AMENDED

VILLAGE OF NEW GLARUS - VILLAGE BOARD PROCEEDINGS REGULAR MEETING
Village Hall Board Room
319 2nd Street New Glarus, WI
Zoom Meeting Link: https://us02web.zoom.us/j/88616064309
5/3/2023 7:00 P.M.

7:00 P.M. Regular Meeting	Page #
1. Call to Order – Please Silence All Cell Phones	
2. Approval of agenda	
3. Public appearances and citizen comments on items not listed on this agenda. [Items will not be debated or acted upon at this meeting but will be referred to the proper staff/committee if action is required.] – *Please keep comments to 3 minutes*	
4. Approval of Consent Agenda:	
A. Approval of Minutes of 4/18/23 Regular Meeting	4
B. Approval of Claims	7
5. New Business	
A. Consideration/Discussion: Village Board Trustee Appointment	11
B. Consideration/Discussion: Resolution 23-12 for Appointment of Full Time Journey Lineworker	12
C. Consideration/Discussion: Façade Improvement Grant Budget & Award Maximum	13
D. Consideration/Discussion: Façade Improvement Grant Application for 500 1st St	14
E. Consideration/Discussion: Façade Improvement Grant Application for 17 6th Ave	27
F. Consideration/Discussion: Façade Improvement Grant Application for 18 7th Ave	33
G. Consideration/Discussion: Resolution 23-14 Adopting the Updated Green County Hazard Mitigation Plan	39
6. Parks and Recreation	
7. Public Works and Safety	
8. Personnel and Finance	
A. Consideration/Discussion: Resolution 23-13 for Wage Increases for Line Foreman, Journey Lineworker, and Water Operator	231
9. President's Report	
10. Announcement: The Village Board Will Adjourn into Closed Session Pursuant to Wisconsin State Statute 19.85(1)(e) and (g): Deliberating or negotiating the purchasing of public properties, the investing of public funds, or conducting other specified public business, whenever competitive or bargaining reasons require a closed session and conferring with legal counsel for the governmental body who is rendering oral or written advice concerning strategy to be adopted by the body with respect to litigation in which it is or is likely to become involved. [Genthe Easement]	
11. Adjourn into Closed Session	
12. Return to Open Session for Possible Action on Closed Session Item	
13. Adjournment	

Roger Truttmann, President

AGENDA POSTED: N.G. Village Hall 5/2/23
N.G. Post Office 5/2/23
Bank of New Glarus 5/2/23

Kelsey A. Jenson, Clerk

PERSONS REQUIRING ADDITIONAL SERVICES TO PARTICIPATE IN A PUBLIC MEETING MAY CONTACT THE VILLAGE CLERK FOR ASSISTANCE AT 527-2510

Village Board Meeting Notes

May 3, 2023

Consent Agenda:

Approval of Minutes of 4/18 Regular meeting: The minutes are included in the packet for consideration.

Approval of Claims: The claims lists are included in your packet and include: ACH for payroll expenses, retirement, and wire for monthly power bill - totaling $166,564.08; payroll vouchers 17174 to 17215 totaling $40,617.03; and checks 41951 to 41982 totaling $135,536.86.

New Business:

Consideration/Discussion: Village Board Appointment: The Village received one letter of interest from Gof Thomson. His letter is included in the agenda packet.

Consideration/Discussion: Resolution 23-12 for Appointment of Full Time Journey Lineworker: Village staff offered the Journey Lineworker position to William Kosmeder and he has accepted. This resolution approves his appointment. Bill's first day will be May 30, 2023.

Consideration/Discussion: Façade Improvement Grant Budget & Award Maximum: A their April 24, 2023 meeting, the Community Development Authority recommended increasing the award Façade Improvement Grant maximum award from $5,000 to $6,000 and increasing the annual grant budget from $20,000 to $40,000. A memo with more information is included in the agenda packet. Staff recommend approving the increases to the grant award maximum and annual budget.

Consideration/Discussion: Façade Improvement Grant Application for 500 1st St: The applicant is proposing to replace 8 windows, install new soffit/fascia on the back of the building, and install LP panel to lower foundation to repair stucco, and stain the façade. The total project cost is $10,650. The applicant would be eligible for a $5,000 grant, or $5,325 if the increase to the grant maximum is approved. The Community Development Authority recommended approval at their April 24, 2023 meeting.

Consideration/Discussion: Façade Improvement Grant Application for 17 6th Ave: The applicant is proposing to pressure wash, repair exterior, and paint/restain exterior building and woodwork. The total project cost is $8,735. The applicant would be eligible for a $4,367.50 grant. The Community Development Authority recommended approval at their April 24, 2023 meeting.

Consideration/Discussion: Façade Improvement Grant Application for 18 7th Ave: The applicant is proposing to pressure wash, repair exterior wood beams and trellis work, and apply preservative to wood siding and trim. The total project cost is $2,100. The applicant would be eligible for a $1,050 grant. The Community Development Authority recommended approval at their April 24, 2023 meeting.

Consideration/Discussion: Resolution 23-14 Adopting the Updated Green County Hazard Mitigation Plan: Green County Emergency Management recently completed the Green County Hazard Mitigation Plan. The Plan has been reviewed and approved by the Wisconsin Emergency Management (WEM) and the Federal Emergency Management Agency (FEMA). This resolution would approve adopting the Green County Hazard Mitigation Plan. Staff recommend approval.

Personnel and Finance:

Consideration/Discussion: Resolution 23-13 for Wage Increases for Line Foreman, Journey Lineworker, and Water Operator: The Finance/Personnel Committee reviewed increasing wages for the Journey Lineworker at their March 29, 2023 meeting and the Line Foreman and Water Operator at their April 18, 2023 meeting. The Journey Lineworker wage was increased in order to successfully recruit a new Lineworker. That position was advertised at $37-$44/hour. The Line Foreman supervises the Lineworker, and therefore the Committee recommended increasing that position's wage to $45.00/hour. Additionally, the Committee discussed increasing the Water Operator's wage because that position assists with Electric Utility tasks. The Committee recommended increasing the Water Operator wage to $33.65/hour. Staff recommend approving the resolution for these wage increases.

VILLAGE BOARD PROCEEDINGS
VILLAGE OF NEW GLARUS
4/18/23

REGULAR MEETING-CALL TO ORDER: President Truttmann called the regular meeting to order at 7:01 p.m.
PRESENT: Chuck Phillipson, Michael Bell, Mike Marty, Larry Stuessy, Peggy Kruse and Roger Truttmann.

APPROVAL OF AGENDA: Motion by Chuck Phillipson, second by Mike Marty, to approve the 4.18.23 agenda. Motion carried (6-0).

ALSO PRESENT: Nic Mink, Tom and Nancy Marty, Shelly Johnson, Scott Hook, Harry P., Tory Hutchison, Gof Thomson, M.M., Bekah Stauffacher (NG Chamber), Amy Trumble (Library Director), Joe Cockroft (Public Works Director), Lauren Freeman (Village Administrator), Chief Jeff Sturdevant (Police Chief), Kelsey Jenson (Clerk-Treasurer)

PUBLIC APPEARANCES AND CITIZEN COMMENTS: None.

CONSENT AGENDA: Motion by Michael Bell for approval of the consent agenda, second by Peggy Kruse. Motion carried (6-0).

APPROVAL OF MINUTES OF 4/6/23 Regular Meeting

APPROVAL OF CLAIMS: The claims lists were presented to the Board and include: ACH for payroll expenses, March credit card, and May health insurance; JE for utilities; and e-check for May life insurance - totaling $70,004.14; payroll vouchers 17149 to 17173 totaling $34,804.46; and checks 41904 to 41950 totaling $43,577.12.

MARCH 2023 BUILDING INSPECTION REPORT

MARCH 2023 POLICE REPORT

NEW BUSINESS

Presentation: Update on New Glarus Hotel Development Project: Developer Nic Mink gave an update on the New Glarus Hotel project.

Consideration/Discussion: Approval of Operator License – Helen Lineberger, David Hook & Rebecca Perkins: Motion by Peggy Kruse to approve operator licenses for Helen Lineberger, David Hook, and Rebecca Perkins, second by Larry Stuessy. Motion carried (6-0).

Consideration/Discussion: Denial of Operator License – Kyle Ray: License denied at Committee level based on recommendation from Police Chief. Motion by Peggy Kruse to deny operator license, second by Mike Marty. Motion carried (6-0).

Consideration/Discussion: Event Permit - Bike Rodeo, May 20, 2023: Motion by Michael Bell to approve event permit for Bike Rodeo, second by Mike Marty. Motion carried (6-0).

Consideration/Discussion: Event Permit - Walk for Water, May 20, 2023: Motion by Mike Marty, to approve event permit for Walk for Water, second by Larry Stuessy. Motion carried (6-0).

Consideration/Discussion: Event Permit - Beer, Bacon & Cheese Festival, June 9 & 10, 2023 (with Temporary Class B Beer License): Motion by Mike Marty to approve even permit for Beer, Bacon, and Cheese Festival/Polkafest, second by Michael Bell. Motion carried (6-0).

Consideration/Discussion: Street Use Permit – New Glarus High School Graduation Parade, June 4, 2023: Motion by Peggy Kruse to approve street use permit for NG High School graduation parade, second by Larry Stuessy. Motion carried (6-0).

Consideration/Discussion: Street Use Permit - American Legion Memorial Day Parade, May 29, 2023: Motion by Mike Marty to approve street use permit for American Legion Memorial Day Parade on May 29, second by Michael Bell. Motion carried (6-0).

Consideration/Discussion: Façade Improvement Grant Guidelines Revision: Motion by Mike Marty to approve the changes to the Façade Improvement Grant guidelines as presented, second by Chuck Phillipson. Motion carried (6-0).

Consideration/Discussion: Resolution 23-06 Reserve Fund/Debt Policy: Motion by Peggy Kruse to approve Reserve Fund Policy, second by Chuck Phillipson. Motion carried (6-0).

Consideration/Discussion: Resolution 23-07 Amending Resolution R22-28 Budget Adoption & Tax Levy: Motion by Chuck Phillipson to approve R23-07, second by Mike Marty. Motion carried (6-0).

Consideration/Discussion: Purchase of “Kittleson Hill” for $150,000 from “Only in Wisconsin Giving Inc.”: Motion by Mike Marty to approve buying "Kittleson Hill" (2.16 acres as shown in CSM No. 5571) from "Only in Wisconsin Giving Inc." for $150,000.00, including monies donated by New Glarus Cares Community Foundation, *if* grant and donations are received in the amount of $150,000, second by Larry Stuessy. Motion carried (6-0).

Consideration/Discussion: DNR Knowles-Nelson Stewardship Grant Application and Approval of Grant Resolution 23-11: Motion by Peggy Kruse to approve the grant application for the DNR Knowles-Nelson Stewardship Grant Application and Approval of Grant Resolution 23-11 for the Kittleson property, second by Mike Marty. Motion carried (6-0).

Consideration/Discussion: Resolution 23-09 Approving Reciprocal Grant Match with the Town of New Glarus: Motion by Mike Marty to approve R23-09, striking “Reciprocal” in the resolution title and striking “if the Town provides a reciprocal match towards the Village’s park acquisition project” in the resolution body, second by Michael Bell. Motion carried (6-0).

Consideration/Discussion: Resolution 23-10 Recommending Village of New Glarus Buy Local for Kittleson Hill Materials: Motion by Mike Marty to approve R23-10 Recommending Village of New Glarus Buy Local for Kittleson Hill Materials and buy local meaning using resources sourced from the State of Wisconsin, second by Chuck Phillipson. Motion carried (6-0).

Consideration/Discussion: ARPA Projects: Motion by Mike Marty to approve ARPA projects outlined in the proposed allocation section of the memorandum, second by Peggy Kruse. Motion carried (6-0).

PARKS AND RECREATION

Consideration/Discussion: Resolution 23-08 Amending the Village of New Glarus Comprehensive Outdoor Recreation Plan: Motion by Mike Marty to approve R23-08 Amending the Village of New Glarus Comprehensive Outdoor Recreation Plan, second by Michael Bell. Motion carried (6-0).

PUBLIC WORKS AND SAFETY

Consideration/Discussion: Consideration/Discussion: Special Event Permit Police Fee: Motion by Chuck Phillipson to increase the Special Event Permit Police Fee from $45 to $55 as recommended by staff, second by Mike Marty. Motion carried (4-2).

PERSONNEL AND FINANCE: None.

PRESIDENT'S REPORT

2023 Arbor Day Proclamation: Motion by Chuck Phillipson to approve the 2023 Arbor Day Proclamation, second by Larry Stuessy. Motion carried (6-0).

Committee Appointments: Motion by Mike Marty to approve adding Larry Stuessy to the Library Board, Park and Recreation Committee, and Historical Preservation, second by Chuck Phillipson. Motion carried (6-0).

Rescheduling May 2 Village Board Meeting: Motion by Mike Marty to move the May 2 Board meeting to May 3, second by Michael Bell. Motion carried (6-0).

– Kelsey Jenson,
Clerk-Treasurer

**For more details on agenda items, please visit newglarusvillage.com to view the meeting agenda packet. A recording of the meeting is also available on the Village of New Glarus YouTube Channel."*

Report Criteria:
Report type: Summary
Check.Check Issue Date = 05/04/2023

GL Period	Check Issue Date	Check Number	Vendor Number	Payee	Amount
05/23	05/04/2023	41951	1165	BAKER & TAYLOR BOOKS	439.83
05/23	05/04/2023	41952	4481	BAYCOM INC.	5,029.00
05/23	05/04/2023	41953	4210	BJOIN LIMESTONE INC	147.19
05/23	05/04/2023	41954	4395	BOLEY TREE & LANDSCAPE CARE	20,985.00
05/23	05/04/2023	41955	1275	BORDER STATES ELECTRIC SUP	504.97
05/23	05/04/2023	41956	1355	BYTEC RESOURCE MGMT INC	6,388.75
05/23	05/04/2023	41957	4078	CLARK ELECTRIC	56.13
05/23	05/04/2023	41958	4422	CLIFTON LARSON ALLEN LLP	23,310.00
05/23	05/04/2023	41959	4332	COMPUTER KNOW HOW LLC	2,000.00
05/23	05/04/2023	41960	1555	CULLIGAN WATER CONDITIONING IN	43.50
05/23	05/04/2023	41961	1590	DELTA DENTAL	1,473.13
05/23	05/04/2023	41962	1605	DEMCO INC.	173.30
05/23	05/04/2023	41963	5299	DEPARTMENT OF ADMINISTRATION	2,720.16
05/23	05/04/2023	41964	5460	EMPLOYEE BENEFITS CORPORATION	100.00
05/23	05/04/2023	41965	1815	GALLS	28.56
05/23	05/04/2023	41966	1900	GORDON FLESCH CO INC	99.59
05/23	05/04/2023	41967	1925	GREEN CTY HIGHWAY DEPT	8,591.64
05/23	05/04/2023	41968	1930	GREEN CTY WASTE MGMT	3,308.91
05/23	05/04/2023	41969	6181	GREEN IGNITE	197.88
05/23	05/04/2023	41970	6197	JENSON, KELSEY	149.99
05/23	05/04/2023	41971	6014	LANTECH SERVICES LLC	1,402.50
05/23	05/04/2023	41972	2480	MEUW	435.00
05/23	05/04/2023	41973	2515	MIDWEST TAPE	609.29
05/23	05/04/2023	41974	5419	POCKET PRESS INC.	108.90
05/23	05/04/2023	41975	2945	PUBLIC SERVICE COMMISSION	176.54
05/23	05/04/2023	41976	3075	ROY'S MARKET INC	117.11
05/23	05/04/2023	41977	3250	STRAND ASSOCIATES INC	54,692.80
05/23	05/04/2023	41978	3255	STREICHER'S	1,057.15
05/23	05/04/2023	41979	4065	STURDEVANT, JEFF	12.85
05/23	05/04/2023	41980	6127	SYMDON AUTO	340.50
05/23	05/04/2023	41981	5963	TOP PACK DEFENSE LLC	775.00
05/23	05/04/2023	41982	5606	VERMEER WISCONSIN	61.69
Grand Totals:					135,536.86

M = Manual Check, V = Void Check

Report Criteria:
Check.Check Issue Date = 05/04/2023

GL Invoice Acct	Amt
Total 10:	64,910.55
Total 22:	5.23
Total 25:	1,485.50
Total 40:	52,791.81
Total 45:	83.36
Total 50:	4,998.64
Total 60:	7,952.86
Total 70:	3,308.91
Grand Totals:	135,536.86

VILLAGE OF NEW GLARUS-CLAIMS PRESENTED - 5/3/2023

CHECK #	PAYEE	DIST.	AMOUNT
ACH	941 Tax	payroll	11,697.37
ACH	WI Withholding	payroll	1,736.57
ACH	Great-West Retirement	deferred comp-pre tax	701.00
ACH	Great-West Retirement	deferred comp-post tax	150.00
WIRE	WPPI Power	power bill	139,282.02
ACH	WRS Monthly Remittance	Retirement	12,997.12
	Sub-total		**166,564.08**
Payroll - paid 4/21/2023			
17174	Kelsey Jenson	Clerk	1,355.90
17175	Deanna Young	Deputy Clerk	1,342.10
17176	Lauren Freeman	Administrator	2,176.18
17177	Mark Binger	PD	1,060.24
17178	Chanse Kaczmarski	PD	512.39
17179	Alex Brey	PD	2,501.20
17180	Hunter Krohn	PD	1,845.20
17181	Jeff Sturdevant	PD	2,734.35
17182	Molly Hultine	PD	267.02
17183	Ann Lahey	PD	604.57
17184	Joe Cockroft	PW	1,979.00
17185	Charles Loeffelholz	PW	2,018.63
17186	Kenneth Wolfe	PW	1,193.42
17187	Aaron Funseth	Water Treatment Plant	1,869.62
17188	Jason Borth	Utility	2,215.45
17189	Kevin Funseth	Utility	2,574.95
17190	Beth Heller	Utility	1,202.82
17191	Erica Loeffelholtz	Library	1,044.38
17192	Peggy Hammerly	Library	73.48
17193	Brooke Mathews	Library	946.05
17194	Alayna Lewis	Library	89.80
17195	Amy Trumble	Library	1,259.31
17196	Julie Hawkins	Library	490.16
17197	Amalia Morrison	Library	73.48
17198	Henry Janisch	Trustee	711.09
17199	Peggy Kruse	Trustee	1,237.49
17200	Chuch Phillipson	Trustee	1,126.67
17201	Roger Truttmann	President	2,770.50
17202	Tammy Newberry	Trustee	655.68
17203	Michael Bell	Trustee	1,191.31
17204	Michael Marty	Trustee	156.99
17205	Duane Bell	Election Worker	67.50
17206	Eileen Bell	Election Worker	56.25
17207	Shirley Lueschow	Election Worker	128.25
17208	Jane Phillipson	Election Worker	159.75
17209	Carol Thompson	Election Worker	280.00
17210	Dawn Johnson	Chief Inspector	135.00
17211	Judy Renner	Election Worker	164.25
17212	Barb Peterson	Election Worker	67.50

171213	Carole Powers	Election Worker	130.50
17214	Sue Hall	Election Worker	56.25
17215	Michael Davis	Weed Commissioner	92.35
	Payroll Subtotal		**40,617.03**

To: Roger Truttmann, President
New Glarus Village Board

April 13, 2023

Dear President Truttmann,

On the Village website the Clerk has noticed a Village Board Trustee vacancy for the term ending April 2024. I am interested in being appointed to complete that term. It will be a privilege to serve along with a group of well experienced Board Members.

My background in private and public finance might be useful as there are a number of projects requiring financing planned over the next few years. Keeping financing costs to the minimum is always important but particularly so now as interest rates have increased dramatically since the first of the year.

I practiced law in New Glarus in the early 1980s. I was President of the Bank New Glarus, and later as a Board member, for 30 years.

Mary and I have lived in York Township for 15 years, then New Glarus Township for the next 20 plus years and now in the Village since 2018.

I have been honored to serve on various boards in my lifetime—public as well as charitable and for profit boards. They are all different but being a Village of New Glarus board member is a special responsibility, one that I would take seriously.

Let me know if there is anything further that you need. Thanks.

Gof Thomson
1100 2nd St
New Glarus, Wi 53574
608- 214- 5642

VILLAGE OF NEW GLARUS
RESOLUTION 23-12

RESOLUTION FOR APPOINTMENT OF FULL TIME JOURNEY LINE WORKER

THE VILLAGE BOARD of the VILLAGE OF NEW GLARUS, GREEN COUNTY, WISCONSIN does hereby resolve to appoint William Kosmeder to a full time New Glarus Utilities Journey Lineworker position with Village of New Glarus. Said employment shall begin on May 30, 2023. Compensation shall be $44.00 per hour.

Adopted this 3rd day of May, 2023.

PRESENTED: 5/3/23
ADOPTED: _____

_____
Roger J. Truttmann, President

_____
Kelsey Jenson, Village Clerk/Treasurer

VILLAGE OF NEW GLARUS

ADMINISTRATION DEPARTMENT

MEMORANDUM

To: Village Board

From: Lauren Freeman, Village Administrator

Date: May 3, 2023

Re: Façade Improvement Grant Budget & Award Maximum

Background

At their April 10, 2023 meeting, the Community Development Authority discussed interest in increasing the maximum amount of grant awards for the Façade Improvement Grant from $5,000 to $6,000. This memo provides an overview on the current budget and options for increasing the award amounts and total program budget.

