMISSION AGENDA**

JB 6/99

# Affidavit of Publication

STATE OF WISCONSIN } ss.  
La Crosse County

Lisa Zobeck, being duly sworn, says that she is the principal clerk of the LA CROSSE TRIBUNE, a public daily newspaper of general circulation, published in the City of La Crosse, in the county and state aforesaid, and that the notice of which the annexed is printed copy taken from the paper in which the same was published, was inserted and published in the said newspaper on the

**PUBLIC HEARING**  
La Crosse County Emergency Management will hold a public information meeting on the La Crosse County All Hazards Mitigation Plan on Monday, May 12, 2014 at 6:00 pm in the County Administrative Center Building, room 3220, 400 4th Street North, La Crosse, WI. The purpose of this public hearing is review of the mandatory 5-year plan update. The plan was prepared in accordance with the Federal Disaster Mitigation Act of 2000. By developing this five-part plan the County, towns, cities, and villages can become eligible for FEMA's Hazard Mitigation Grant programs. Prior to public comments a brief presentation will be made on the process used to develop the plan, hazard risk assessment research that was conducted, and on some projects that have been identified to reduce future damages and losses from hazards. For those individuals who cannot attend this meeting and want to provide written comments, please submit them by May 7, 2014 to: Keith Butler, La Crosse County Emergency Management Coordinator, Courthouse and Law Enforcement Center, 333 Vine Street, La Crosse, WI 54601-3295. 5/2/7 30259158 WNAJLP

2nd day of May 2014

and thereafter on the following dates, to wit:

5-7-14  
\_\_\_\_\_  
\_\_\_\_\_

being at least once in each week for 2 successive week(s).

Lisa Zobeck  
Lisa Zobeck

Sworn to and subscribed before me this 9 day of May 2014



Suel Anderson  
Notary Public, La Crosse County, Wisconsin

My Commission as Notary Public will expire on the

10th day of January 2016



La Crosse Tribune, Winona Daily News, Houston Co News, Westby Times, Vernon County Broadcaster, Coulee News, Tomah Journal/Monitor Herald, Jackson County Chronicle, Onalaska Courier Life, Tri-County Foxy Publications

**LA CROSSE COUNTY NOTICE OF MEETING**

**COMMITTEE OR BOARD:** LA CROSSE COUNTY LOCAL EMERGENCY PLANNING COMMITTEE

**DATE OF MEETING:** Wednesday, March 21, 2012  
(Regularly scheduled meeting)

**MEETING PLACE:** La Crosse County Law Enforcement Center  
333 Vine Street Room 1615  
La Crosse, WI 54601

**TIME OF MEETING:** 9:00 am

**PURPOSE OF MEETING:**

1. Call to Order/Roll Call
2. Approve Meeting Minutes for January 18, 2012
3. Hazard Mitigation Plan Update
4. Lessons Learned Video for LEPC's
5. Hazmat Team Update
6. Public Comments
7. Communications from Committee Members
8. Future Agenda Items

**NOTICES FAXED/MAILED TO:**

**NEWS MEDIA**

La Crosse Tribune  
Coulee News  
WKBH  
WLSU  
WKBT-TV  
WIZM  
WLFN  
WXOW-TV  
Onalaska Community Life  
Holmen Courier

**COUNTY DEPARTMENTS**

County Board Chair  
County Administrator  
County Clerk  
Facilities

**OTHER**

Cheryl Hancock, Am Red Cross  
Jean Porter, (District Office)  
Bob Ritger, Region 4 Consortia  
Jamie Harmon-Abbott, Am Red Cross  
Lisa Olson-McDonald, Regional Director  
Steve Thinnes, Trane Company  
Brenda Hanson, La X County Health Education Department

**COMMITTEE MEMBERS**

Pat Smith, Chair  
Jay Loeffler  
Marc Schultz, Vice-Chair  
Mike Horstman  
Phil Niemer  
Sue Kunz  
Jennifer Shilling  
Vicki Burke  
Lois Losby  
Keith Butler  
Tom Wright  
Franz Fredricks  
Shari Vanderbush  
Gregg Cleveland  
Keith Carlson

**MEMBERS:** If unable to attend, call the Emergency Management Office at 608-789-4811.

**PERSONS WITH DISABILITY:** If you need accommodation to attend this meeting, please contact: Emergency Management, 608-789-4811 as soon as possible.

**PUBLIC ACCESS TO BUILDING:** The south entrance to the Administrative Center will be the only door to the building open after 5:00 p.m.