Discussion

The Façade Improvement Grant program is currently allotted $20,000 per year to provide grant funding to downtown façade improvement projects. Each grant applicant is eligible for a 50% match, up to $5,000.

The program draws funds from the Downtown Tax Increment District #4. The Downtown TID #4 has a balance of approximately $630,000 and generates an annual increment of approximately $218,000. There is additional funding available in the Brewery TID #3, that could be transferred to Downtown TID #4 as well. TID #3 will close in 2026, and the Village plans to spend or transfer as much of those funds as possible before it closes.

Staff believe there are ample funds in the TIDs to increase the amount allotted to the Façade Improvement Grant, if the CDA and Village Board wish to increase it. One option would be to increase the grant amount maximum to $6,000 and increase the annual grant budget from $20,000 to $30,000-$40,000. This would allow more projects to be funded and at a higher grant amount. Any further funding in a given year could be approved subject to Village Board approval.

At their April 24, 2023 meeting, the Community Development Authority reviewed options for increasing the grant budget and award amount. The CDA recommending increasing the award amount to $6,000 and the annual grant budget to $40,000.

Recommendation

Staff recommend increasing the Façade Improvement Grant annual budget to $40,000 and increasing the maximum grant awarded to $6,000 per application. The grant would still be subject to the conditions outlined in the program guidelines.

Village of New Glarus

319 Second Street ~ PO Box 399 ~ New Glarus, WI 53574 ~ 608.527.2510
www.newglarusvillage.com

FAÇADE IMPROVEMENT PROGRAM – GRANT APPLICATION

Applicant Information	
Contact Name: Kristi Schultz	Contact Address: 1655 Lake Kegonsa Rd Stoughton WI 53589
Business Name: Rusty Raven LLC	Project Address: 500 1st St New Glarus WI 53574
Day Phone: 608-636-4585	Alt. Phone: 608-501-7998
FAX:	E-Mail: rustyravenng@gmail.com
Type of Organization: ___ Corporation ___ Partnership ___ Sole Proprietorship X LLC ___ Other: _____	Federal ID #:

Building Owner Information (if different than applicant)	
Owner Name: Kristiann Schultz Swisstown Ventures LLC	Owner Address: 1655 Lake Kegonsa Rd Stoughton WI 53589
Day Phone: 608-501-7998	Alt. Phone:

FAX:	E-Mail: Kjschultz99@gmail.com
NOTE: If grant applicant is not the owner of the building, please attach a letter, signed and dated, from the property owner expressing approval of the project application.	
General Project Information	
Proposed Start Date: May 2nd, 2023	Proposed Completion Date: May 29, 2023
Contractor Name, Address & Contact Info: Panther Exteriors - Lance Egner 1185 US Hwy 14, Suite 3, Oregon WI 53575 608-480-3948 Lange's Painting - Bernie Lange 5358 Lismore Ln Fitchburg WI 53711 608-220-8766	Budget Estimates: Total Project Estimate: $ 10,650 Façade Grant Request: $ 5,000 Private Funds: $ 5,650 Private Loans: $ _____ Other Funding: $ _____

Project Description
Describe the overall project and scope of work (attach additional pages if necessary): - Remove + replace 8 windows on 1st level to match current style - $6500 - Install new soffit/fascia in back to match rest of building - $2250 - Install LP panel to lower foundation to repair stucco - $250 - Cleanup + disposal - Apply two coats of exterior grade solid stain to lower half front facade and upper shutters - Apply one coat of matching exterior grade solid stain to top half of front facade - brown with red shutters and trim - Replace existing caution shields with new

How does this project meet the goals and objectives as detailed in the Façade Improvement Program Guidelines (attach additional pages if necessary):

The windows need to be replaced, the front facade needs to be painted and the foundation stucco and facia needs to be repaired.

This project maintains the historical swiss architecture of the building, replaces the white paint with earth tones and improves the aesthetics and function of the building.

Please provide the required attachments listed below:

- ☐ Eight (8) copies of drawings / design plans (per Sec. IV.A.1.).
- ☐ Contractor proposal (s) and Certificate of Liability Insurance (per Sec. IV.A.2.).
- ☐ Certificate of Insurance (per Sec. IV.A.11.).
- ☐ Historical photos of property if available.

Certification: The information provided above is true and accurate to the best of my knowledge and I have read and understand the guidelines of the Village of New Glarus CDA Façade Improvement Program and agree to abide by its conditions. I acknowledge that the CDA has the right to terminate this agreement under the Façade Improvement Program if I as the applicant am found to be in violation of any conditions set forth in the guidelines of the program.

Applicant Signature: Kate Schantz Date: April 10, 2023

Please send completed application and accompanying materials to:

Drake Daily, Village Administrator
319 2nd Street, PO Box 399
New Glarus WI 53574
608.527.5971
Administrator@newglarusvillage.com

Project Close-Out (REQUIRED SIGNATURES)	
By signing below, you verify that all work on this project had been completed to the best of your knowledge and, in your opinion, is acceptable to you and completed in accordance with the requirements of the Façade Improvement Program guidelines and consistent with the nature of this application.	
Contractor:	Date:
Applicant:	Date:
Building Owner (if applicable):	Date:
Building Inspector:	Date:
CDA Chairperson:	Date:

Office Use Only	
Date Application Received:	Does applicant have outstanding delinquent taxes or municipal code violations?
Community Development Authority Review Date:	☐ Approved w/o conditions ☐ Approved w/conditions (see attached) ☐ Denied (reasons below)
Authorized Grant Amount:	Reason for Denial if Applicable:
CDA Reimbursement Claim Approval Date:	Date Check Issued:

Created with

SHERWIN-WILLIAMS COLORSNAP | VISUALIZER

✔ FEATURED IN SCENE

SW 7041
Van Dyke Brown
Locator Number: 249-C7

✔ FEATURED IN SCENE

SW 7600
Bolero
Locator Number: 108-C7

✔ FEATURED IN SCENE

SW 9521
Simple Stone

SHERWIN-WILLIAMS.

PANTHER
EXTERIORS AND CONTRACTING

Repairs Estimate

Proposal Estimate submitted to:	From: Panther Exteriors	Date: 4/9/2023
Name: Kristi Schultz Address: 500 First St. Address: New Glarus, WI Phone: 608-501-7998 Email: kjschultz99@gmail.com	Name: Lance Egner Phone: 608-480-3948 Email: lance@panther-exteriors.com	**Job Description: Window replacement, soffit/fascia, and small repairs.**

Panther Exteriors & Contracting will furnish all the materials and perform all the labor necessary for the completion of the following:

Included in estimate:

- Remove & dispose of 8 windows on the lower business.
- Replace with new Mezzo windows to match current style.
- Wrap windows with custom bent aluminum to match uppers.
  Total: $6500.00
- Customer to remove and dispose of windows on upper unit.
- Install 10 new Mezzo double hung to match current style.
- Wrap windows with custom bent aluminum to match others.
- Adjust siding if needed and Tyvek seal to windows. (customer has extra siding)
- **Total with lift rental $6500.00**
- Install new soffit/fascia to match the rest of the building. (royal brown)
  Total with lift rental: $2250.00
- Install Lp panel to lower section with trim and caulk as needed.
  Total: $250.00
- Complete cleanup of work site and disposal of waste.
- Can take **$300** off if soffit/fascia done same day to use lift.
- Replace 10ft section of downspout (royal brown)

Not included in estimate:

- Any additional carpentry work needed, or repairs will be billed at the rate of $70 per hour plus material.
- Building permit if needed. N/A
- Wood Replacement will be billed at $45 per sheet for labor plus current market price of wood used.

All materials are guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from those above specifications involving extra costs will be executed only upon customer approval (as per contract conditions) & will thereby constitute an additional charge over & above the proposal amount. All agreements are contingent upon factors within Panther Exteriors & Contracting control. Panther Exteriors & Contracting will not be responsible for factors outside of the company's control, such as delays due to acts of God, another contract or architect, strikes, fire, flood, epidemic, quarantine, embargoes, accidents, or suppliers because of any of the above causes or adverse weather conditions. This contract is subject to acceptance within 30 days & may be considered void thereafter at the discretion of the undersigned.

Price is good for 30 days.

50% is required for a scheduling.
Final payment is due upon completion.

ESTIMATED Total: $15,550.00
Estimated 50% Down Payment: $7775.00
Final Payment due at completion: $TBD

Respectfully Submitted: _____ **Date:** _____

Accepted: _____ **Date:** _____

NOTICE TO LIEN RIGHTS: "As required by Wisconsin construction lien laws, supplier hereby notifies owner that persons or companies furnishing labor or materials for the construction on owner's land may have lien rights on owner's land and buildings if not paid. Those entitled to lien rights, in addition to the undersigned supplier, are those who contact directly with the owner or those will receive notice from those who give the owner notice within 30 days after they first furnish labor or materials for the construction. Accordingly, owner probably will receive notice from those who furnish labor or materials for the construction and should give a copy of each notice received to his mortgage lender, if any. Supplier agrees to cooperate with the owner and owner's lender, if any, to see that all potential lien claimants are duly paid."

PANTHER
EXTERIORS AND CONTRACTING

1185 US Hwy 14, Suite 3, Oregon, WI 53575
608-212-7473
lance@panther-exteriors.com
www.panther-exteriors.com

Lange's Painting, LLC
5358 Lismore Lane, Fitchburg WI 53711
O: 608.250.0353 / M: 608.220.8766
langespaintingllc@gmail.com

April 5, 2023

Attention: Kristi Schultz
Reference: New Glarus Front Façade Painting

We propose to furnish all labor and materials to complete the work listed below for the lump sum, **$1,650.00, One Thousand Six Hundred Fifty Dollars and No/100.**

This proposal includes:

- Apply two coats of exterior grade solid stain to lower half of façade and upper shutters.
- Apply one coat of matching exterior grade solid stain to top half of façade.

Alternate Add: Power wash exterior prior to painting. $450

Thank you for giving us the opportunity of quoting on this project. We hope we may be of service to you.

Sincerely,

Bernie Lange
Owner / Project Manager

Heins Contracting
1930 S Stoughton Road
Madison, WI 53716
Phone: (608) 732-9063

Company Representative
DJ Burris
Phone: (608) 732-2378
dj@heinscontracting.com

03/01/2023
Claim Information

Kristi Schultz
500 1st Street
New Glarus, WI 53574
(608) 501-7998

Job: Kristi Schultz

Windows Section with Lift rental for upstairs

- Remove 10 existing windows on Third Floor

- Install new Polaris Replacement Windows- Thermal weld
-10 Double Hung's

-Rebuild Frames for Windows and Stops

***- Frames are foam filled

***- Includes Lifetime Glass Breakage Warranty

- Base Window color is: White
***- Exterior Window color is: White
***- Interior Window Laminate is: White

***- install new inside stops (notate color)

- install new alum wrap on exterior- **notate color**

- insulate around windows

- haul away all waste

- Heins Contracting responsible for pulling all necessary permits

10 year workmanship warranty

Polaris Lifetime Window Warranty
***- 20 Year Warranty On Exterior Paint
***- 10 Year Warranty Blinds Between Glass

-50% deposit due on all window projects prior to windows being ordered.

- progress payments may be due

- rest paid at completion

$17,502.13

Windows Section for Downstairs shop

- Remove 8 existing windows

- Install new Polaris Replacement Windows- Thermal Plus
3 Gliders
5 Awings

***- Frames are foam filled

***- Includes Lifetime Glass Breakage Warranty

- Base Window color is: white
***- Exterior Window color is: white
***- Interior Window Laminate is: white

***- install new inside stops (notate color)

- install new alum wrap on exterior- **notate color**

- insulate around windows

- haul away all waste

- Heins Contracting responsible for pulling all necessary permits

10 year workmanship warranty

Polaris Lifetime Window Warranty
***- 20 Year Warranty On Exterior Paint
***- 10 Year Warranty Blinds Between Glass

-50% deposit due on all window projects prior to windows being ordered.

- progress payments may be due

- rest paid at completion

$9,042.00

Purchaser(s) Acknowledge(s):

- Purchaser(s) acknowledge receipt of a true copy of this contract, acknowledges they have read and know the contents and understands that no other agreements verbal or otherwise are binding on the parties there to and that same contains to the entire contract.

- Purchaser(s) agree(s) to pay **BE HEINS CONTRACTING, LLC,** or its assigns, the unpaid balance due on substantial completion to be paid upon all terms and conditions set forth herein including any necessary signatures on documents that may be requested by finance source or assigns to secure this transaction. Balance must be paid in full no later than 10 days after substantial completion. Penalties and/or interest may be applied if failure to pay with said terms.

- **NOTICE OF LIEN RIGHTS:** AS REQUIRED BY THE WISCONSIN CONSTRUCTION LIEN LAW, **BE HEINS CONTRACTING, LLC,** HEREBY NOTIFIES OWNER(S) THAT PERSONS OR COMPANIES FURNISHING LABOR OR MATERIALS FOR THE CONSTRUCTION ON OWNER(S) LAND MAY HAVE LIEN RIGHTS ON OWNER(S) LAND AND BUILDING IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO **BE HEINS CONTRACTING, LLC** ARE THOSE WHO CONTRACT DIRECTLY WITH THE OWNER(S) OR THOSE WHO GIVE THE OWNER(S) NOTICE WITHIN 60 DAYS AFTER THEY FIRST FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION, ACCORDINGLY, OWNER(S) WILL RECEIVE NOTICES FROM THOSE WHO FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION, AND SHOULD HAVE A COPY OF EACH NOTICE RECEIVED TO THEIR MORTGAGE LENDER, IF ANY. **BE HEINS CONTRACTING, LLC** AGREES TO COOPERATE WITH THE OWNER AND THEIR LENDER, IF ANY. TO SEE WHAT ALL POTENTIAL LIEN CLAIMANTS ARE DULY PAID.

- **ADDITIONAL WORK:** **ALL ADDITIONAL** work **NOT** found on initial inspection by **BE HEINS CONTRACTING, LLC** will be **ADDED** as a **change order** upon homeowners request.

- **SELLER'S LIMITED WARRANTY:** Is as specified and will transfer to the Purchaser(s) all manufacturer's written warranties. **BE HEINS CONTRACTING, LLC** specifically excludes from warranty coverage and accepts no responsibility for: 1.) Defects in appliances and equipment

KUNDERT CONSTRUCTION

1500 6th Avenue
Monroe, WI 53566
608-329-3966
info@kundertconstruction.com
www.kundertconstruction.com

Proposal

Small Jobs

Date: 3.22.23

Submitted To:

Kristi Schultz

Job Name:

Replace windows, repair lower part on north side of building and paint front of building

Address:

501 1st Street New Glarus, WI 53574

Email:

kjschultz99@gmail.com

CELL: HOME: OTHER

I hereby submit specifications and estimates for:

This is an estimated cost to complete the projects listed below.

KUNDERT CONSTRUCTION

1500 6th Avenue
Monroe, WI 53566
608-329-3966
info@kundertconstruction.com
www.kundertconstruction.com

Estimated pricing and man hours:

DESCRIPTION	AMOUNT
Fix lower part of north side of building	$2,500.00
Paint the front of the Rusty Raven building. Topcoat will be a brown color, Sherwin Williams Woodscapes Solid Color Stain (2 Coats) All the wood trim will be a red color.	$8,550.00
Replace front windows with vinyl slider replacement windows – 3 total	$3,700.00
Replace awning windows on the north side of building with vinyl replacement awning windows – 5 total	$6,500.00
Option 1 - This is an estimated cost to close in 3 windows in the upstairs 4 - seasons room and replace 7 windows with double hung vinyl replacement windows. We will also remove the plywood on the 3 walls and drywall, mud and tape them (customer will paint). Last, we will fill in siding where windows were closed in with siding to match as close as we can. - $12,500.00 Option 2 - Total estimated cost if you were to not close in 3 windows and leave the plywood on the inside the way it is. - $10,250.00.	Option 1 $12,500.00 Or Option 2 $10,250.00
Method of Payment for Project: o Check o ACH Bank Transfer o Visa, Mastercard, Discover o American Express o Draw(s) from Loan	
FILL IN AMOUNT AFTER YOU CHOOSE OPTIONS - **TOTAL:**	

1500 6th Avenue
Monroe, WI 53566
608-329-3966
info@kundertconstruction.com
www.kundertconstruction.com

*Customer will work with Kundert Construction on Permits, customer is to pay all permit fees.

*Customer is responsible for all utility hookup fees, if needed for the project.

*Prices are subject to change due to material price increases or changes made during construction, this includes all subcontractors.

*Client gives rights and permission to Kundert Construction to take photos related to the project and use these photos as Kundert Construction property and use at Kundert Constructions discretion for as deemed fit.

Any extra work will be handled by time and material at $60.00 per man hour

We propose hereby to furnish material and labor-complete in accordance with above specifications.

TO BE PAID IN US DOLLARS

With payments to be made as follows: 10% down at the time of signing the proposal, pay ½ on date the job is started, pay remainder in full when job is complete.

Convenience Fees for Debit, Credit Cards, and ACH

Visa, Mastercard, Discover	**2.95% + $0.30/transaction**
American Express	**3.95% + $0.30/transaction**
ACH Bank Transfers	**.5% of the transaction $1.99 minimum/$15.00 maximum**

Any alteration or deviation from above specifications involving extra costs will be executed only upon written Order, and will become an extra charge over and above estimate. All agreements contingent upon strikes, accidents, or delays beyond our control.

Respectfully Submitted

Chad A Kundert / Kundert Construction

Acceptance of Proposal

Signature: _____ Date: _____

Signature: _____ Date: _____

Village of New Glarus

319 Second Street ~ PO Box 399 ~ New Glarus, WI 53574 ~ 608.527.2510
www.newglarusvillage.com

FAÇADE IMPROVEMENT PROGRAM – GRANT APPLICATION

Applicant Information	
Contact Name: Brenda Siegenthaler	Contact Address: 17 6th Ave. New Glarus, WI. 53574
Business Name: Brenda's Blumenladen	Project Address: 17 6th Ave. New Glarus, WI. 53574
Day Phone: (608) - 527 - 2230	Alt. Phone: (314) - 605 - 5562
E-Mail: brendasblumenladen@gmail.com	
Type of Organization: ___ Corporation ___ Partnership ___ Sole Proprietorship ✓ LLC ___ Other: _____	Federal ID #:

Building Owner Information (if different than applicant)	
Owner Name:	Owner Address:
Day Phone:	Alt. Phone:
E-Mail:	
NOTE: If grant applicant is not the owner of the building, please attach a letter, signed and dated, from the property owner expressing approval of the project application.	

General Project Information

Proposed Start Date:	Proposed Completion Date:
June 1, 2023	November 1, 2023
Contractor Name, Address & Contact Info:	**Budget Estimates:**
OPTION #1: Coplien Painting Inc. N2577 Coplien Rd. Monroe, WI. 53566 Phone: 608-328-4714 Fax: 608-329-4714	Total Project Estimate: $ 8,735.00 Façade Grant Request: $ ~~6,000.00~~ $4,367.50 Private Funds: $ ~~2,735.00~~ $4,367.50 Private Loans: $ N/A Other Funding: $ N/A

NOTE: Please attach two written bids or cost estimates to the application. If the Applicant is applying to complete the work themselves (no contractor), please attach a detailed budget with costs quoted for materials and equipment rental.

Project Description

Describe the overall project and scope of work (attach additional pages if necessary):

- Pressure washing and repairing publicly visible exterior spaces along with painting and restaining outside of the building and woodwork (ex: trellis, beams, etc.)
- Application of preservative to all wood siding and trim (where necessary).

General Project Information	
Proposed Start Date: June 1, 2023	Proposed Completion Date: November 1, 2023
Contractor Name, Address & Contact Info: OPTION #2: Early Bird Painting 926 Sky Ridge Drive Madison, WI. 53719 Phone: 608-274-7132	Budget Estimates: Total Project Estimate: $_____ Façade Grant Request: $_____ Private Funds: $_____ Private Loans: $_____ Other Funding: $_____
NOTE: Please attach two written bids or cost estimates to the application. If the Applicant is applying to complete the work themselves (no contractor), please attach a detailed budget with costs quoted for materials and equipment rental.	

Project Description

Describe the overall project and scope of work (attach additional pages if necessary):

- Pressure washing and repairing publicly visible exterior spaces, along with painting and restaining the outside of the building and wood work (ex: trellis, beams, etc.)
- Application of preservative to all wood siding and trim (where necessary).

How does this project meet the goals and objectives as detailed in the Façade Improvement Program Guidelines (attach additional pages if necessary):

This project meets numerous goals and objectives, including that all of the proposed and necessary work is associated with publicly visible exterior aspects of our buildings to increase the visual appeal and longevity of architecture and overall structural integrity. Additionally, fresh paint and wood stain will increase the attractiveness of the buildings and encourage keeping our village beautiful!

Please provide the required attachments listed below:

- ☐ Eight (8) copies of drawings / design plans (per Sec. IV.A.1.).
- ☐ Contractor proposal (s) and Certificate of Liability Insurance (per Sec. IV.A.2.).
- ☐ Certificate of Insurance (per Sec. IV.A.11.).
- ☐ Historical photos of property if available.

Certification: The information provided above is true and accurate to the best of my knowledge and I have read and understand the guidelines of the Village of New Glarus CDA Façade Improvement Program and agree to abide by its conditions. I acknowledge that the CDA has the right to terminate this agreement under the Façade Improvement Program if I as the applicant am found to be in violation of any conditions set forth in the guidelines of the program.

Applicant Signature: Brenda Siegenthaler Date: 3/30/23

Please send completed application and accompanying materials to:

Drake Daily, Village Administrator
319 2nd Street, PO Box 399
New Glarus WI 53574
608.527.5971
Administrator@newglarusvillage.com

PROPOSAL

13938

COPLIEN PAINTING INC.
Professional Painting Contractor
Since 1939

N2577 Coplien Road Monroe, WI 53566

(608) 328-4714 FAX (608) 329-4714
www.CoplienPainting.com

TO: BRENDAS BLUMENLADEN ←
P.O. BOX 5
17 6TH AVE
NEW GLARUS WI 53574

PHONE	DATE
527-2230 B.6082194771	3/16/2023

JOB NAME / LOCATION
EXTERIOR OF MAIN BUILDING

JOB NUMBER	JOB PHONE

We hereby submit specifications and estimates for:

EXTERIOR OF MAIN BUILDING
1.PRESSURE WASH
2.REPAIR ANY CRACKS WITH EITHER CAULK OR HYDRAULIC CEMENT
3.PREP AND COVER WHERE NEEDED
4.APPLY SHERWIN WILLIAMS SUPER PAINT SATIN W/BONDING AGENT ADDED TO SIDING AND CEMENT
5.APPLY SHERWIN WILLIAMS SUPER PAINT SATIN W/BONDING AGENT ADDED TO TRIM AS EXISTING
6.CLEAN UP

$7,905.00

ADD:
EXTERIOR TRELLACE(ARBOR), 2 EXTERIOR WOOD TABLES, AS WELL AS FACIA AND POSTS ON MAIN SHELTER
1.LIGHTLY PRESSURE WASH
2.PREP AND COVER WHERE NEEDED
3.APPLY RYMAR CEDARTONE FINISH
4.CLEAN UP $8,735.00 W/BUILDING ✶
CHECK US OUT AT www.CoplienPainting.com and Facebook (LIKE) us!!!
**EMAIL ME AT markcoplien@coplienpainting.com
***WE NOW ACCEPT MASTERCARD AND VISA, SEE PAYMENT TERMS FOR DETAILS
****A SIGNED PROPOSAL BECOMES A LEGAL BINDING CONTRACT WHEN SIGNED. ALL WORK IS DONE AT OUR DISCRETION.
*****CANCELING A SIGNED CONTRACT WILL FORFEIT THE 25% DEPOSIT.
DUE TO UNCERTAINTIES IN THE PAINT MARKET, PRICES ARE ONLY GUARANTEED WHEN SIGNED AND RETURNED WITHIN 15 DAYS FROM THE CONTRACT DATE.

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of:
dollars ($).

Payment to be made as follows:
25% DOWN WITH SIGNED CONTRACT, BALANCE DUE DAY OF COMPLETION

WE ACCEPT MASTERCARD AND VISA (AN ADDITIONAL CHARGE OF 2.75% WILL BE ADDED)

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation insurance.

Authorized Signature Mark A. Coplien

Note: This proposal may be withdrawn by us if not accepted within 15 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature (X) _____

Signature _____

Date of Acceptance: _____

Early Bird Painting

926 Sky Ridge Dr
Madison, WI 53719

Estimate

Date	Estimate #
4/15/2023	1433

Name / Address
Brenda Siegenthaler 7965 Ritschard Rd. New Glarus, WI.

Project

Description	Qty	Cost	Total
17 Sixth Ave. New Glarus [redacted] Blumenladen Flower Garden Brenda's Blumenladen Work to be performed: wood siding, wood trim, stucco, trellis leading to Railroad St. Boutique, plant holders, posts, wood fence Flower garden Mask and tarp all areas not to be painted Clean areas to remove dirt, dust, debris Sand areas and prime as needed Apply 1 coat of top quality 100% finish to wood siding, wood trim, stucco, trellis leading to Railroad St. Boutique, plant holders, posts, wood fence Flower garden		8,850.00	8,850.00

Thank you for the opportunity to bid your project

Total $8,850.00

Customer Signature _____

Village of New Glarus

319 Second Street ~ PO Box 399 ~ New Glarus, WI 53574 ~ 608.527.2510
www.newglarusvillage.com

FAÇADE IMPROVEMENT PROGRAM – GRANT APPLICATION

Applicant Information	
Contact Name: Brenda Siegenthaler	Contact Address: 18 7th Ave. New Glarus, WI. 53574
Business Name: Railroad St. Boutique	Project Address: 18 7th Ave. New Glarus, WI. 53574
Day Phone: 608-636-2008	Alt. Phone: (314)-605-5562
E-Mail: railroadstboutique@gmail.com	
Type of Organization: ___ Corporation ___ Partnership ___ Sole Proprietorship ✓ LLC ___ Other: _____	Federal ID #:

Building Owner Information (if different than applicant)	
Owner Name:	Owner Address:
Day Phone:	Alt. Phone:
E-Mail:	
NOTE: If grant applicant is not the owner of the building, please attach a letter, signed and dated, from the property owner expressing approval of the project application.	

General Project Information	
Proposed Start Date: June 1, 2023	Proposed Completion Date: November 1, 2023
Contractor Name, Address & Contact Info: OPTION #1: Coplien Painting Inc. N2577 Coplien Rd. Monroe, WI. 53566 Phone: 608 - 328 - 4714 FAX: 608 - 329 - 4714	Budget Estimates: Total Project Estimate: $ 7,085.00 Façade Grant Request: $ 6,000.00 Private Funds: $ 1,085.00 Private Loans: $ N/A Other Funding: $ N/A
NOTE: Please attach two written bids or cost estimates to the application. If the Applicant is applying to complete the work themselves (no contractor), please attach a detailed budget with costs quoted for materials and equipment rental.	

Project Description
Describe the overall project and scope of work (attach additional pages if necessary): • Pressure washing and repairing publicly visible wood beams and trellis work, along with application of preservative to all wood siding and trim (where necessary).

General Project Information	
Proposed Start Date: June 1, 2023	Proposed Completion Date: November 1, 2023
Contractor Name, Address & Contact Info: OPTION #2: Early Bird Painting 926 Sky Ridge Dr. Madison, WI. 53719 Phone: 608-274-7132	Budget Estimates: Total Project Estimate: $ 2,100.00 Façade Grant Request: $ ~~6,000.00~~ $1,050 Private Funds: $ $1,050 ← Projecting this project to cost more than 2100.00, so we are prepared to use funds to cover. Call w/ any questions ☺ Private Loans: $ N/A Other Funding: $ N/A
NOTE: Please attach two written bids or cost estimates to the application. If the Applicant is applying to complete the work themselves (no contractor), please attach a detailed budget with costs quoted for materials and equipment rental.	

Project Description
Describe the overall project and scope of work (attach additional pages if necessary): • Pressure washing and repairing publicly visible wood beams and trellis work, window boxes, along with application of preservative to all wood siding and trim (where necessary). • Any other repairs to wooden beams that may be determined.

How does this project meet the goals and objectives as detailed in the Façade Improvement Program Guidelines (attach additional pages if necessary):

This project meets numerous goals and objectives, including that all of the proposed and necessary work is associated with publicly visible exterior aspects of our buildings to increase the visual appeal and longevity of architecture and overall structural integrity. Additionally, fresh paint and wood stain will increase the attractiveness of the buildings and encourage keeping our villaage beautiful!

Please provide the required attachments listed below:

- ☐ Eight (8) copies of drawings / design plans (per Sec. IV.A.1.).
- ☐ Contractor proposal (s) and Certificate of Liability Insurance (per Sec. IV.A.2.).
- ☐ Certificate of Insurance (per Sec. IV.A.11.).
- ☐ Historical photos of property if available.

Certification: The information provided above is true and accurate to the best of my knowledge and I have read and understand the guidelines of the Village of New Glarus CDA Façade Improvement Program and agree to abide by its conditions. I acknowledge that the CDA has the right to terminate this agreement under the Façade Improvement Program if I as the applicant am found to be in violation of any conditions set forth in the guidelines of the program.

Applicant Signature: Brenda Siegenthaler Date: 3/30/23

Please send completed application and accompanying materials to:

Drake Daily, Village Administrator
319 2nd Street, PO Box 399
New Glarus WI 53574
608.527.5971
Administrator@newglarusvillage.com

PROPOSAL

13939

COPLIEN PAINTING INC.
Professional Painting Contractor
Since 1939

N2577 Coplien Road Monroe, WI 53566

(608) 328-4714 FAX (608) 329-4714
www.CoplienPainting.com

TO: RAILROAD ST. BOUTIQUE
P.O. BOX 5
18 7TH AVE
NEW GLARUS WI 53574

PHONE	DATE
527-2230 B.6082194771	3/16/2023

JOB NAME / LOCATION
EXTERIOR WOOD TRIM AND STORE FRONT ON NORTH AND EAST SIDES OF BUILDING

JOB NUMBER	JOB PHONE

We hereby submit specifications and estimates for:

EXTERIOR WOOD TRIM AND STORE FRONT ON NORTH AND EAST SIDES OF BUILDING
1.APPLY CLEANER AND LIGHTLY PRESSURE WASH
2.PREP AND COVER WHERE NEEDED
3.APPLY RYMAR CLEAR OR CEDARTONE PRESERVATIVE TO ALL WOOD SIDNG AND TRIM INCLUDING FLOWER BOXES AND FENCE.
4.PAINT 2 SIDES OF WALK IN DOOR AND WOOD FRAME TO 1 COLOR OF CHOICE
5.CLEAN UP

$7,085.00 W/OTHER BUILDING

CHECK US OUT AT www.CoplienPainting.com and Facebook (LIKE) us!!!
**EMAIL ME AT markcoplien@coplienpainting.com
***WE NOW ACCEPT MASTERCARD AND VISA, SEE PAYMENT TERMS FOR DETAILS
****A SIGNED PROPOSAL BECOMES A LEGAL BINDING CONTRACT WHEN SIGNED. ALL WORK IS DONE AT OUR DISCRETION.
*****CANCELING A SIGNED CONTRACT WILL FORFEIT THE 25% DEPOSIT.

DUE TO UNCERTAINTIES IN THE PAINT MARKET, PRICES ARE ONLY GUARANTEED WHEN SIGNED AND RETURNED WITHIN 15 DAYS FROM THE CONTRACT DATE.

We Propose hereby to furnish material and labor — complete in accordance with the above specifications, for the sum of:
Seven Thousand Eighty Five and 00/100 Dollars dollars ($ 7,085.00).

Payment to be made as follows:
25% DOWN WITH SIGNED CONTRACT, BALANCE DUE DAY OF COMPLETION

WE ACCEPT MASTERCARD AND VISA (AN ADDITIONAL CHARGE OF 2.75% WILL BE ADDED)

All material is guaranteed to be as specified. All work to be completed in a professional manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado, and other necessary insurance. Our workers are fully covered by Worker's Compensation insurance.

Authorized Signature Mark A. Coplien

Note: This proposal may be withdrawn by us if not accepted within 15 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature (X) _____

Date of Acceptance: _____

Signature _____

Early Bird Painting

926 Sky Ridge Dr
Madison, WI 53719

Estimate

Date	Estimate #
4/15/2023	1434

Name / Address
Brenda Siegenthaler 7965 Ritschard Rd. New Glarus, WI.

Project

Description	Qty	Cost	Total
Railroad St. Boutique Address: 18 7th Ave, New Glarus, WI. 53574 Work to be performed: Stain wood trellis leading from Brenda's Blumenladen to Railroad St. Boutique, stain trellis, plant holders, posts, and wooden fence Mask and tarp all areas not to be painted Clean areas to remove dirt, dust, debris Sand areas and prime as needed Apply 1 coat of top quality 100% finish to Stain wood trellis leading from Brenda's Blumenladen to Railroad St. Boutique, stain trellis, plant holders, posts, and wooden fence		2,100.00	2,100.00

Thank you for the opportunity to bid your project

Total $2,100.00

Customer Signature _____

VILLAGE OF NEW GLARUS
RESOLUTION 23-14

ADOPTING THE UPDATED GREEN COUNTY HAZARD MITIGATION PLAN

FISCAL IMPACT: None

WHEREAS**,** the Village of New Glarus recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking hazard mitigation actions before disasters occur will reduce the potential for harm to people and property and save tax payer dollars; and

WHEREAS, an updated Hazard Mitigation Plan is required by FEMA as a condition of future grant funding for mitigation projects; and

WHEREAS, the Village of New Glarus participated jointly in the planning process with Green County and the other local units of government within the County to prepare an updated Hazard Mitigation Plan, which was made available for review via a Legal Notice and a copy of which will reside permanently in the Green County Emergency Management Office;

NOW, THEREFORE, BE IT RESOLVED, that the Village Board of the Village of New Glarus adopts the updated Green County Hazard Mitigation Plan as an official plan; and

BE IT FURTHER RESOLVED, that the Green County Emergency Management Department will submit, on behalf of the City/Village, the updated Hazard Mitigation Plan to Wisconsin Emergency Management and Federal Emergency Management Agency officials for final review and approval. Minor changes made upon advice from Wisconsin Emergency Management and Federal Emergency Management Agency will not require re-adopting this resolution.

Adopted this 3rd day of May, 2023.

PRESENTED: 5/3/2023
ADOPTED: _____

_____
Roger J. Truttmann, President

_____
Kelsey Jenson, Village Clerk/Treasurer

GREEN COUNTY WISCONSIN

Hazard Mitigation Plan

Final DRAFT **October 2022**

Table of Contents

Executive Summary 4
Introduction and Background 4
Plan Overview 4
Previous Planning Efforts and Legal Basis 5
Chapter 1: Plan Goals and Process 8
Overall Hazard Mitigation Goals 8
Disaster Mitigation Act of 2000 8
Local Context 8
Planning Processes 10
Planning Team 10
Outreach 13
Public Input 14
Current Mitigation Efforts 15
Chapter 2: Planning Area 17
General Community Introduction 18
Geology 19
Topography 20
Climate 20
Hydrogeology 22
Soil Types 27
Wetlands 28
Land Use 29
Land Use and Development Trends 30
Demographics 30
Education and Employment 30
Transportation Network 30
Public Safety and Support 32
Medical 32
Fire Services 32
Law Enforcement 33
Special Teams 33
Archeological and Historical Resources 35

Chapter 3: Hazard Analysis and Mitigation Strategies 37
Hazard Identification and Vulnerability Assessments 37
General Hazard Mitigation Strategies 39
Drought and Dust Storms 42
Earthquakes 46
Flooding and Dam Failure 50
Fog 64
Wildfires 69
Landslide 72
Severe Temperatures 75
Storms: Lightening 87
Storms: Thunderstorms 90
Storms: Tornadoes and High Winds 98
Storms: Winter 106
Utility Failure 112
Technical Hazards 118
Chapter 4: County Wide Mitigation Strategies 121
Overall Hazard Mitigation Roles 121
Chapter 5: Plan Adoption and Implementation 122
Plan Adoption 122
Plan Implementation 122
Plan Monitoring, Evaluation and Update 123
Appendixes 125
Appendix A: Municipal Hazard Preparedness and Mitigation Survey 126
Appendix B: Hazard Mitigation Planning Team Meetings 165
Appendix C: Public Meeting and Input 176
Appendix D: Approval and Adoption Letters 181
Appendix E: Summary of Mitigation Strategies 183
Appendix F: Report on Previous Plan Mitigation Strategies 189

Executive Summary

Introduction and Background

The Green County Hazard Mitigation Plan is intended to provide strategies for reducing susceptibility to future damage to public and private infrastructure in the county. The Green County Emergency Management Office applied for and received assistance from the Hazard Mitigation Grant Program (HMGP). This grant program is sponsored by the U.S. Department of Homeland Security - Federal Emergency Management Agency (FEMA) and is administered by the Wisconsin Department of Military Affairs - Wisconsin Emergency Management (WEM). The procedures used in preparing this plan are based on guidance provided by FEMA and WEM and should therefore be considered consistent with the requirements and procedures in the Disaster Mitigation Act of 2000.

Section 409 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 93-228, as amended) is the impetus for involvement of state and local governments in evaluating and mitigating natural hazards as a condition of receiving federal disaster assistance. The Federal Emergency Management Agency (FEMA) has rules in 44 CFR Part 206 Subpart M for implementing Section 409.

Section 409 states that the county is obligated to try to reduce damage susceptibility to any hazard that has received relief funding in the past. Developing a hazard mitigation plan provides an opportunity for communities to meet this requirement by developing strategies for reduction of potential losses from future natural disasters. Hazard mitigation planning is the process of developing a set of actions designed to reduce or eliminate long-term risk to people and property from hazards and their effects. Completion of this plan should put Green County in an advantageous position when competing for pre- and post-disaster mitigation project dollars because projects have been pre-identified. The cooperation of government, private, and volunteer agencies is essential in mitigation efforts and over the long term it is hoped that implementation of this plan will save taxpayer dollars because less money is needed for post-disaster recovery activities. Furthermore, mitigation planning measures incorporated in economic or community development goals support more comprehensive and effective government. This plan evaluates the risks that hazards pose to the citizens and property of Green County by presenting:

- A profile and analysis of past hazardous events
- An assessment of vulnerability of community assets
- Potential hazard mitigation strategies
- Methods for building community support

Plan Overview

The Green County Hazard Mitigation Plan provides background information on Green County and identifies those hazards that have occurred or could occur in the county. It includes a description of each hazard, its frequency of occurrence, appropriate actions in case of emergency and possible steps to mitigate the hazard. These hazards are the basis for the development of all county emergency plans.

A well-prepared plan allows emergency management to act swiftly and efficiently in the event of a hazard, reducing the damage and the cost incurred from displacing residents and businesses. Hazard mitigation activities will be emphasized in the plan as a major component of overall emergency management. The plan is intended to provide strategies for reducing future damages to public and private infrastructure in the county, including flood damage.

Previous Planning Efforts and Legal Basis

The Green County Emergency Management Office has completed and regularly updates the Green County Hazard Analysis. This Hazard Vulnerability Analysis (HVA) identifies all likely natural and technological hazards that might or have occurred within the county and is based on the State of Wisconsin's HVA. The local HVA does not generally include detailed mitigation strategies for the identified hazards. There have also been plans and ordinances completed by individual Green County departments or municipalities, some of these were used as reference materials for this plan, including:

Green County Code of Ordinances [1]	
Title 4	Zoning Regulations, Sanitary Code, & Subdivision Regulations
Title 5	Building Code
Title 9	Zoning, Public Safety, Health & Welfare & Sanitary Code Regulations
Title 10	Non-Metallic Mining Reclamation Ordinance
City of Brodhead Municipal Code [2]	
Chapter 393	Stormwater Management and Erosion Control
Chapter 455	Floodplain Zoning
Chapter 468	Shoreland-Wetland Zoning
Chapter 472	Subdivision of Land
Chapter 480	Zoning
City of Monroe Code of Ordinances [3]	
Title 4	Building Regulations
Title 5	Zoning Regulations Title 6
Title 4	Building Regulations
Town of Albany Code of Ordinances [4]	
Building Code Ordinance	
Land Division Resolution 2001-01	
Village of Brooklyn Ordinances [5]	
Chapter 2	Land Divisions
Chapter 111	Land Development Code
Town of Clarno Code of Ordinances [6]	
Chapter 15	Building and Building Regulations
Town of Decatur Code of Ordinances [7]	
Chapter 9	Building Permits and Codes
Chapter 9	Building Permits and Codes
Town of Exeter Code of Ordinances [8]	
Land Division and Subdivision Regulations	
Building Code	
Town of Monroe Code of Ordinances [9]	

[1] http://www.co.green.wi.gov/docs_by_cat_type.asp?doccatid=335&loc=148
[2] http://www.ecode360.com/BR3166
[3] http://e-codes.generalcode.com/codebook_frameset.asp?ep=fs&lg=1&t=ws&cb=2773_A
[4] http://www.townofalbany.com/ordinances.html
[5] https://library.municode.com/wi/brooklyn/codes/code_of_ordinances
[6] https://townofclarno.com/information/ordinances-permits-forms/
[7] http://www.townofdecatur.com/ordinances
[8] http://www.townofexeter.com/ordinances
[9] http://www.monroetownship.info/index.php/faqs/

Conditional Use Zoning

Town of Mt. Pleasant Ordinances [10]

Ordinance 08-21-06 Land Division and Subdivision
Land Division and Subdivision Amendment - Use of Land Divisions

Town of New Glarus Code of Ordinances [11]

Chapter 15	Building Construction
Chapter 110	Land Division and Subdivision

Town of York Code of Ordinances [12]

Chapter 2	Land Use ad Buildings

Village of Albany Code of Ordinances [13]

Chapter 86	Building Construction
Chapter 122	Erosion Control
Chapter 190	Nonmetallic Mining
Chapter 270	Floodplain Zoning
Chapter 271	Shoreland-Wetland Zoning
Chapter 272	Subdivision of Land
Chapter 273	Zoning

Village of Belleville Code of Ordinances[14]

Chapter 218	Building Construction
Chapter 450	Stormwater Management and Erosion Control
Chapter 580	Floodplain Zoning
Chapter 592	Shoreland-Wetland Zoning
Chapter 600	Subdivision of Land
Chapter 615	Zoning

Village of Brooklyn Code of Ordinances

Chapter 117	Zoning Code

Village of Monticello Code of Ordinances[15]

Chapter 19	Zoning
Chapter 20	Subdivision RegulationsChapter 21
Chapter 23	Stormwater Management
Chapter 19	Zoning
Chapter 20	Subdivision RegulationsChapter 21

Village of New Glarus Code of Ordinances[16]

Chapter 118	Building Construction
Chapter 169	Floodplain Zoning
Chapter 205	Mining/Zoning
Chapter 248	Shoreland-Wetland Zoning
Chapter 260	Storm Water Management
Chapter 265	Subdivision of Land
Chapter 305	Extraterritorial Zoning Ordinance

[10] http://www.townofmtpleasantwi.com/ordinances
[11] http://ecode360.com/NE2145
[12] http://www.townofyork.org/forms-permits/ordinances/
[13] http://www.albanywi.org/ordinances/
[14] http://www.ecode360.com/BE2959
[15] http://vi.monticello.wi.us/government/ordinances/
[16] http://ecode360.com/NE1984

The following is a list of additional references and data sources used in the development of this Plan:

- State of Wisconsin 2021 Hazard Mitigation Plan[17]
- State of Wisconsin 2021 Threat and Hazard Identification and Risk Assessment[18]
- 2021 Wisconsin's Changing Climates: Impacts and Adaptations– WICCI, WIDNR[19]
- EPCRA Planning Facility Response Plan
- Hazardous Material Strategic Plan
- Emergency Operation and Response Plans

Mitigation strategies are reviewed over the five years of the plan's life by the leadership staff from the applicable departments with the elected leaders from the jurisdictions to triage projects and determine what can and should be done within the planning period. The determining factor for most projects is obviously budget availability. The units of government have several options for funding implementation including grants, special taxing authority (for the project and/or any matching funds), general purpose revenue from existing budgets, and regulatory authority, which can be used to require that an individual or business complete the project using their funds.