**DATE NOTICE FAXED/MAILED/EMAILED AND POSTED:** March 14, 2012



**MISSISSIPPI RIVER  
REGIONAL PLANNING COMMISSION**

1707 Main Street, Suite 435  
La Crosse, WI 54601  
Phone: (608) 785-9396  
Fax: (608) 785-9394  
Email: [plan@mrrpc.com](mailto:plan@mrrpc.com)  
Website: [mrrpc.com](http://mrrpc.com)

Eugene Savage, Black River Falls, WI  
Chairman  
Margaret Baecker Independence, WI  
Vice Chairman  
Vicki Burke, Onalaska, WI  
Secretary & Treasurer  
Greg Flogstad, Onalaska, WI  
Director

**MISSISSIPPI RIVER REGIONAL PLANNING COMMISSION**  
Bimonthly Meeting Notice and Agenda, 10:00 AM, Wednesday, December 12, 2012  
Best Western River Front Hotel – River Jacks, 1835 Rose Street, La Crosse, Wisconsin

< BIMONTHLY MEETING AGENDA >

1. Roll call and guest introductions
2. Decision on October 10, 2012 Bimonthly Meeting Minutes
3. Decision on Treasurer's Report: (a) October and November 2012 Account Balance, Revenue and Expense Reports. (b) Revolving Loan Fund Reports: (1) Business Capital Fund, (2) CMV Growth Fund (3) La Crosse County Loan Fund (4) Monroe County Loan Fund. VB/GF/BL
4. Discussion on forest inventory for sustainable solid biofuel use and Kickapoo Valley Biofuel and Wood Product Feasibility Study. GF
5. Report on the three route Scenic Mississippi Regional Transit bus service running in Crawford, Vernon and La Crosse Counties. PF
6. Decision on 2013 MRRPC and Wisconsin DOT Annual Work Program
7. Decision on MRRPC's policy and/or disclaimer statement for disseminating Economic Modeling Services Inc. (EMS) reports. GF
8. Decision on Contract with UW Madison Center For Integrated Agricultural Systems to put on Networking - Supply Chain Conference BL
9. Commissioners questions and comments on the following projects listed in the written staff report:
  - a. Crawford County Shoreland Floodplain Zoning Ordinance
  - b. Equipment and Metal Manufacturing Industry Cluster Initiative
  - c. Food Resource and Agribusiness Network Industry Cluster
  - d. Village of La Farge Economic and Recreation Development Plan
  - e. Pepin County Comprehensive Plan
  - f. City of Praire Du Chien and Crawford County Recreation Plans
  - g. Crawford, Jackson, La Crosse, and Vernon Counties Multi-hazard Mitigation Plans
  - h. Great Lakes Inter-Tribal Council Request for tribe representation on all Wisconsin regional planning commissions.
  - i. Regionalizing Business Revolving Loan Funds Initiative.
  - j. State Of Wisconsin Regionalizing Community Development Block Grant (CDBG) Housing Funds.
  - k. Town of Arcadia and Trempealeau County Comprehensive Plan Contract.
  - l. Town of Holland (La Crosse County) Town Plan contract for implementation assistance.

<AGENDA CONTINUED>

- m. Pierce, Pepin, Trempealeau and Monroe County Communication Interoperability Plans.
  - n. Jackson County CDBG Public Facilities Grant for \$400,000 to serve Badger Mining Corp operations \$86 million expansion in Merrillan and Taylor to create 40 and retain 157 jobs.
  - o. WEDC forgivable loan of \$500,000 to the Bergquist Company for 202 jobs retained, 45 created and \$10 million manufacturing line expansion.
  - p. Fort McCoy Joint Land Use Compatibility Study Update. BL
  - q. Wisconsin Regional Planning Commissions consolidation of services proposal for State DOA budget consideration.
  - r. Safe Routes to School Coordinator Position and Funding Status on Projects in Spring Valley, Westby and Viroqua.
10. (a) Old Business (b) New Business
11. Adjourn

**Mississippi River Regional Planning Commission  
Commissioners**

Buffalo County	La Crosse County	Pierce County
John Schlesselman	Vicki Burke	Richard Purdy
James Scholmeier	James Ehrsam	William Schroeder
Kathleen Vinehout	Tara Johnson	James Ross
Crawford County	Monroe County	Trempealeau County
Greg Russell	Apmnt. Pending	Margaret Baecker
Gerald Krachey	James Kuhn	Ernest Vold
Ron Leys	Cedric Schnitzler	Phillip Borreson
Jackson County	Pepin County	Vernon County
Ron Carney	Bruce Peterson	Apmnt. Pending
James Christenson	Mike Murray	Jo Ann Nickelatti
Eugene Savage	David Smith	Nancy Jaekel

**Staff**

Dave Bonifas, Community Development Planner  
Barb Buros, Administrative Assistant  
Peter Fletcher, Transportation Planner  
Greg Flogstad, Director  
Bryan Law, Economic Development Planner

*A Nine County Economic Development District Providing Assistance to Local Governments*

- Land Use Planning ▪ Zoning and Subdivision Ordinances ▪ Transportation Planning ▪ Economic Development Planning
- GIS Mapping ▪ Recreation Planning ▪ Revolving Loan Fund Administration ▪ Grant Writing ▪ Socioeconomic Data Dissemination
- Assist Local Interests in Responding to State and Federal Programs ▪ Advisory Service on Local Planning Issues
- Coordinating Agency for Programs and Activities ▪ Public Advocacy on Issues Affecting Our Region