[17] https://wem.wi.gov/state-planning/
[18] https://wem.wi.gov/wp-content/library/Mitigation/Appendix_A_THIRA.pdf
[19] https://wicci.wisc.edu/2021-assessment-report/

Chapter 1: Plan Goals and Process

Overall Hazard Mitigation Goals

With the knowledge gained from local communities and key stakeholders from throughout Green County, the planning team developed the following hazard mitigation goals. These goals were used to prioritize hazard mitigation actions for each community and County-wide.

- Protect human lives, both today and for future generations.
- Protect human and environmental health.
- Protect utilities, infrastructure and critical facilities, including police, fire, and EMS stations.
- Protect technological capabilities, data accessibility, and connections critical to social function.
- Help people protect themselves.
- Protect roads from washouts/landslides.
- Prevent future risk of hazards in highly vulnerable areas.
- Maximize the use of state and federal funds.
- Enhance public education about disaster preparedness and resilience, and expand public awareness of natural hazards.

Disaster Mitigation Act of 2000

The development of the Green County Multi-Hazard Mitigation Plan is a response to the passage of the Disaster Mitigation Act of 2000[20] (DMA), which was signed into law on October 30, 2000, with the goal of reducing losses and future public and private expenditures and improving response and recovery from disasters. This act, Public Law 106-390, amended the Robert T. Stafford Relief and Emergency Assistance Act. A summary of the portions of the DMA that relate to local governments and tribal organizations follows:

- Local governments and tribal organizations must prepare a multi-hazard mitigation plan in order to be eligible for funding from the FEMA Pre-Disaster Mitigation Assistance Program and Hazard Mitigation Program.
- Natural hazards need to be addressed in a risk assessment and vulnerability analysis sections of the multi-hazard mitigation plan. Assessment of human-caused hazards such as hazardous waste spills is encouraged but not required.
- Authorizes up to seven percent of Hazard Mitigation Grant Program funds available to a state following a federal disaster declaration to be used for development of state, local, and tribal organization multi-hazard mitigation plans.
- Without an up-to-date multi-hazard mitigation plan, local governments and tribal organizations cannot obtain funds from the Pre-Disaster Mitigation Grant Program.

Local Context

In order to comply with Section 322 of the Disaster Mitigation Act of 2000 and qualify for future hazard mitigation grant awards, Green County must develop a district wide Multi-Hazard Mitigation Plan. Additionally, the requirements of FEMA's Flood Mitigation Assistance (FMA) and some of the requirements needed for communities to receive a Community Ratings System (CRS) designation are addressed.

[20] https://www.fema.gov/media-library/assets/documents/4596

Green County Emergency Management submitted a pre-disaster hazard mitigation grant proposal to Wisconsin Emergency Management (WEM) in 2021. Green County received pre-disaster mitigation program assistance through WEM in 2022. Green County Emergency Management contracted with Pre-Emergency Planning, LLC to complete the update to the Green County Hazard Mitigation Plan.

WEM and FEMA each have a role in reviewing Multi-Hazard Mitigation Plans. WEM receives local plans, does a pre-review and forwards them to the FEMA Regional Office for formal review and approval. When the plan meets FEMA's approval, it must be officially adopted by the governing body of Green County.

Per FEMA Requirements, this Multi-Hazard Mitigation Plan includes a description of the following:

Planning Process, is a general description of the purpose of the plan and what is included in the plan. This section includes an identification of the county and municipalities included in the plan, a description of plan development, public involvement and input process, and coordination with other plans.

Planning Area, is a description of the geography of the planning area. This section documents the demographic and economic characteristics of the planning area.

Hazard Analysis and Previous Mitigation Projects, includes a hazard identification and a risk/vulnerability assessment. Each of the hazards affecting the planning area are addressed in the risk assessment. The risk assessment documents the history and impact of the hazard's occurrence in the planning area, the vulnerability of the planning area to each risk, and the probability and potential cost associated with future occurrences.

Mitigation Strategy, incorporates the mitigation goals, actions, and projects into the local communities and County-wide. Strategies identify how the mitigation goals identified will be prioritized, implemented, and administered by the local jurisdictions in Green County.

Plan Maintenance Process and Adoption, describes the method and schedule that will be used to monitor, evaluate, review progress, make revisions and update the Mitigation Plan within a five-year cycle and how public participation will be sought in this plan maintenance process. The plan approval process describes and documents how the plan was formally adopted by the governing bodies within the planning area.

Planning Process

Planning Team

Green County had a Multi-Hazard Mitigation Plan developed to support efforts from 2018-2023. This plan is an update of the 2018 Plan. The Green County Emergency Management Director contracted with Pre-Emergency Planning, LLC to update this plan. A Hazard Mitigation planning team was organized to oversee the completion of this plan. Green County Emergency Management and Pre-Emergency Planning, LLC guided the development of this plan through existing knowledge of the communities and local input.

The first step in the planning process was to identify and organize a planning team made up of professional staff and county and municipal officials with expertise related to hazard mitigation and emergency management. See Table 1 for a list of Planning Team members and their organization affiliation. Planning team members met 4 times over the course of the planning process to review the previous Plan and work on developing strategies for the updated Plan. Invitations were extended to all municipalities, critical county infrastructure, volunteer agencies, regional partners and others to offer an opportunity for a regional, all agency planning process.

Table 1 - Green County Hazard Mitigation Planning Team	
Name	Title/Agency
Tanna McKeon	Green County Emergency Management
Gary Ziegler	Green County Emergency Management
Chris Narveson	Green County Highway Department
Alan Gerber	City of Monroe
Rich Vogel	City of Brodhead
Leif Spilde	Village of Brooklyn
Rob Sommers	Green County Treasure/Land Records
Drake Daily	Village of New Glarus
Melissa Waller	Pre-Emergency Planning, LLC

Five meetings were held with officials from municipalities and key stakeholders to explain and gather input regarding the program (e.g., previous occurrences, mitigation strategies). The first Planning Team meeting was held on April 4, 2022 virtually. At this meeting, the planning team developed the project scope, defined the timeline for planning activities, determined the planning team members and scheduled future meetings. Additional planning team meetings were held on May 5, 2022, July 28, 2022 August 30, 2022, and October 11, 2022. These meetings provided a background on Hazard Mitigation Planning, a review of the previous plan, and a review of mitigation strategy development. At these meetings team members reviewed and updated the planning goals and reviewed public input from the prior meeting to develop mitigation strategies. Local Hazards were presented and local strategies were developed with community input and planning team expertise. See Appendix B for meeting agendas and sign in sheets. Additionally, a working draft of the plan was distributed to the County Emergency Management Directors from Layfette, Dane, Rock, and Stephenson (IL) Counties. Comments received were reviewed and incorporated into the plan as appropriate.

A Green County Hazard Preparedness and Mitigation Questionnaire/Survey was developed to obtain information from municipalities within Green County. The survey was sent to the clerk and chief elected official of every municipality (town, village and city) as well as key county departments (e.g., IT, planning, highway) for completion; surveys were received back from county offices and the incorporated municipalities as well as many of the unincorporated towns. A copy of the survey is shown below:

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property					
Protecting critical facilities (hospitals, fire stations, etc.)					
Preventing development in hazard areas					
Enhancing the function of natural features (streams, wetlands)					
Protecting historical and cultural landmarks					
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses					
Protecting and reducing damage to utilities					
Strengthening emergency services					

7. What ideas do you have for your community to mitigate natural disasters?

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey:

Name/Title of Person Completing the Survey:

Date Survey was Completed:

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

Completed surveys were received from the following:

- Green County Information Technology
- City of Monroe
- City of Brodhead
- Town of Jefferson
- Town of Sylvester
- Town of Jordan
- Town of Adams
- Town of Spring Grove
- Town of York
- Town of New Glarus
- Town of Mt. Pleasant
- Town of Cadiz
- Town of Brooklyn
- Village of New Glarus
- Village of Belleville
- Village of Brooklyn
- Village of Albany
- Village of Monticello

The completed surveys can be found in Appendix A: Municipal Hazard Preparedness & Mitigation Surveys.

Outreach

Outreach and education are a major component of any successful planning process. A Pre-Disaster Mitigation Planning informational brochure was created and copies were distributed throughout the community at local community gathering points such as municipal halls, libraries, etc. The informational brochure was provided to each municipality in Green County via email and recipients were encouraged to share the information with community members, key community stakeholders, private sector partners and other key personnel. A copy of the informational brochure is provided below:

GOVERNMENTAL & PUBLIC INPUT

Planning creates a way to solicit and consider input from diverse interests. Successful community mitigation begins with a commitment from government officials throughout the county.

Involving stakeholders is essential to building community-wide support for the plan. In addition to emergency managers, the planning process involves other government agencies (e.g., zoning, floodplain management, public works, community and economic development), businesses, civic groups, environmental groups and schools. Vital information provided by these groups helps insure that the plan is workable within the framework of the community's priorities.

ADOPTION OF THE PLAN

Local units of government participating in a multi-jurisdictional planning process must adopt the final plan for the municipality to be eligible for future mitigation funds including grants available through FEMA. **Local units (i.e., towns, villages, cities) that do not participate would be ineligible to receive such funds** until such time that they meet these requirements and adopt a plan.

HISTORY

Since 1993 more than 400 disasters have occurred in the United States, affecting communities in all 50 states, costing the country over **$500 million dollars per WEEK and killing over 24,000 people**.

MITIGATION PLANNING FACTS

► A recent study by the Multi-hazard Mitigation Council shows that each dollar spent on mitigation saves society an average of four dollars.

► The rigorous building standards adopted by 20,000 communities across the country are saving the nation more than $1.1 billion a year in prevented flood damages.

► Hazard mitigation plans and projects reduce overall risks to the population and structures while also reducing reliance on funding from actual disaster declarations.

► Since 1993 more than 400 disasters have occurred in the United States, affecting communities in all 50 states, costing the country over **$500 million dollars per WEEK and killing over 24,000 people**.

NOTES: _____

_____

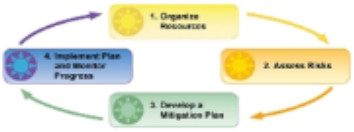
_____

Pre-Disaster Mitigation Planning

Creating Safe,

Sustainable

Communities



What is Hazard Mitigation?

Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards.

Floods, ice storms, tornadoes and forest/wild fires – these are all functions of the natural environment and only become hazardous when they threaten our "built" environment with destruction. These hazards will occur one day. When this happens, the results can be appreciably different from past outcomes if our community takes action today.

Risk Reduction

The goal of risk reduction is to reduce the risk to life and property, which includes existing structures and future construction, in the pre- and post-disaster environments. This is achieved through regulations, local ordinances, land use and building practices and mitigation projects that reduce or eliminate long-term risk from hazards and their effects.

Why Develop A Plan?

Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repeated damage. The planning process is as important as the plan itself. It creates a framework for risk-based decision-making to reduce damages to lives, property and the economy from future disasters.

State, tribal and local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act of 2000, provides the legal basis for state, local and tribal governments to undertake a risk-based approach to reducing risks from natural hazards through mitigation planning.

Like many other people, the residents of Merkel, Texas didn't think much about flooding. Besides, it had not flooded in Merkel for 45 years. It wasn't until the heavy rains in the summer of 2007 that residents realized flooding can hit anyone, at any time. After the flooding finally subsided, officials knew they had to do something: mitigate.

Required Information

- Flood maps
- Identification of potential hazards
- History of occurrences
- Hazard impact projections
- Location of critical facilities
- Identification of high-risk facilities (schools, fire station, nursing homes, etc.)
- Location of repetitive loss structures
- Development & prioritization of mitigation projects
- Other materials as identified

Hazard Mitigation Planning Process

1. **Organize Resources-** From the start, communities should focus the resources needed for a successful mitigation planning process. Essential steps include identifying and organizing interested members of the community, particularly those with the technical expertise required during the planning process.

2. **Assess Risks-** Communities next need to identify the characteristics and potential consequences of natural hazards. It is important to understand how much of the community can be affected by specific hazards and what the likely impacts would be for important community assets.

3. **Develop a Mitigation Plan-** Armed with an understanding of the risks posed by natural hazards, communities need to determine what their priorities should be and then look at possible ways to avoid or minimize the undesired effects. The result is a natural hazard mitigation plan and strategy for implementation.

4. **Implement the Plan & Monitor Progress-** Communities can bring the plan to life in a variety of ways ranging from implementing specific mitigation projects to changes in the day-to-day operation of the local government. To ensure the success of an on-going program, it is critical that the plan remains effective. Thus, it is important to conduct periodic evaluations and make revisions as needed.

Public Input

Green County believes in the importance of gathering public input from interested parties in the community. To achieve this goal, the Green County Emergency Management Office took every opportunity available to use various methods to publicize the opportunity for people to participate in the planning process and to gather input from interested parties. The following table summarizes the meetings and public opportunities for plan input.

Table 2 – 2022 Green County Multi-Hazard Mitigation Plan Outreach Meetings

Meeting	Date	Location	Description
First Planning Team Meeting	04/04/2022	Virtual	Review and develop scope of work, timeline and mitigation action updates from Emergency Management.
Second Planning Team Meeting	05/05/2022	Green County Sheriff's Office, Monroe, WI	Initial meeting of the planning team to review hazard mitigation planning project, develop and approve hazard mitigation survey content and review current mitigation activities.
Third Planning Team Meeting	07/28/2022	Green County Sheriff's Office, Monroe, WI	Meeting of local and county stakeholders and community partners to review survey results, discus current and past grant funded mitigation efforts, discuss public input.

Fourth Planning Team Meeting	08/30/2022	Green County Sheriff's Office, Monroe, WI	Meeting of regional stakeholders, local government and community partners to review hazard mitigation actions/ activities at a local level.
Public Outreach Meeting	09/27/2022	Monroe	Meeting for public input.
Public Outreach Meeting	09/27/2022	New Glarus	Meeting for public input.
Fourth Planning Team Meeting	10/11/2022	Virtual	Meeting of planning team to review public comment and finalize the draft plan.

Current Mitigation Efforts

Green County Emergency Management, Planning Team members, and key stakeholders, identified the following hazard mitigation efforts currently being used within the County:

Assistance Programs - The county receives and coordinates state and federal disaster relief assistance to victims in affected areas. This assistance could include the Individual and Households Program, the Small Business Administration's loan programs, the administration of unemployment compensation, and various other disaster relief programs available for both Presidential declared and non-Presidential declared disasters.

Education and Outreach - Since the early 1990's, an annual state-wide Tornado and Severe Weather Awareness Week is practiced in March or April. Among other events, this week includes extensive public education through the media, as well as a tornado safety drill in all County facilities. Green County Emergency Management regularly meets with local governments to educate and inform residents about emergency response and hazard mitigation.

Emergency Response and Mutual Aid - Initial emergency response in Green County is a full-time sheriff and police agencies. However, these agencies have a limited number of personnel on duty at any given time and are spread over a wide land-area. Local community Fire and EMS services are often initial responders. Emergency services, including Fire and EMS manned by volunteers, are located in every area throughout the County as well as neighboring communities that provide services to areas within Green County. Currently, all local Fire Departments within Green County maintain formal mutual aid agreements through the Mutual Aid Box Alarm System (MABAS). Green County Emergency Management also has access to Incident Management Teams through WEM and WIDNR. Police have access to the Emergency Police Services (EPS) system through WEM.

Warning Systems - An effective warning system is the single most important method for alerting the public of severe weather hazards. In addition to the use of local radio stations and National Oceanic and Atmospheric Administration (NOAA) weather radio warnings, Green County Emergency Management uses warning sirens and Emergency Alert Systems to broadcast warnings. Below are more detailed explanations of each:

Local Two-Way Radio - Radio is used to link all police, fire, and EMS agencies within the County to one another. The County hosted two-way radio communication system links all highway vehicles and is available to interested towns and villages, while Green County cities also have individual two-way radio systems for local use. Central dispatch provided by the County is the core to the county emergency two-way communications and paging system on multi frequencies.

National Oceanic and Atmospheric Administration - NOAA Weather Radio continuously broadcast National Weather Service (NWS) forecasts, warnings, and other critical weather information. NOAA Weather Radio also provides direct warnings to the public for natural, man-made, or technological hazards, and it is the primary trigger for activating the national Emergency Alert System on commercial radio, television, and cable systems.

Sirens - Warning sirens are located in the City of Monroe, New Glarus, Albany, Monticello, Juda, Browntown and Brodhead. They all maintain their own sirens. Green County can activate any of the sirens within the county however, only the City of Monroe, and Brodhead can activate their own sirens.

Emergency Alert System – The Emergency Alert System allows state and local officials to send messages to radio, television, and cable systems that target specific areas. The information can be sent electronically through broadcast stations and cable systems even if those facilitates are unattended.

Nixle - Green County Sheriff's Office, along with several other first response agencies, have been utilizing a communications service, that allows us to send important, valuable community information directly to residents using the latest technology. The Green County Nixle Information System allows users to create and publish messages to be delivered to subscribed residents instantly via cell phone text message and/or email. Messages may include relevant safety, weather, and community event information. This free service is secure, reliable and easy to use for residents. The messages can be sent specifically to residents registered within a ¼ mile radius, giving them the opportunity to receive trustworthy information relevant only to their neighborhood. Subscribers can also choose the way in which alerts are received, whether it is by email, text message, or over the web.

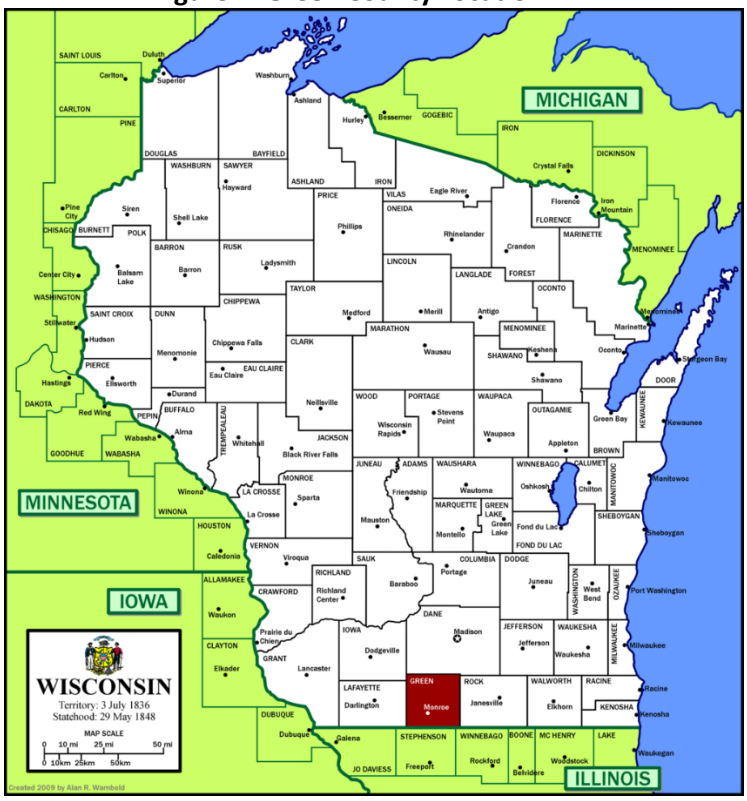
National Flood Insurance Program Participation (NFIP) - in this program requires the jurisdiction to follow state and federal floodplain zoning requirements and undertaking Substantial Damage analysis following natural hazard events. Communities not participating in NFIP do not have established floodplains within their jurisdiction. Townships participate through the County.

Chapter 2: Planning Area

Green County is located in the south-central portion of the State of Wisconsin, forming a portion of the State's southern boundary, approximately equidistant from Lake Michigan and the Mississippi River. Located in south central Wisconsin, Green County has sixteen towns, six villages, and two cities, the county seat is Monroe. The land area is 593 square miles, with approximately 0.58 square miles covered by surface water (e.g., rivers, streams and lakes). The population, as of the 2020 census, is 36,842. Green County is divided into thirty-one supervisory districts and each district has a representative on the Board of Supervisors.[21] It contains two cities, five villages, and 16 towns, some of which have unincorporated hamlets. The City of Monroe is the county seat, and is the largest municipality in the county with a population of 10,527 in the 2020 U.S. Census.[22]

Green County is primarily comprised of vibrant rural communities. The county is bordered by Wisconsin counties, Dane to the north, Lafayette and Iowa to the west, and Rock to the east, and Illinois to the south. The City of Madison, Wisconsin's state capitol, is a rapidly- growing urban center approximately 30 miles to the county's north. Wisconsin's largest city, Milwaukee, is approximately 100 miles to the east and Rockford, Illinois' third largest city, is approximately 50 miles south. Additionally, Chicago, Illinois, the country's third largest metropolitan area, is approximately 100 miles to the county's southeast. The county is connected to these urban areas and other regional, state, and national locations by a vast road network of county and state highways well as U.S. highways and interstates.

Figure 1: Green County Location



In Wisconsin, there are three types of sub-county, full-service local government units: towns, which are unincorporated, and villages and cities, which are incorporated. This plan is designed to represent Green

[21] http://www.wisconline.com/counties/green/

[22] https://www.census.gov/quickfacts/monroecitywisconsin

County, the Cities of Brodhead and Monroe; the Villages of Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and the Towns of Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mt. Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York (See Appendix A for a map of Green County). Note that the Villages of Belleville and Brooklyn cross the border into Dane County. There are also the unincorporated villages of Attica and Dayton (Town of Exeter), Clarno (Town of Clarno), Juda (Town of Jefferson), Martintown (Town of Cadiz), Postville (Town of York).

General Community Introduction

Green County has a rich history. The county was created in 1836 as a territorial county and was named after Nathanael Greene, quartermaster general and commander of the southern campaign during the Revolutionary War. Today, Green County is known for its green rolling hills, highly productive farmland, and the small-town flavor of its communities.

The county was inhabited for thousands of years by various Native American groups, including the mound building societies and later the Winnebago, Potawatomi, Sauk, Fox, Illinois, and Menominee tribes. The Europeans first exposure to the area likely came in the mid-1700's when French fur traders and Christian missionaries passed through. Over the ensuing century, the few white settlers had both peaceful and confrontational relationships with the Native American tribes until settlement began in earnest in the 1830's, spurred on by the Federal Public Land Survey which was completed in the area between 1833 and 1836.

The county's early settlers were greeted by a rolling, undulating landscape with fully one-half of the land covered with trees. Heavy forests comprised of black walnut, oak, maple, basswood and ash trees covered the southern and south-western portions while the rest of the county was mostly burr oak, which was only useful for fuel. The northwestern portion of the county was broken and rough while the center, western, northern, eastern, and southeastern parts had extensive prairies. These features, crossed with the ample waterways of the Sugar and Pecatonica Rivers and their tributaries, provided early settlers with wood for manufacturing and fuel as well as ample land for farming and husbandry.[23]

Present day Green County is known for its green rolling hills, highly productive farmland, Swiss heritage, and the small-town flavor of its communities. The primary industry within the county is agriculture, particularly the dairy industry.[24] Tourism is also important as evident by the number of motels, restaurants, museums, shops and recreational facilities now present in the county.

Stagnated population and economic growth were evident in the County in the late 20th century, coinciding with a national decline in domestic manufacturing and industry. Recent economic recovery, continued agricultural production, and the County's favorable geography have provided stability to the region though, and the county is slowly beginning to grow again.

[23] *History of Green County, Wisconsin…* Springfield, Illinois: Union Pub. Co., 1884 http://digital.library.wisc.edu/1711.dl/WI.HistGreen1884

[24] http://www.prosperitysouthwest.com/green-county/

Geology

Green County's physical geography is generally comprised of rolling hills, as it lies within the Western Upland geographical province. The Western Uplands are one of the most attractive parts of the state. Most of the region is a thoroughly-dissected upland, not a flat- topped or sloping surface as in northern Wisconsin or the region near Lake Michigan. The average elevation of the hilltops above sea level is about 1100 feet in St Croix and Pierce counties in northwestern Wisconsin, 1280 feet in Vernon County, and 900 to 1200 feet in Grant County. The uplands thus stand 100 to 200 feet above the Eastern Ridges and Lowlands to the southeast, and 200 to 350 feet above the Central Plain to the northeast.

Aside from the upland itself the strongest topographic features of the region are the great trenches or gorges of the Mississippi and Wisconsin rivers and their numerous branches. The gorge of the Mississippi is incised more than 500 feet below the level of the upland ridges. The upland or plateau region of western Wisconsin consists of two cuestas and one monadnock, or an isolated rock hill, knob, ridge, or small mountain that rises abruptly from a gently sloping or virtually level surrounding plain. A cuesta is an upland belt with a short, steep descent, or escarpment, on one side and a long, gentle slope on the other. Most of the province is not a flat-topped upland or plateau, but a thoroughly dissected cuesta. With the exception of the area northwest of the Chippewa River, it has no smooth upland areas of notable extent. It is a region of high, narrow ridges and deep, steep- sided valleys.

The northern four-fifths of the Western Upland lies in the belt of Lower Magnesian limestone, and to a smaller extent in the area of the Cambrian sandstone. The southern fifth of the province, which includes Green County, lies in the belt of Galena-Black River limestone. A small portion of the Western Upland is the Baraboo Range. This is not a cuesta, but an exhumed monadnock made up of pre-Cambrian metamorphic and igneous rocks.[25]

The Eastern Ridges and Lowland section of Wisconsin contains a large proportion of the people of the state. The reasons for this are not simple. The three factors of prime importance are level topography, fertile soil, and favorable climate. Topographic features are distinct, but they are low. The dominant thing in eastern Wisconsin is the plain.

Alternate weak and resistant rock layers having a moderate inclination will be carved by streams and weather into a belted plain. This plain will have parallel strips of upland and lowland corresponding to the more important resistant and weak strata. The uplands are called cuestas and the lowlands have sometimes been called vales. The topography of the eastern ridges and lowlands is controlled by cuestas. The westernmost ridge is the rather low, narrow cuesta formed by the resistant Lower Magnesian limestone. It is alluded to hereafter as the Magnesian cuesta. The eastern upland is the higher and broader cuesta of Niagara limestone. The intermediate Green Bay-Lake Winnebago-Rock River lowland lies upon the belt of Black River and Galena limestone, with the gentle back slope of the Magnesian cuesta for one wall and the steep escarpment of the Niagara cuesta for the other.

The Lake Michigan lowland, half of which lies in the state of Wisconsin, owes its abnormal depth chiefly to glacial erosion rather than weathering and stream work, while the two cuestas and their intermediate lowland in eastern Wisconsin, though also modified by glaciation, are normal products of weathering and stream work.[26]

[25] http://www.wisconline.com/wisconsin/geoprovinces/westernupland.html
[26] http://www.wisconline.com/wisconsin/geoprovinces/easternridges.html

Topography

Wisconsin lies in the upper Midwest between Lake Superior, the upper peninsula of Michigan, Lake Michigan and the Mississippi and Saint Croix Rivers. Its greatest length is 320 miles, greatest width 295 miles for a total area 56,066 square miles. Glaciation has largely determined the topography and soils of the state, except for the 13,360 square miles of driftless area in southwestern Wisconsin. The various glaciations created rolling terrain with nearly 9,000 lakes and several areas of marshes and swamps. Elevations range from about 600 feet above sea level along the Lake Superior and Lake Michigan shores and in the Mississippi floodplain in southwestern Wisconsin to nearly 1,950 feet at Rib and Strawberry Hills.

The Northern Highlands, a plateau extending across northern Wisconsin, is an area of about 15,000 square miles with elevations from 1,000 to 1,800 feet. This area has many lakes and is the origin of most of the major streams in the state. The slope down to the narrow Lake Superior plain is quite steep. A comparatively flat, crescent-shaped lowland lies immediately south of the Northern Highlands and embodies nearly one-fourth of Wisconsin. The eastern ridges and lowlands to the southeast of the Central Plains are the most densely populated and have the highest concentration of industry and farms. The uplands of southwestern Wisconsin west of the ridges and lowlands and south of the Central Plains make up about one-fourth of the state. This is the roughest section of the state, rising 200 to 350 feet above the Central Plains and 100 to 200 feet above the Eastern Ridges and Lowlands. The Mississippi River bluffs rise 230 to 650 feet.[27]

Climate

The Wisconsin climate is typically continental with some modification by Lakes Michigan and Superior. Winters are generally cold and snowy and summers are warm. About two-thirds of the annual precipitation falls during the growing season; this is normally adequate for vegetation although there are occasional droughts. The climate favors dairy farming and the primary crops are corn, small grains, hay and vegetables. Storm tracks generally move from west to east and southwest to northeast.

The average annual temperature varies from 39 degrees F in the north to about 50 degrees F in the south with statewide extreme records of 114 degrees F (Wisconsin Dells, 7/13/1936) and minus 55 degrees F (Couderay, 2/2/1996 and 2/4/1996). During more than one-half of the winters, temperatures fall to minus 40 degrees F or lower and almost every winter temperatures of minus 30 degrees F or colder are reported from northern stations. Summer temperatures above 90 degrees F average two to four days in northern counties and about 14 days in southern districts. During marked cool outbreaks in summer months, the central lowlands occasionally report freezing temperatures.

The freeze-free season ranges from around 80 days per year in the upper northeast and north-central lowlands to about 180 days in the Milwaukee area. The pronounced moderating effect of Lake Michigan is well-illustrated by the fact that the growing season of 140 to 150 days along the east-central coastal area is of the same duration as in the southwestern Wisconsin valleys. The short growing season in the central portion of the state is attributed to a number of factors, among them an inward cold air drainage and the low heat capacities of the peat and sandy soils. The average date of last spring freeze ranges from early May along the Lake Michigan coastal area and southern counties to early June in the northernmost counties. The first autumn freezes occur in late August and early September in the northern and central lowlands and in mid-October along the Lake Michigan coastline, however a July freeze is not entirely unusual in the north and central Wisconsin lowlands.

[27] http://www.uwex.edu/sco/state.html

The long-term mean annual precipitation ranges from 30 to 34 inches over most of the Western Uplands and Northern Highlands, then diminishes to about 28 inches along most of the Wisconsin Central Plain and Lake Superior Coastal area. The higher average annual precipitation coincides generally with the highest elevations, particularly the windward slopes of the Western Uplands and Northern Highlands. Thunderstorms average about 30 per year in northern Wisconsin to about 40 per year in southern counties and occur mostly in the summer. Occasional hail, wind and lightning damage are also reported.

The average seasonal snowfall varies from about 30 inches at Beloit to well over 100 inches in northern Iron County along the steep western slope of the Gogebic Range. Greater average snowfall is recorded over the Western Uplands and Eastern Ridges than in the adjacent lowlands. The mean dates of first snowfall of consequence (an inch or more) vary from early November in northern localities to early December in southern Wisconsin counties. Average annual duration of snow cover ranges from 85 days in southernmost Wisconsin to more than 140 days along Lake Superior. The snow cover acts as protective insulation for grasses, autumn seeded grains, alfalfa and other vegetation. [28]

In 2012, the Wisconsin Department of Health Services (DHS), Bureau of Environmental and Occupational Health (BEOH) was awarded a grant to study and prepare for anticipated climatic effects of the public's health. The Wisconsin Climate and Health Profile Report highlights evidence-based data related to extreme weather events, corresponding health outcomes and the development of projects and best practices to adapt to and prepare for future extreme weather events.

Over the past 60 years Wisconsin has become warmer and wetter, especially during the winter months. Evidence and research drawn from the Wisconsin Initiative on Climate Change Impacts (WICCI) suggest that climate-sensitive human health impacts will likely be affected by precipitation changes, heat extremes, drought, winter weather changes, disease vectors, surface water and groundwater. Those most vulnerable to these changes include the very young, elderly, persons with chronic disease (e.g., asthma), persons of low socio-economic status, persons with mental health issues and those who are socially isolated.

Possible impacts during the four seasons include:

- Spring - More frequent and intense rain events may lead to more flooding with health impacts such as stress and mental health disorders; foodborne and waterborne illnesses; injuries; drowning; and death.
- Summer - Southern Wisconsin may experience approximately 28 more days exceeding 90 degrees Fahrenheit. Health impacts can include heat stress, respiratory disease, allergic reactions and death.
- Fall - Extended periods of warming could case more drought with health impacts including water and food insecurity; respiratory distress; allergic reactions; and death.
- Winter - Warmer winters might cause more ice, sleet and rain. Health impacts may include traffic accidents, power outages, injuries and death.[29]

[28] http://www.aos.wisc.edu/~sco/

[29] Wisconsin Climate and Health Profile Report, 2014, WI Department of Health Services, Bureau of Environmental and Occupational Health http://www.dhs.wisconsin.gov/publications/P0/P00709.pdf

Climate Normals and Growing Season Summary

Climate Normals [29]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Ave Daily High (F°)	25.5	30.2	42.7	57.6	69.8	79.7	83.7	81.0	73.2	61.6	45.8	30.9
Ave Daily Low (F°)	5.4	9.9	22.9	34.9	45.4	54.6	59.4	56.5	47.9	36.7	25.7	12.1
Growing Degree Days	1	3	38	154	333	516	638	584	393	200	44	5
Heating Degree Days	1535	1257	998	561	266	45	8	31	153	499	873	1345
Cooling Degree Days	0	0	0	0	37	111	213	149	21	9	0	0
Ave Precipitation (")	1.15	1.16	2.33	3.30	3.29	4.02	3.88	4.06	3.86	2.69	2.15	1.83
Ave Snowfall (")	7.5	5.5	6.7	1.6	0.0	0.0	0.0	0.0	0.0	0.1	1.3	8.6

Data from the weather station at Brodhead, latitude 42°37' N, longitude 89°23' W, elevation 790 ft.

Hydrology

The land in Wisconsin drains into Lake Superior, Lake Michigan and the Mississippi River. The Mississippi and St. Croix Rivers form most of the western boundary. About one-half of the northwestern portion of the state is drained through the Chippewa River, while the remainder of this region drains directly into the Mississippi or St. Croix Rivers and into Lake Superior. The Wisconsin River has its source at a small lake nearly 1,600 feet above mean sea level on the Upper Michigan boundary and drains most of central Wisconsin. Most of its tributaries also spring from the many lakes in the north. Except for the Rock River, a Mississippi River tributary which flows through northern Illinois, eastern Wisconsin, drains into Lake Michigan.

Most of the streams and lakes in the state are ice-covered from late November to late March. Snow covers the ground in practically all the winter months except in extreme southern areas including Green County. Flooding is most frequent and most serious in April due to the melting of snow and spring rains. During this period, flood conditions are often aggravated by ice jams which back up the flood waters. Excessive rains of the thunderstorm type sometimes produce tributary flooding or flash flooding along the smaller streams and creeks.[30]

Ten watersheds are contained completely or partially within Green County and include Upper Sugar River, Gordon Creek, Allen Creek and Middle Sugar River, Badfish Creek, Little Sugar River, Lower East Branch Pecatonica Rivers, Lower Middle Sugar River, Jordan and Skinner Creeks, Lower Sugar River, and Honey and Richland Creeks. All but the Badfish Creek watershed is in the Sugar- Pecatonica Water Management Unit (WMU) and drain into the Mississippi River Basin. The Badfish Creek is in the Lower Rock WMU. [31]

Groundwater reservoirs are recharged by direct precipitation. Spring is a prime time for recharge because

[30] http://www.uwex.edu/sco/state.html
[31] http://dnr.wi.gov/water/watershedsearch.aspx

evapotranspiration is low and melting snow and rainfall infiltrate and percolate the water table on unfrozen ground. Fall is another prime time for high recharge. During the summer, groundwater levels drop because precipitation is lower causing losses to evaporation and transpiration to exceed precipitation. In addition, groundwater is lost to surface waters by discharge in the form of springs.30 The winter period normally lacks infiltration because of frozen ground.

Groundwater resources constitute an extremely valuable element of the natural resource base of Green County. The groundwater reservoir not only sustains lake levels and provides the base flow of streams in the county but also comprises a major source of water for domestic, municipal and industrial water users. Like surface water, groundwater is susceptible to depletion in quantity and to deterioration in quality.

WDNR's Outstanding and Exceptional Resource Waters Program provides a designation for Wisconsin's cleanest waters. An outstanding resource water is defined as a lake or stream that has excellent water quality, high recreational and aesthetic value, high quality fishing and is free from point source or non-point source pollution. An exceptional resource water is defined as a stream that exhibits the same high quality resource values as an outstanding resource water, but that may be impacted by point source pollution or that may have the potential for future discharge from a small sewer community. Exceptional resource waters in Green County are:[32]

- Allen Creek - Below Evansville
- Burgy Creek
- Center Branch Hefty Creek
- Gill Creek
- Legler School Branch of the Little Sugar River
- Liberty Creek
- Little Sugar River - Above New Glarus
- N Branch Hefty Creek
- Norwegian Creek
- Pioneer Creek
- Richland Creek
- Ross Crossing Creek
- Spring Valley Creek
- Story Creek
- Sugar Creek
- Sylvester Creek
- Ward Creek

Wisconsin is a state with a large quantity of groundwater and is a critical resource both statewide and within the county. It is the main source of drinking water for 70% of Wisconsin residents and 95% of Wisconsin communities. From 1979 to 2005, total water use in Green County has increased from 6.8 million gallons per day to 8.8 million gallons per day. The increase in total water use is due primarily to an increase in irrigation. The proportion of county water use supplied by groundwater has consistently been about 97% during the period 1979 to 2005.

The state has nearly 11,500 public water systems which meet the daily water needs of about 4 million people. Public water systems that are owned by a community are called municipal water systems and Green County has eight: [33]

- Albany Waterworks
- Bellville Waterworks
- Brooklyn Waterworks
- Brodhead Waterworks
- Browntown Waterworks
- Monroe Waterworks

[32] http://dnr.wi.gov/topic/SurfaceWater/oerw/orwerw_county.pdf
[33] http://wi.water.usgs.gov/gwcomp/find/green/watersystems.html

- Monticello Waterworks
- New Glarus Waterworks
- Pleasant View Nursing Home

Green County obtains all of its domestic drinking water from groundwater sources, including both municipal and private wells. In addition, numerous high-capacity wells exist in the County to serve agricultural and industrial uses. Recharge of the County's aquifers is derived almost entirely from locally occurring precipitation, giving our citizens control over, and responsibility for, their groundwater. Ways to protect groundwater include:

Wellhead Protection Plans and Ordinances: Wellhead protection plans are developed to achieve groundwater pollution prevention measures within public water supply wellhead areas. A wellhead protection plan uses public involvement to delineate the wellhead protection area, inventory potential groundwater contamination sources, and manage the wellhead protection area. All new municipal wells are required to have a wellhead protection plan. A wellhead protection ordinance is a zoning ordinance that implements the wellhead protection plan by controlling land uses in the wellhead protection area. Of the nine municipal water systems, only Albany, Belleville, Browntown, Monroe, and the Pleasant View Nursing Home have wellhead protection plans; none have wellhead protection ordinances.

Animal Waste Management Ordinances: Most Wisconsin counties, including Green County, have adopted an animal waste management ordinance that applies to all unincorporated areas of the county (areas outside of city and village boundaries). While the purposes of such ordinances vary among counties, a key purpose is often to protect the groundwater and surface water resources. This is accomplished by regulations such as:

- Permitting of animal waste storage facilities;
- Permitting of new and expanding feedlots;
- Nutrient management;
- Prohibiting:
  - Overflow of manure storage structures;
  - Unconfined manure stacking or piling within areas adjacent to stream banks, lakeshores, and in drainage channels;
  - Direct runoff from feedlots or stored manure to waters of the state;
  - Unlimited livestock access to waters of the state where high concentrations of animals prevent adequate sod cover maintenance.

Nitrate - The county's aquifers are close to the land surface and their limited natural protection make them vulnerable to pollution. From 1990-2006, 87% of 974 private well samples collected in Green County met the health-based drinking water limit for nitrate-nitrogen with 529 (54%) containing 2-10 mg/L of nitrate-nitrogen (NO_3-N) and serve as indicators that land use has likely affected groundwater quality. Another 125 (13%) of samples exceeded the 10 mg/L limit levels. See the map in Appendix A for locations where limits were exceeded.

In 2006, the Wisconsin DNR and DATCP reported that NO_3- N is the most widespread groundwater contaminant in Wisconsin and that the nitrate problem is increasing both in extent and severity with 80% of nitrate inputs originate from manure spreading, agricultural fertilizers, and legume cropping systems.

Septic systems can also be a significant nitrate source in densely populated areas, areas where fractured bedrock is near the surface, or areas with coarse- textured soils. Additionally, concentrations of NO3-N in private wells frequently exceed the drinking water limit. For example, in 2005 11.6% of 48,818 private wells exceeded the nitrate limit.

Land use affects nitrate concentrations in groundwater with a study of over 35,000 private well samples being three times more likely to be unsafe to drink due to high nitrate in agricultural areas, especially those with sandy areas/highly permeable soils, than in forested areas. Groundwater with high nitrate from agricultural lands is more also more likely to contain pesticides than groundwater with low nitrate levels.

- Pesticides - A pesticide is any substance used to kill, control or repel pests or to prevent the damage that pests may cause. Included in the broad term "pesticide" are herbicides to control weeds, insecticides to control insects, and fungicides to control fungi and molds. Pesticides are used by businesses and homeowners as well as by farmers, but figures for the amounts and specific types of pesticides used are not generally available on a county- by-county basis. A 2005 report indicates that approximately 13 million pounds of pesticides are applied to major agricultural crops in Wisconsin each year, including over 8.5 million pounds of herbicides, 315,000 pounds of insecticides, one million pounds of fungicides, and 3 million pounds of other chemicals (this last category applied mainly to potatoes). The report also shows that herbicides are used on 100% of carrots for processing, 99% of potatoes, 98% of cucumbers for processing, 98% of soybeans, 97% of field corn, 89% of snap beans for processing, 87% of sweet corn, and 84% of green peas for processing. Insecticides are used on 97% of potatoes, 96% of carrots, and 88% of apples. Fungicides are used on 99% of potatoes, 88% of carrots, and 89% of apples. A 2002 study estimated that 62% of private drinking water wells in the region of Wisconsin that includes Green County contained a detectable level of an herbicide or herbicide metabolite. Pesticides occur in groundwater more commonly in agricultural regions, but can occur anywhere pesticides are stored or applied. 21,163 acres of land in Green County are in atrazine prohibition areas.

- Arsenic - Arsenic is an element that occurs naturally in some of Wisconsin's aquifers and may contaminate well water drawn from those aquifers. It is a particular problem in parts of the Fox River valley of northeastern Wisconsin. However, arsenic has been detected in wells in every county in Wisconsin, and arsenic concentrations greater than the drinking water limit of 10 µg/L (micrograms per liter, or parts per billion) have been documented in 51 of Wisconsin's 72 counties. 100% of 10 private well samples collected in Green County met the health standard for arsenic. Of the 10 water samples analyzed for arsenic in Green County, no samples have detectable arsenic and no samples are greater than the recently reduced drinking water limit of 10 µg/L Most private wells in the county have unknown arsenic levels.

- Contaminated Groundwater and/or Soil - Properties that were or are contaminated with hazardous substances can be found using the WDNR's Bureau for Remediation and Redevelopment Tracking System (BRRTS).[34] Green County has 18 open leaking underground storage tank (LUST) sites which have contaminated soil and/or groundwater with petroleum, which includes toxic and cancer-causing substances. However, given time, petroleum contamination naturally breaks down in the environment. There are 14 environmental repair

[34] https://dnr.wi.gov/topic/Brownfields/botw.html

(ERP) sites which are sites other than LUSTs that have contaminated soil and/or groundwater. Examples include industrial spills or dumping, buried containers of hazardous substances, and closed landfills that have caused contamination. There is also one spill site.

- Concentrated Animal Feeding Operations (CAFO) - There have been five concentrated animal feeding operations (i.e., greater than 1,000 animal units) in Green County. Three (i.e., Pinnacle Dairy, LLC; Spring Grove Dairy; Williams Bedrock Bovines Inc.) are have current operating permits and two have expired permits (i.e., Plainview Stock Farm Inc., Valley Mead Farm LLC).[35] CAFOs are required under their Wisconsin Pollutant Discharge Elimination System (WPDES) permits to practice proper manure management and ensure that adverse impacts to water quality do not occur. Permit applicants must submit detailed information about the operation, a manure management plan, plans and specifications for all manure storage facilities, and a completed environmental analysis questionnaire. Once a WPDES CAFO permit is issued, operators must comply with the terms of the permit by following approved construction specifications and manure spreading plans, conducting a monitoring and inspection program, and providing annual reports. Other potential groundwater contaminants from agriculture include fertilizers and pesticides. Large amounts of nitrogen fertilizers are used when fields are planted continuously with corn, and they can leach into groundwater as nitrate.[36]

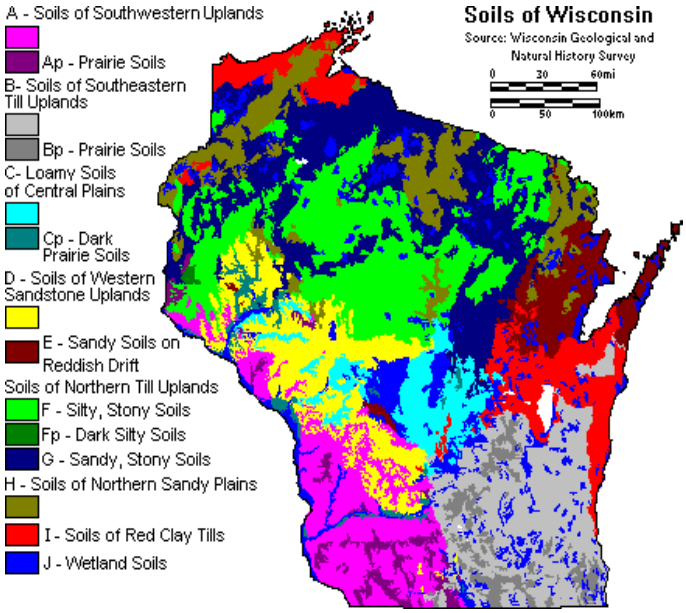
- Licensed Landfills and Superfund Sites – There are no active landfills or Superfund sites in Green County but there are several landfills that have been closed. Green County does operate a Solid Waste Transfer facility in Brodhead.[37]

- Cleanup:
    - Petroleum Environmental Cleanup Fund Award – Over $8 million have been spent in Green County on petroleum cleanup from leaking underground storage tanks, which equates to $238 per county resident. The Petroleum Environmental Cleanup Fund Award (PECFA) program was created in response to enactment of federal regulations requiring release prevention from underground storage tanks and cleanup of existing contamination from those tanks. PECFA is a reimbursement program returning a portion of incurred remedial cleanup costs to owners of eligible petroleum product systems, including home heating oil systems. As of May 31, 2007, $8,499,005 have been reimbursed by the PECFA fund to clean up 61 petroleum-contaminated sites in Green County. This equates to $238 per county resident, which is less than the statewide average of $264 per resident.
    - Nitrate Removal Systems - No municipal water systems in Green County have spent money to reduce nitrate levels. As of 2005, over 20 municipal water systems in Wisconsin have spent over $24 million reducing nitrate concentrations in municipal water systems.

[35] https://dnr.wi.gov/topic/AgBusiness/data/CAFO/cafo_cty.asp?CountyChoice=Green&Submit=Submit
[36] https://dnr.wi.gov/topic/AgBusiness/CAFO/
[37] https://wisconsindnr.shinyapps.io/All_Facilities_w_Waste/

Soil Types

The soil of Green County is similar to that found throughout Wisconsin, which vary from droughty and loamy sands to very poorly drained wet organic soils with a wide range of well drained to moderately well drained, sandy and silty loams between these extremes. In general, most of the soils of Green County are suitable for agricultural pursuits (i.e., farming crops such as corn, soybeans or vegetables and/or livestock production). A Green County digital soil survey was prepared by the Natural Resources Conservation Service and is available for review at http://websoilsurvey.nrcs.usda.gov/app/.



According to the Soil Survey of Green County, Wisconsin[38] there are eight soil associations in Green County.A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soils; it is named for the major soils. They include:

- Dodgeville – Edmund Association – in the central and northwestern parts of the county and consists of gently sloping to moderately steep soils on upland and silty valley fill. These soils are moderately deep to shallow, nearly level to moderately steep soils that have a clayey subsoil; underlain by dolomite bedrock.
- New Glarus – Sogn Association – in the northern and western parts of the county and consists for gently sloping to very steep soils on upland and gently sloping soils make up of valley fill. Soils in the association are moderately deep to shallow over dolomite or sandstone.
- Fayette – Tama Association – west of the Sugar River, south of Albany and west of Brodhead. It is on a high bench left by the glacial Sugar River as it meandered across the valley.
- Dunbarton – Whalen Association – mostly in the southern one-third of the county on uplands and high benches, equaling about 14% of the county. Slopes are gently sloping to moderately steep. Many different kinds of soils formed in many different kinds of material in the association. Except for major soils, the proportion of each individual soils is relatively small in respect to the overall association. Dunbarton soils make up about 20% of the association, Whalen soils about 10%, and minor soils 70%.
- Hebron – Saylesville Association – is on very low to high benches in old lake basins. It is mostly in the Sugar River valley east of Albany and north of Brodhead. Another very small area is southwest of Browntown. This association occupies about 1% of the county. Hebron soils make up about 50%, Saylesville soils about 10%, and minor soils about 40%.
- Orion – Huntsville – Ettrick Association – is on low benches and bottoms in stream valleys throughout the county and it subject to flooding. The association covers about 14% of the county and is deep, nearly level and gently sloping that are silty throughout. Orion soils make up about 17% of the association, Huntsville about 5%, Ettrick about 13%, and minor soils about 55%.

[38] https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/wisconsin/WI045/0/Green_WI.pdf

- Durand – Myrtle – Rockton Association – is in the southern part of the county on uplands and high benches. The soils are gently sloping to moderately steep. Natural vegetation is prairie grasses. Many different kinds of soil is formed in many different kinds of material in this association. Except for major soils, the proportion of each individual soils is relatively small in respect to the overall association. This association covers about 6% of the county and is moderately deep and deep, gently sloping to moderately steep soils that have a loamy subsoil and substratum on glaciated uplands. Durand soils make up about 20% of the association, Myrtle about 9%, Rockton Soils about 8%, and minor soils about 63%.
- Dickinson – Meridian Association – is on benches of the Sugar River, Allen Creek, Story Creek, and the Little Sugar River. Slopes are dominantly nearly level and gently sloping. These soils are deep, nearly level to sloping soils that have a loamy subsoil underlain by outwash sand or sand and gravel. This association occupies about 4% of the county with Dickinson soils making up about 25%, Meridian about 19% and minor soils about 56%.

Wetlands

From the sedge meadows of southern Wisconsin to the spruce bogs in the north, wetlands cover a wide array of landscapes. They share in common the ability to support aquatic or "water loving" plants, and provide habitat for more species of plants and animals than any other type of landscape in Wisconsin.

Habitat is not their only functional value. Wetlands can also store water to prevent flooding, purify water, protect lake and stream shores from eroding and provide recreational opportunities for wildlife watchers, anglers, hunters, and boaters.[39]

Because wetlands provide many benefits to the environment, several municipal, state and federal ordinances/regulations protect wetland areas. The basic concept associated with these laws is that wetland areas on any property cannot be disturbed without a permit. Wetlands store flood waters and filter water from precipitation before it enters lakes and streams. Some wetlands also recharge local groundwater aquifers. By slowing water movement, wetlands reduce the likelihood that heavy rainfall or spring snowmelt will cause erosion and flooding. Wetlands retain eroded soil and hold nutrients that would otherwise promote excessive weed growth and algae blooms in lakes and streams. These nutrients, when held in the wetlands, produce a heavy growth of vegetation that provides nesting sites, food, and cover for waterfowl, small mammals, and many other types of wildlife. Wetlands also provide recreational opportunities for humans (wildlife observation, hiking, hunting, etc.). There are three basic factors in determining whether or not a property is a wetland:

- The presence of water at, near or above the surface (hydrology).
- Water present long enough to sustain aquatic plant life (hydrophytic vegetation).
- Soils indicative of wet conditions (hydric soils).

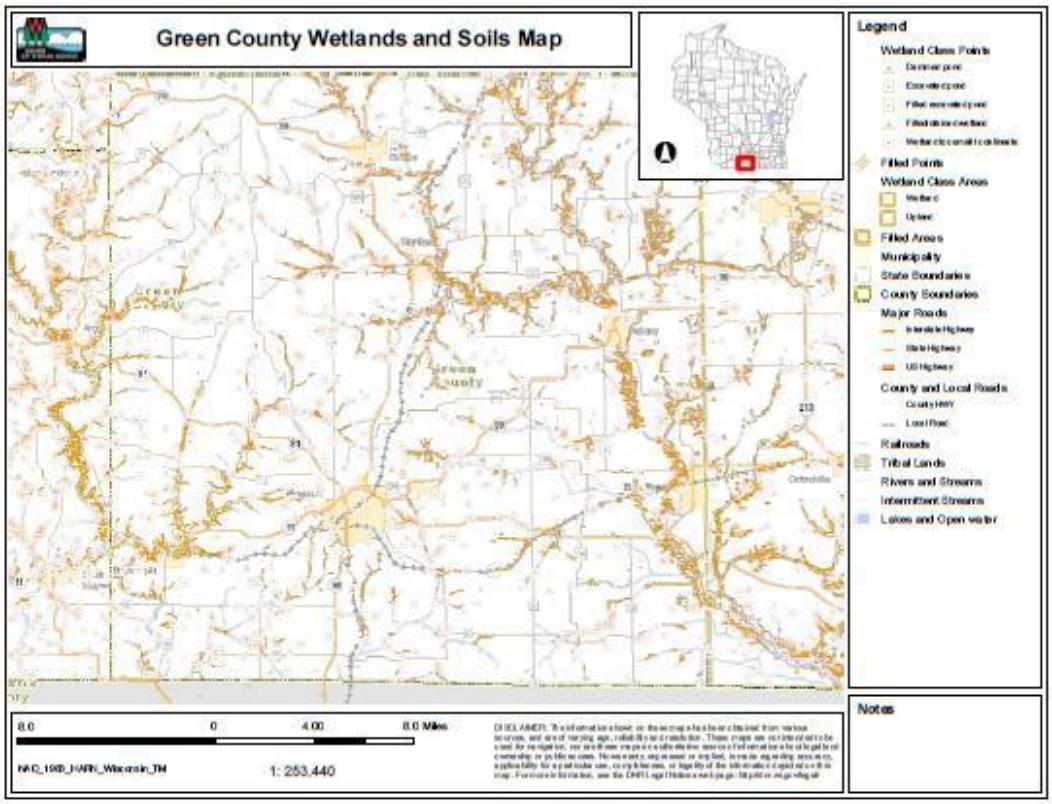
It is important to note that “wetlands” are not only associated with the presence of water. It is possible for a property to have standing water for a portion of the year but not be a wetland; it is also possible that a true wetland with all three of the above characteristics may never have water present above the land surface.

There are two main levels of jurisdiction (often overlapping) concerning wetlands in Green County are

[39] http://dnr.wi.gov/wetlands

the Wisconsin Department of Natural Resources and municipal zoning agencies. The Planning and Zoning Department has jurisdiction over wetlands in county zoning plans while wetlands within city or village boundaries are also subject to the appropriate municipality's regulations.

According to the Wisconsin Department of Natural Resources, Green County has approximately 12,301 acres of wetlands(approximately 3.3% of its total area). This is 0.2% of the total statewide acreage of wetlands.[40]



Land Use

The land in Green County consists of farmland, shoreland and forests as well as commercial, residential and industrial land. The total area is 583.99 square miles. Of that area, approximately 0.58 square miles (350 acres) are surface water in its five lakes and the three main rivers (i.e., Little Sugar, Pecatonica, Sugar).

The Wisconsin Department of Revenue (WDOR) tax assessment data classifies the land use in Green County as follows:[41]

- Agricultural (Includes WDOR categories of Forest, Agricultural Forest and Other) - Lands devoted primarily to agriculture, small-scale agricultural forestation and lands that are producing, or are capable of producing, commercial forest products (as defined by State of Wisconsin Statute 70.05) and other supporting activities. Also includes lands containing dwelling units and related

[40] http://dnr.wi.gov/topic/wetlands/acreage.html
[41] https://revenue.wi.gov/SLFReportsassessor/2016socGRE.pdf

improvements associated with agricultural use. This category does not include forests or woods that are in parks or that are not being forested under WDOR definitions.

- Residential - Lands containing dwelling units and related improvements not associated with agricultural use.
- Commercial - Lands, including improvements, devoted primarily to commercial operations, including, but not limited to dining, lodging, and retail sales establishments.
- Manufacturing - Lands, including improvements, devoted primarily to manufacturing and industrial operations, including, but not limited to, assembling, processing, and fabricating.
- Undeveloped - Lands generally unfit for any of the aforementioned uses, including, but not limited to, parks, hunting grounds, wetlands, ponds, gravel pits, and road rights of way.

Land Use and Development Trends

Green County is primarily a rural community in the southern portion of the state. The county has some natural areas that will not be developed and some rural farming areas as well as light manufacturing and other primarily service businesses that have chosen to locate in the area.

The county has been experiencing fairly rapid growth and at a greater increase than the state as a whole. As of the time of this plan, it is expected that this growth trend will continue. Permitting for construction projects is managed by incorporated municipalities (i.e., cities and villages) for projects within their own boundaries; Green County permits development for unincorporated areas (i.e., the towns).

Demographics

According to the 2021 U.S. Census Bureau estimate, there are approximately 36,988 people residing in Green County.[42] According to the 2021 U.S. census report, there are 15,240 households in Green County with an average of 2.39 people per household. The 2021 U.S. census numbers indicate that the median household income is $66,212 and that the per capita income is $34,872. Approximately 7.4% of the people live below the poverty line.

According to the 2021 Census report, the majority of people in Green County reported that they were white. People of Hispanic or Latino origin were counted as a subcategory of those reporting that they were white, as another race, or as two or more races.

Education and Employment

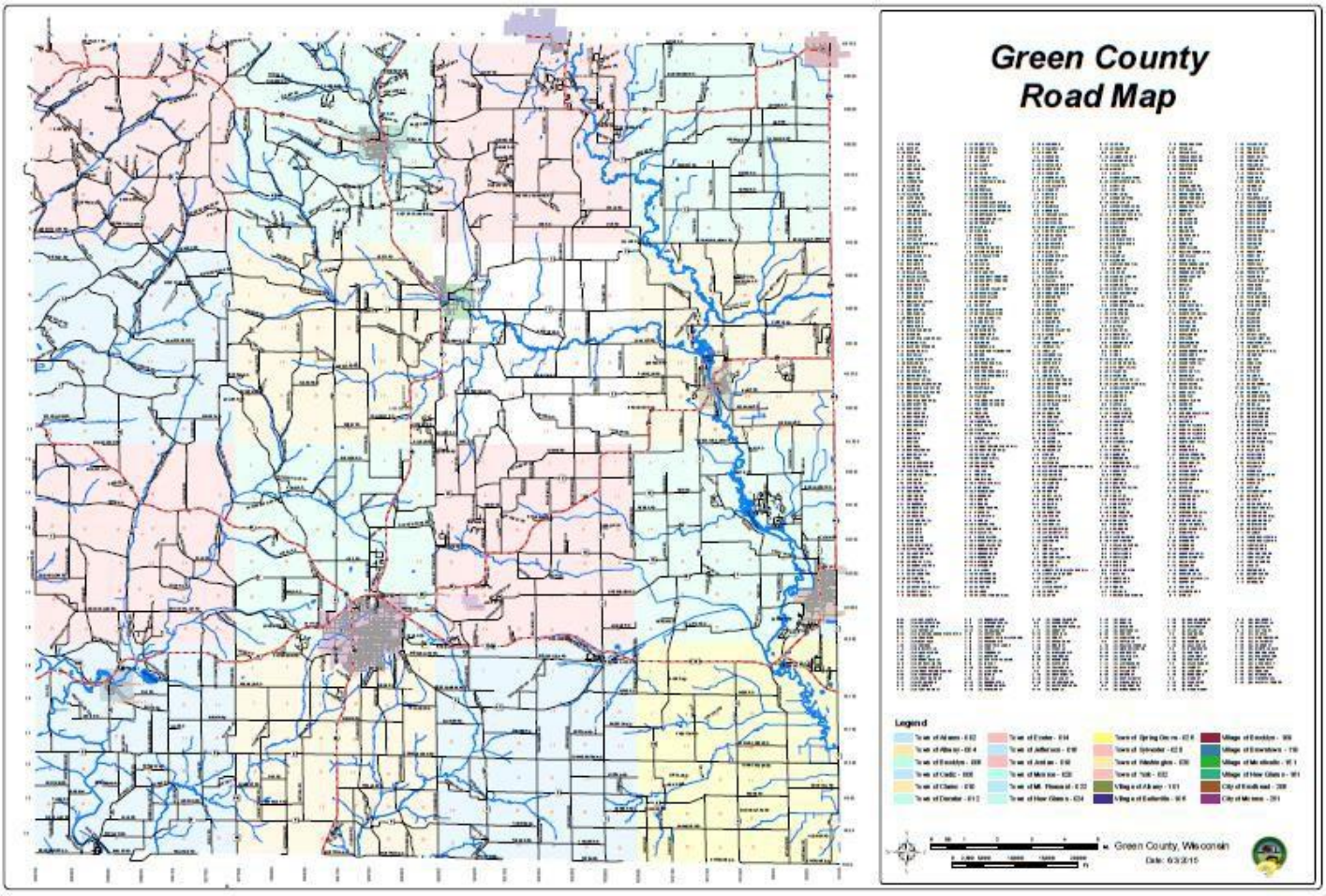
According to the 2021 US Census report, in 23.3% of Green County's population had a bachelor's degree or higher. The percentage of the population with a high school degree, equivalent, or higher was 92.3%.

Transportation Network

Green County's road network of highways and local roads connect the county's inhabitants and visitors to commercial, recreational, and educational sites. Roadways in the county are categorized by a functional classification system based on the level of service the roadway provides in carrying vehicular traffic. Functional road classifications for rural areas include principal arterials, minor arterials, major collectors, minor collectors and local roads. The map in Appendix A shows the various roads in the county. Several important roadways

[42] https://www.census.gov/quickfacts/fact/table/greencountywisconsin/PST045221

bisect and cross the county, including US Highways 11, 39, 59, 78, 69, 81, 92, and 104. These roadways, along with a network of county highways, support the majority of the traffic movement within the county and between its neighbors.



Green County has a good transportation network and has maintained this infrastructure to provide a safe and efficient transportation system. With continued maintenance, these systems will continue to serve the population effectively.

Airports, aviation, and aviation-related industries play a significant role in the economic success of many Wisconsin communities. Airports within Green County include:

- Monroe Municipal Airport
- Kelly Airport – 53WI
- Albany Airport- W150
- Brodhead Airport – C37

Public Safety Support

Medical

The Green County Office of Emergency Management, city and county emergency services responders, hospital emergency staff and various departments have developed medical and mass casualty plans. These plans will be used in the event of a disaster. Green County is served by a variety of health facilities and health professionals. These health care facilities will coordinate with responding agencies to ensure the best utilization of services and the least injury or loss of life from a disaster situation.

The Monroe Clinic is the only hospital within Green County, located at 2005 Firth Street in Monroe. Green County relies on a mix of volunteer, paid-on-call and paid staff to provide pre-hospital emergency medical services to its service areas. Details for pre-hospital medical units and their licensing levels are listed below:[43]

# of agencies:	Rural	Small Urban
11	27%	73%

Service Name	Address	City	License Level
Albany Area Emergency Medical Service	208 N Water Street	Albany	AEMT
Albany Community VFD	205 N Mechanic St	Albany	EMR
Brodhead Area EMS Inc	1003 12th St	Brodhead	EMT
Brodhead Fire Dept First Responders	1100 West 3rd Avenue	Brodhead	EMR
Browntown Fire and First Response	107 S Mill St	Browntown	EMR
Green County Emergency Medical Service Inc	1800 12th Street	Monroe	Paramedic
Juda First Response	N2350 County Road S	Juda	EMR
Monroe Fire Department First Responders	601 W 17th St	Monroe	EMR
Monticello First Responders	412 N Main St	Monticello	EMR
New Glarus Area Emergency Medical Service	401 3rd St	New Glarus	AEMT
New Glarus Fire Dept	218 4th Ave	New Glarus	EMR

Additionally, Belleville, Brooklyn, Blanchardville and Argyle EMS service jurisdictions include portions of Green County. Each of these departments provides monthly training to their staff and they participate in periodically scheduled disaster exercises with area hospitals, other emergency medical services, law enforcement, fire services, and emergency management.

Fire Service

There are 12 Fire Departments in Green County, Wisconsin, serving a population of 36,869 people in an area of 584 square miles. There is 1 Fire Department per 3,072 people, and 1 Fire Department per 48 square miles.[44] Some county fire departments also feature specialized skills such as water rescue/dive, hazardous materials and confined space entry. Additional details for fire departments are listed below:

- Albany Community Fire Department: 305 N. Mechanic Street, Albany
- Argyle Adams Fire Department: 109 N Broad St., Argyle[45]
- Belleville Fire: 33 E Main St., Belleville[46]

[43] https://worh.org/resources/data-maps/maps/interactive-map/
[44] https://www.countyoffice.org/wi-green-county-fire-departments/
[44]Argyle, Blanchardville, South Wayne, and Woodford are all housed in Lafayette County but have some service area in Green County
[45] The Belleville F.D. is stationed in Dane County but has some service area in Green County.

- Blanchardville Fire Department: 208 Mason Street
- Brodhead Fire Department: 1103 W. 3rd Avenue, Brodhead
- Brooklyn Fire Department: 104 S. Rutland Avenue, Brooklyn
- Browntown-Cadiz-Jordan Fire District: 107 S. Mill Street, Browntown
- Juda and Community Fire Department: N2350 County Road S, Juda
- Monroe Fire Department 1110 18th Avenue, Monroe
- Monroe Rural Fire Department (Fire Only), 840 W. 8th St, Monroe, WI
- Monticello Fire Department 412 N. Main Street, Monticello
- New Glarus Fire Department 218 4th Avenue, New Glarus
- South Wayne Fire Department: 107 East Center Street, South Wayne
- Woodford Volunteer Fire Department: 10710 Main St., Woodford

Law Enforcement

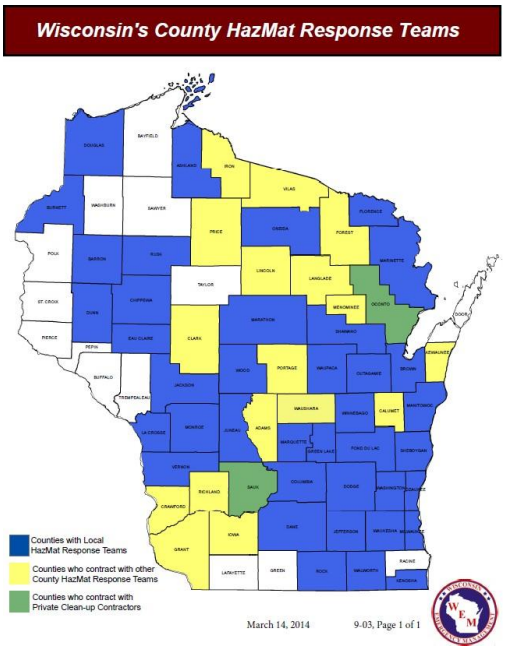
Several departments in Green County are responsible for law enforcement duties within the county. The Green County Sheriff's Office provides deputies for unincorporated areas of the county, and those without full-time coverage. Also, the Wisconsin State Patrol provides limited coverage from their Southwest Region office in De Forest. [47]Additional details for law enforcement agencies are listed below:

- Albany Police Department: 206 N. Water Street, Albany
- Belleville Police Department: 31 E. Main St., Belleville[48]
- Brodhead Police Department: 1004 W. Exchange Street, Brodhead
- Green County Sheriff's Office: 2827 Sixth Street, Monroe
- Monroe Police Department: 1811 12th Street, Monroe
- Monticello Police Department: 140 N. Main Street, Monticello
- New Glarus Police Department: 313 Second Street, New Glarus
- Dane County Sheriff's Office provides services to the Village of Brooklyn

Special Teams

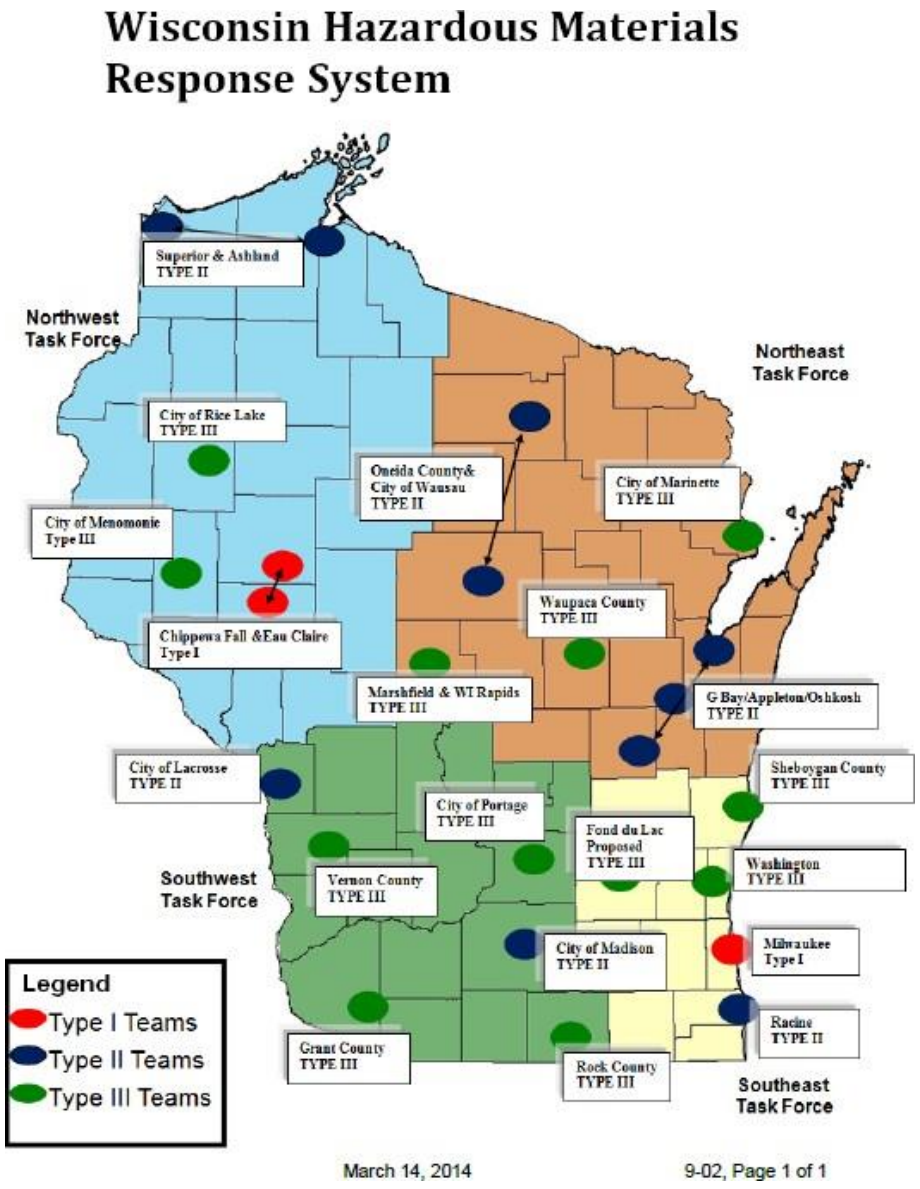
Hazardous materials (HazMat) response is performed by Type II and Type III Teams in the Southwest Task Force. 52 Wisconsin Emergency Management contracts and manages twenty-two Regional Hazardous Materials Response Teams. The teams are divided into Task Forces: Northeast Task Force, Northwest Task Force, Southeast Task Force and the Southwest Task Force. These Task Forces are then divided into Type I, Type II and Type III teams, all with complimentary capabilities and training requirements.

The Wisconsin Hazardous Materials Response System may be activated for an incident involving a hazardous materials spill, leak, explosion, injury or the potential of immediate threat to life, the environment, or property. The Wisconsin Hazardous Materials Response system responds to the most serious of spills and releases requiring the highest level of skin and respiratory protective gear. This includes all chemical,



[47] https://wisconsindot.gov/Documents/about-wisdot/who-we-are/dsp/dsp-regions-map.pdf
[48] The Belleville P.D. is stationed in Dane County but have some service area in Green County.

biological, or radiological emergencies.
Local (County) Hazardous Materials Response Teams respond to chemical incidents which require a lower level of protective gear but still exceed the capabilities of standard fire departments. Forty counties currently have level 4 Hazardous Materials Response Teams. Those teams may provide assistance to surrounding counties and are approved by the Local Emergency Planning Committees.



Archaeological and Historical Resources

The National Register of Historic Places also includes a listing of locations in Green County.54 As mitigation projects are considered, the county is committed to ensuring that archaeological and historical sites are preserved.

Historic Sites		
Historic Site Name	Address	Municipality or Township
Bingham, Judge JohnA., House	621 14th Ave.	Monroe
Bintliff, Gen. James,House / Edmund C. Hamilton House	723 18th Ave.	Monroe
Blumer, Dr. Samuel,House	112 Sixth Ave.	New Glarus
Cadiz Township JointDistrict No. 2 School /Browntown State-- Graded School	214 School St.	Browntown
Caradine Building /Wells Block	1007 16th Ave	Monroe
Chenoweth, Frank L.,House	2004 10th St.	Monroe
Chicago, Milwaukeeand Saint Paul Railroad Depot / Sugar River State Trail Office	418 Railroad St.	New Glarus
Cleveland's Hall andBlacksmith Shop/ Heathmans	N7302 County Trunk HwyX	Brooklyn
Blacksmith Shop/Modern Woodmen ofAmerica's		
Exchange SquareHistoric District	Roughly bounded by 10th,RR tracks, E. 2nd and W. 3rd Ave	Brodhead
First MethodistChurch	11th St. and 14th Ave.	Monroe
Freitag Homestead /Hillside Dairy	N7053 WI 69/39	Washington
Freitag's Pure Oil Service Station / PureOil Cottage Style Service Station	1323 9th St.	Monroe
Green CountyCourthouse	Courthouse Sq.	Monroe
Hefty--Blum Farmstead / Meadowbrook Dairy Farm	W6303 Hefty Rd.	Washington
Hulburt, C.D., House	1205 13th Ave.	Monroe
Jennings, Janet,House	612 22nd Ave.	Monroe
Monroe Commercial District	Roughly bounded by 15th and 18th Aves., 9th and 13th St.	Monroe
Monroe Water Tower	16th Ave. and 20th St.	Monroe
New Glarus Public School and High School / New GlarusElementary School	413 Sixth Ave.	New Glarus
New Glarus Town Hall	206 2nd St.	New Glarus
Regez, Jacob, Sr.,House	2121 7th St.	Monroe
Smith Francis West House/Addie Blackburn House	1002 W. 2nd Ave.	Brodhead
Steinman, John C. and Barbara, House	330 S. Monroe St.	Monticello
West, Gen. Francis. House/The Octagon House	1410 17th Ave.	Monroe
White, F. F., Block /Drapery House	1514-1524 11th St.	Monroe

Wilhelm Tell Scheutzen Haus and Park	N8745 County Hwy O, Town of New Glarus	New Glarus

The Wisconsin Historical Society maintains a list of archaeological sites and cemeteries known as the Archaeological Site Inventory Database (ASI); this list is available to governmental agencies upon request. These sites cover an extended period of time, and include campsites/villages/communities, cabins/homesteads, sugar mapling sites, cemetery/burial/ mounds, trading/fur posts, mill/sawmills and kilns.

All of these sites have been reported to the State Historical Society of Wisconsin and are protected sites. If there is concern that a mitigation project will impact one of these or any other identified or suspected archeological site, the county will work with the proper authorities to ensure that all applicable laws and regulations are followed.

Chapter 3: Hazard Analysis & Mitigation Strategies

Hazard Identification & Vulnerability Assessment

One of the bedrock principles of emergency management is to approach issues from an all-hazards perspective. This is generally very cost effective because it accomplishes preparedness and/or mitigation goals for many types of disasters with one resource. The following sections identify those hazards that have occurred or could occur in Green County. Each includes a description of a hazard and its frequency of occurrence. Also included is a section that describes the general vulnerabilities of the community and its infrastructure to each particular type of hazard. More detailed and specific analyses will be conducted as projects are identified for inclusion in grant applications. As part of the application process, the methodology of data collection and future development patterns will be addressed. Estimates of potential dollar losses and the methodology used to arrive at those estimates will also be described during this application process.

Wisconsin Emergency Management (WEM) completed and regularly updates the State Hazard Mitigation Plan, which was last revised in 2021. This plan describes the hazards that have occurred or are most likely to occur within the state and includes the frequency of occurrence, potential impacts, and suggested actions to mitigate the hazard. This plan is the basis for the development of all emergency management plans and is distributed upon revision to county emergency government directors and other stakeholder agencies.

The Green County Emergency Management Director develops and annually updates a listing of all hazards that have occurred or could occur within the county. This listing includes the definition, frequency of occurrence, and actions to mitigate the hazard. In general, the threat of most hazards is consistent throughout the county.

For this plan, all municipalities within Green County were provided with a survey that requested information regarding types of disasters the community had faced in the past. The chart below illustrates the responses received based on type of event and occurrence timeline.

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought	2	3	4	2	2
Dust Storm	0	0	0	2	10
Earthquake	0	0	0	0	12
Flood	1	9	4	2	1
Lakeshore Erosion	1	1	1	1	12
Landslide/ Debris Flow	0	1	0	1	10
Wildfire	0	1	0	0	11
Windstorm/ Tornado	2	7	2	3	1
Winter Storm/ Ice Storm	4	10	3	2	0
Hazardous Materials Spill	2	2	3	1	5
Cybersecurity	2	1	0	0	8
Other:	0	0	0	0	0

Additionally, communities were asked to rate the type of events that they were at risk for. The chart below illustrates summary of communities who completed the survey based on the level of concern and event.

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	0	3	5	4	0
Dust Storm	0	0	0	1	11
Earthquake	0	1	7	2	12
Flood	4	1	0	2	0
Lakeshore Erosion	0	0	0	1	12
Landslide/ Debris Flow	1	0	2	1	11
Wildfire	0	1	5	5	7
Windstorm/ Tornado	5	3	6	2	0
Winter Storm/ Ice Storm	5	3	4	2	1
Hazardous Materials Spill	0	2	2	5	1
Cybersecurity	4	0	1	2	3

The emphasis in the following sections is on mitigation activities for each hazard as a major component of overall emergency management. Mitigation or prevention activities reduce the degree of long-term risk to human life and property from natural and man-made hazards. The cooperation of government, academia, the private sector, and volunteer agencies is essential in mitigation efforts. The Green County Emergency Management Office is committed to working with municipalities and the private sector to ensure that county mitigation information is shared and it is incorporated into their planning as appropriate.

Each community will be given a copy of the plan to use as a reference during their own preparedness activities (i.e., planning, training, permitting, zoning). Communities that have their own comprehensive plan will reference this mitigation plan and its contents in the next scheduled plan update. Municipalities that do not have comprehensive plans either are under the purview of and request assistance from the Green County Planning and Zoning Department or have their own planning departments. Members of the County Planning and Zoning Department and municipal planning departments were included on the Hazard Mitigation Workgroup and are aware of the benefits and requirements associated with use of this plan as they go about their preparedness activities.

Green County and its municipalities have a history of identifying, planning, and completing hazard mitigation projects including the following, which received supplemental funding:

Community Development Block Grant (CDBG) Emergency Assistance Program (EAP) Projects:

- EAP #07-10 Green County: Rehabilitation of damaged housing units, replacement of wells/septic systems and water/sewer lines, construction of replacement housing units, demolition and clearance of hazardous structures, acquisition/relocation and LiDAR for $646,760.
- CDBG- Emergency Assistance Program Grant in 2008 to assist in the recovery and rehabilitation of home damage by severe flooding for $275,000.

Additionally, the following table shows the Public Assistance awarded based on July 1996 flooding that impacted Green County:

Name/Date of event	Area affected	Public Assistance awarded yes/no	Total Amount of Public Assistance Received
July 1996 Flooding	Browntown Fire Department	yes	$ 2,029.50
July 1996 Flooding	Green County HWY Department	yes	$ 77,345.50
July 1996 Flooding	Green County Emergency Mgnmnt	yes	$ 800.00
July 1996 Flooding	Green County Sheriff's Dept.	yes	$ 2,301.00
July 1996 Flooding	City of Monroe	yes	$ 16,850.00
July 1996 Flooding	Pecatonica Rail Transet	yes	$ 132,683.00
July 1996 Flooding	Monroe City Waste Water Treatment	yes	$ 65,256.00
July 1996 Flooding	Tri-County Trail	yes	$ 3,430.00
July 1996 Flooding	Adams	yes	$ 5,986.50
July 1996 Flooding	Cadiz	yes	$ 14,111.00
July 1996 Flooding	Clarno Township	yes	$ 43,925.00
July 1996 Flooding	Decatur	yes	$ 13,761.00
July 1996 Flooding	Jefferson Township	yes	$ 22,291.00
July 1996 Flooding	Jordan Township	yes	$ 15,469.00
July 1996 Flooding	Town of Monroe	yes	$ 12,696.00
July 1996 Flooding	Monticello-Village	yes	$ 29,576.50
July 1996 Flooding	Mt. Pleasant	yes	$ 7,958.00
July 1996 Flooding	Spring Grove Township	yes	$ 10,468.00
July 1996 Flooding	Washington Township	yes	$ 12,978.50
July 1996 Flooding	York Township	yes	$ 2,866.00
Totals:			**$ 492,781.50**

General Hazard Mitigation Strategies

In general, most of the projects that can be done with current budgetary dollars are not capital improvement projects and are not very expensive. Projects that require significant capital outlays are, for the most part, grant-dependent. Since the profile (e.g., economic, geographic) of an area may change between the identification of a project in this plan and the availability of grant funds, projects will be identified within the plan and be slated for detailed study and analysis at such time as grants become available. The detailed study will identify the types and numbers of existing and future structures, the potential dollar losses to vulnerable structures, and the lead agency or department who will manage the project. At that point, grant-eligible projects will be evaluated using the appropriate grant criteria for factors such as overall benefit to the community, economic feasibility (i.e., a cost-benefit analysis) and compliance with environmental, social justice and other laws.

It was noted by the workgroup that there are several opportunities for grant funding from various federal and state resources including:

- HMGP - The Hazard Mitigation Grant Program (HMGP) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under the Presidential major disaster declaration, in the areas of the state requested by the governor.[49]
    - DR-1131 (1996) – City of Monroe: Construction of a detention pond for $143,311; Additional $36,218 provided locally.

[49] http://www.fema.gov/hazard-mitigation-grant-program,

- DR-1933 (2013) – A tornado/storm shelter was placed in the Willows Manufactured Community Mobile Home Park in Monroe for $69,105.

- PDM - The Pre-Disaster Mitigation (PDM) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future major disaster declarations.[50]
  - PDM Plans Funded: 2002 – Green County: New PDM plan funded for $10,406.
  - PDM Mitigation Grant – Martintown House buy out

- FMA - The Flood Mitigation Assistance (FMA) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). Targeting Repetitive Loss Properties and Severe Repetitive Loss properties, this program has the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.[51]

- SRL - The Severe Repetitive Loss (SRL) program is authorized by Section 1361A of the NFIA has the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.[52]

- RFC - The Repetitive Flood Claims (RFC) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108–264), which amended the National Flood Insurance Act (NFIA) of 1968 (42U.S.C. 4001, et al). Up to $10 million is available annually for the Federal Emergency Management Agency (FEMA) to provide RFC funds to assist states and communities to reduce flood damages to insured properties that have had one or more claims to the National Flood Insurance Program (NFIP). FEMA may contribute up to 100 percent of the total amount approved under the RFC grant award to implement approved activities, if the applicant has demonstrated that the proposed activities cannot be funded under the FFMA program.[53]

  - There are three (3) properties within Green County identified as repetitive loss properties. This includes 794 E Lake Ave in Monticello (single family home), 126 N. Main St. in Montello (business) and N1948 Dill Road (single family home) in Browntown.

- 406 Mitigation – The Public Assistance-Section 406 Mitigation Funding may be considered by FEMA in a federal disaster declaration to fund mitigation measures to a public facility damaged by the event that enhance the facility's ability to resist similar damage in future events. This funding is authorized under Section 406 of The Robert T. Stafford Disaster Relief and Emergency Assistance Act and provides discretionary authority to fund mitigation measures in conjunction with the repair of the disaster-

[50] http://www.fema.gov/pre-disaster-mitigation-grant-program
[51] http://www.fema.gov/flood-mitigation-assistance-program
[52] http://www.fema.gov/severe-repetitive-loss-program
[53] http://www.fema.gov/repetitive-flood-claims-program

damaged facilities, which usually present themselves during the repair efforts. The mitigation measures must be related to eligible disaster- related damages and must directly reduce the potential for future, similar disaster damages to the eligible facility. This work is performed on the parts of the facility that were actually damaged by the disaster and the mitigation provides protection from subsequent events. Mitigation measures must be determined to be cost-effective, technically feasible, and in compliance with statutory, regulatory, and executive order requirements. In addition, the measure cannot cause a negative impact to the facility's operation, surrounding areas, or susceptibility to damage from another hazard.[54]

- CDBG – The U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant- Disaster (CDBG) Recovery Assistance provides flexible grants to help cities, counties, and states recover from Presidentially-declared disasters, especially in low-income areas, subject to availability of supplemental appropriations. In response to disasters, Congress may appropriate additional funding for the CDBG program as disaster recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process. Since CDBG Disaster Recovery assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources. Disaster Recovery grants often supplement the disaster programs of FEMA, the SBA, and the U.S. Army Corps of Engineers (i.e., these funds can be used for the local matching requirement of other federal grants).[55]

- Municipal Flood Control Grant Program - This Wisconsin Department of Natural Resources (DNR) grant is available to all cities, villages, towns, tribes and metropolitan sewerage districts. Assistance is provided with items such as the acquisition of property, vacant land, structure removal, flood proofing, administrative support, and others.[56]
    - 2004-05 (MFC-23251-04-30th) City of Monroe: 3 acquisitions and construction of flood control basin for $369,442.50.
    - 2004-05 (MFC-23251-04-Villa) City of Monroe: Acquisition of vacant land and construction of detention basin for $68,180.00.
    - 2004-05 (MFC-51008-04) Town of Mt. Pleasant: 12 acquisitions, 1 easement and 1 channel for $394,040.00.

- Dam Removal Grant Program - This Wisconsin DNR grant is available to all cities, villages, towns, tribes and metropolitan sewerage districts and provides 100% of eligible project costs up to a maximum of $50,000 to remove a dam. Assistance is provided with items such as: the acquisition of property, vacant land, structure removal, flood-proofing, administrative support, and others.[57]

[54] http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit/hazard-mitigation-funding-under-section-406-0
[55]http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/drsi
[56] http://dnr.wi.gov/Aid/MunFloodControl.htm
[57]http://dnr.wi.gov/aid/damremoval.html

Drought and Dust Storms

Two types of droughts occur in Wisconsin: agricultural and hydrologic. Agricultural drought is a dry period that 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 droughts may, but do not necessarily, occur together.

Agricultural drought in a Wisconsin corn field in 2012.

Dust storms result from a combination of high winds and dry, loose soil conditions. While high winds and periods of drought have each occurred in Green County, there has never been a recorded dust storm event. Since natural hazards that have occurred in the past are more likely to occur in the future, it is unlikely that a dust storm event will occur in Green County. This assertion is further bolstered by the fact that there is very little irrigation done within the county and that the soils in Green County are not prone to blowing. While there are concerns about topsoil erosion and some mitigation activities may be planned that would reduce the effects of these types of events, they will not be a major focus of this plan.

Physical Characteristics

The understanding that a deficit of precipitation has different impacts on groundwater, reservoir storage, soil moisture, snowpack, and streamflow led to the development of the Standardized Precipitation Index (SPI) in 1993. The SPI quantifies the precipitation deficit for multiple time scales. These time scales reflect the impact of drought on the availability of the different water resources. Soil moisture conditions respond to precipitation anomalies on a relatively short scale. Groundwater, streamflow, and reservoir storage reflect longer- term precipitation anomalies. For these reasons, the SPI is calculated for 3-, 6-, 12-, 24-, and 48-month time scales.

The SPI calculation for any location is based on the long-term precipitation record for a desired period. This long-term record is fitted to a probability distribution, which is then transformed into a normal distribution so that the mean SPI for the location and desired period is zero. Positive SPI values indicate greater than median precipitation and negative values indicate less than median precipitation. Because the SPI is normalized, wetter, and drier climates can be represented in the same way and wet periods can also be monitored using the SPI.

The classification system shown in the SPI values table (below) defines drought intensities resulting from the SPI. The criteria for a drought event are also defined for any of the time scales. A drought event occurs any time the SPI is continuously negative and reaches an intensity of -1.0 or less. The event ends when the SPI becomes positive. Each drought event, therefore, has a duration defined by its beginning and end and an intensity for each month that the event continues. The positive sum of the SPI for all the months within a drought event can be termed the drought's "magnitude". Current SPI maps for the United States can be found online.[58]

[58] http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/spi.htm.

The Palmer Index is an older scale and is used more often by governmental organizations. It is effective in determining long-term drought (i.e., over several months) and is not as good with short-term forecasts (i.e., weeks). It uses a zero as normal; drought is shown in terms of negative numbers and excess moisture is reflected by positive figures. The future incidence of drought is highly unpredictable and may also be localized, making it difficult to determine probability with any accuracy.

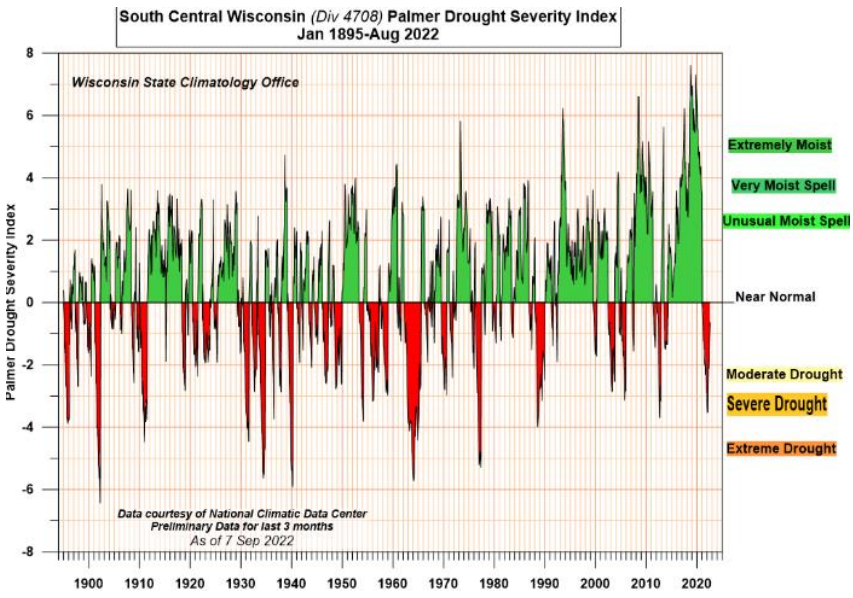
SPI Values	
2.0+	Extremely wet
1.5 to 1.99	Very wet
1.0 to 1.49	Moderately wet
-0.99 to 0.99	Near normal
-1.0 to 1.49	Moderately dry
-1.5 to -1.99	Severely dry
-2.0 and less	Extremely dry

Drought conditions may vary from below-normal precipitation for a few weeks to a severe lack of normal precipitation for several months. Drought primarily affects agricultural areas because the amount and timing of rainfall has a significant impact on crop production. The severity of a drought cannot therefore be completely measured in terms of precipitation alone but must include crop yields.

Frequency of Occurrence

Drought is a relatively common phenomenon in Wisconsin and has occurred statewide in 1895, 1910, 1939, 1948, 1958, 1976, 1988, 1992, 2003, and 2005. The 1976 drought received a Presidential Emergency Declaration with damage to 64 Wisconsin counties. Estimated losses of $624 million primarily affected the agricultural sector. Reports show that Green County was as affected as the rest of the state in this drought, receiving money for emergency feed programs for livestock and for increased fire protection of its wilderness areas. It should be noted that only 19% ($119,434,924) of this loss was compensated by any federal program.

The 2012 heat wave resulted in significant droughts across more than half the country as well as increases in heat related illnesses and deaths. July, 2012 was the hottest month in US history, eclipsing the record set during the heart of the Dust Bowl in 1936. The worst of the heat was in the Midwest, the Plains, and along the Eastern Seaboard. Most of the contiguous US had record and near-record warmth for the seven-month period, except the Pacific Northwest, which was near average. The August 7, 2012 Drought Monitor map shows 52.27% of the United States and Puerto Rico in moderate drought or worse with Green County in the D2 – Severe Drought category.[59] The Palmer Index chart for the years between January, 1895 and August, 2022 in South Central Wisconsin, which includes Green County, follows:[60]



[59] 2012 Heat & Drought Federal Report, HHS ESF 8, UPDATE #2, U.S. Department of Health and Human Services, Assistant Secretary for Preparedness and Response

[60] http://www.aos.wisc.edu/~sco/clim-watch/graphics/pdsi-ts-08-l.gif

As can be seen from the frequency table above, Green County regularly experiences drought to at least a moderate level two to three times every ten years. While drought is a regular occurrence, it is generally very difficult to predict with any accuracy; however, according to the Wisconsin Hazard Mitigation Plan, "the NWS and National Integrated Drought Information System (NIDIS) are improving methodology to accurately forecast drought conditions." Both organizations use a combination of current and historical precipitation, streamflow, ground water, and crop data to perform short-term and long-term forecasts".[61]

On July 15, 2005, the Governor declared a drought emergency for the entire state of Wisconsin. This declaration, the first since August 2003, allowed farmers access to additional water for crop irrigation. The National Weather Service has 18 recorded drought events (no dust storms reported) for Green County between 1 January1950 and 30 September 2019:[62]

Year	Date	Location	Human Losses	Damage Losses
2002	8/1	Green Co.	Death/Injury: 0	Property: $0 Crop: $300K
2003	8/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	9/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/1	Green Co.	Death/Injury: 0	Property/Crop: $0
2005	7/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	8/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	9/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/1	Green Co.	Death/Injury: 0	Property/Crop: $0
2012	7/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	8/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	9/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/1	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/1	Green Co.	Death/Injury: 0	Property/Crop: $0

Considering past occurrences, it can be surmised that Green County has a moderate probability of drought occurrence in the future and the likelihood of damage due to drought is considered low for human impacts while the likelihood of damage to agricultural resources is considered very high. The probability of dust storm is low and damages due to dust storms was considered very low countywide except in the City of Brodhead where the likelihood of occurrence was moderate and the severity of effects is low. This is due to the fact that the Brodhead area is very sandy and flat, which increases the likelihood and severity of dust storms. In the 1800s, pine trees were planted in this area to try to reduce dust storms and topsoil loss. Decatur and Spring Grove are the worst parts in this area for dust storms, particularly during a dry spring while fields are being plowed.

Additionally, based on the surveys returned from Green County municipalities, there was low concern regarding a drought; 3 municipalities identified as being very concerned, 5 as concerned and 4 as somewhat concerned.

[61] State of Wisconsin Hazard Mitigation Plan

[62] http://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=55%2CWISCONSIN

Vulnerability

Droughts and dust storms could impact Green County disproportionately because a portion of the land area is used for agricultural activities. Drought generally impacts farm output by reducing crop yields and the health and product output (e.g., milk) of livestock. As a result, a drought will seriously impact the economy of the entire county. Dust storms impact farms in the long term by blowing away the top levels of soil, which are the richest. This could economically impact the county by reducing its long-term viability for farming. The concern for agricultural losses due to drought is difficult to estimate because each incident will impact the county differently based on the length of the drought, when it occurs in the planting season and which crops were planted in various locations in that:

- Average size of farms: 206 acres
- Average value of agricultural products sold per farm: $78,668
- Average value of crops sold per acre for harvested cropland: $128.02
- The value of livestock, poultry, and their products as a percentage of the total market value of agricultural products sold: 76.95%
- Harvested cropland as a percentage of land in farms: 68.77%
- Average number of cattle and calves per 100 acres of all land in farms: 26.62
- Corn for grain: 72,895 harvested acres
- All wheat for grain: 3,470 harvested acres
- Soybeans for beans: 43,667 harvested acres
- Vegetables: 593 harvested acres
- Land in orchards: 43 acres

Drought is also a major risk factor for wildfire and can reduce the amount of surface water available for recreational activities (e.g., boating, fishing, water skiing) and for wildlife. This is important because, for example, low water levels can lead to an outbreak of disease (e.g., botulism) in migratory bird pools.

Prolonged drought can also impact the groundwater reserves. This can reduce the ability of the municipal water services and rural individuals on wells to draw adequate fresh water. This may especially impact rural homeowners who tend to have wells that are not drilled as deeply as municipal wells. In Green County, the population that lives outside of the cities and villages are generally on well water. There could also be a safety risk during dust storms if they are severe enough to reduce the visibility of the roadways for drivers.

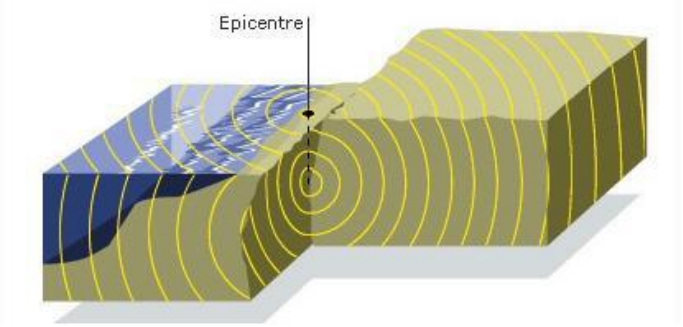
Hazard Mitigation Strategies

The goal of drought and dust storm mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. Green County will provide information to farmers concerning the potential severity of drought events. The county will also prepare and publicize water usage information during drought conditions for the general public.

Green County farmers can contact the Green County U.W. Extension Office and applicable programs sponsored by the U.S. Department of Agriculture {e.g., Farm Service Agency (FSA), Natural Resources Conservation Service (NRCS)} for information and guidance related to drought mitigation and/or the purchase of crop insurance. Various federal and state publications are available regarding ground water movement, the hydrologic cycle and irrigation methods. These agencies are also the lead agencies for obtaining emergency food and water supplies for agricultural use and for providing information regarding crop insurance. The Wisconsin Department of Natural Resources (DNR) also can provide assistance and permits for stream pumping for farms.

The hazard mitigation strategies listed above primarily involve providing information on water conservation measures to farmers and the public. Water conservation will ensure that the resource is available for critical residential, business and agricultural uses (e.g., drinking, food irrigation, manufacturing, firefighting) and good farming practices may help prevent erosion of the rich topsoil found in Green County. Since drought and dust storms are not hazards that affect buildings or traditional infrastructure (e.g., bridges, culverts) these strategies did not need to be designed to reduce damages to existing or future buildings and infrastructure.

Earthquakes



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 release energy in the form of seismic waves (wave-like movement of the earth's surface).[63]

Physical Characteristics

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 during an earthquake is seldom the direct cause of injury or death. Casualties usually result from falling objects and debris because the shocks have shaken, damaged or demolished buildings and other structures. Movement may trigger fires, dam failures, landslides, or releases of hazardous materials that compound an earthquake's disastrous effect.

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. For example, an earthquake measuring 6.0 on the Richter Scale is ten times more powerful than 5.0 and 100 times more powerful than a 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 (MMI) Scale measures the strength of a shock at a particular location (i.e., intensity).

A third less often used way of measuring an earthquake's severity involves comparing its acceleration to the normal acceleration caused by the force of gravity. The acceleration due to gravity, often noted "g," is equal to 9.8 meters per second. Peak Ground Acceleration (PGA) measures the rate of change of motion relative to the rate of acceleration due to gravity and is expressed as a percentage. These three scales can be roughly correlated, as expressed in the table that follows:[64]

[63] http://news.bbc.co.uk/2/shared/bsp/hi/pdfs/earthquake_guide.pdf
[64] Wald, Quitoriano, Heaton, and Kanamori, 1999

Earthquake PGA, Magnitude, and Intensity Comparison Table			
PGA [%g]	**Magnitude [Richter]**	**Intensity [MMI]**	**Description [MMI]**
<0.17	1.0 - 3.0	I	I. Not felt except by a very few under especially favorable conditions.
0.17 - 1.4	3.0 - 3.9	II - III	Felt only by a few persons at rest, especially on upper floors of buildings. Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
1.4 - 9.2	4.0 - 4.9	IV - V	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing cars rock noticeably. Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
9.2 - 34	5.0 - 5.9	VI - VII	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
34 - 124	6.0 - 6.9	VII - IX	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
>124	7.0 and higher	VIII or higher	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent. Few, if any [masonry] structures remain standing. Bridges destroyed. Rails bent greatly. Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Most of Wisconsin's occurrences have not been severe, with only one registering 5.1 on the Richter Scale.

Frequency of Occurrence

Earthquakes that have affected Wisconsin from 1899 to 2004 are listed in the table that follows. The most severe earthquake in Wisconsin was the record earthquake of 1811, centered along the New Madrid Fault. Most earthquakes that do occur in Wisconsin are very low in intensity and can hardly be felt. These very minor earthquakes are fairly common, occurring every few years. Events of moderate magnitude have occurred in locations in Illinois and Michigan. Those and other stronger earthquakes centered in other parts of the country have been felt primarily in southern Wisconsin.

Date	Location	Latitude North	Longitude West	Maximum Intensity	Magnitude
10/12/1899	Kenosha	42º 34'	87º 50'	II	3.0
3/13/1905	Marinette	45º 08'	87º 40'	V	3.8
4/22/1906	Shorewood	43º 03'	87º 55'	II	3.0
4/24/1906	Milwaukee	43º 03'	87º 55'	III	--
1/10/1907	Marinette	45º 08'	87º 40'	III	--
5/26/1909	Beloit	42º 30'	89º 00'	VII	5.1 (max)
10/7/1914	Madison	43º 05'	89º 23'	IV	3.8

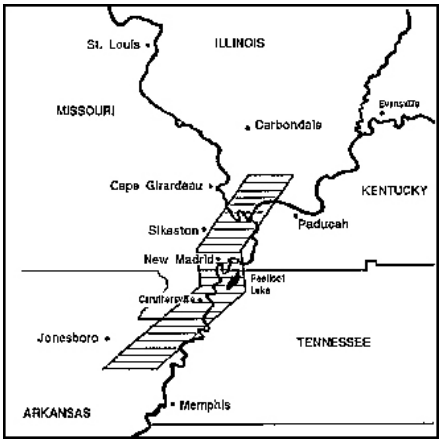
5/31/1916	Madison	43º 05’	89º 21’	II	3.0
7/7/1922	Fond du Lac	43º 47’	88º 29’	V	3.6
10/18/1931	Madison	43º 05’	89º 23’	III	3.4
12/6/1933	Stoughton	42º 54’	89º 15’	IV	3.5
11/7/1938	Dubuque	42º 30’	90º 43’	II	3.0
11/7/1938	Dubuque	42º 30’	90º 43’	II	3.0
11/7/1938	Dubuque	42º 30’	90º 43’	II	3.0
2/9/1943	Thunder Mountain	45º 11’	88º 10’	III	3.2
5/6/1947	Milwaukee	43º 00’	87º 55’	V	4.0
1/15/1948	Lake Mendota	43º 09’	89º 41’	IV	3.8
7/18/1956	Oostburg	43º 37’	87º45’	IV	3.8
7/18/1956	Oostburg	43º 37’	87º45’	IV	3.8
10/13/1956	South Milwaukee	42º 55’	87º52’	IV	3.8
1/8/1957	Beaver Dam	42º 32’	98º48’	IV	3.6
2/28/1979	Bill Cross Rapids	45º 13’	89º46’	--	<1.0 MoLg
1/9/1981	Madison	43º 05’	87º55’	II	--
3/13/1981	Madison	43º 37’	87º45’	II	--
6/12/1981	Oxford	43º 52’	89º39’	IV-V	--
2/12/1987	Milwaukee	42º 95’	87º84’	IV-V	--
2/12/1987	Milwaukee	43º 19’	87º28’	IV-V	--
6/28/2004	Troy Grove, IL	41º 46’	88º91’	IV	4.2
04/18/2008	Southern IL	38º 45’	87º89’	VII	5.2
02/10/2010	DeKalb County IL	41º 96’	88º50’	--	43.8
03/21/2012	Clintonville	--	--	--	1.5

In an article (published in 2012) in the Milwaukee Journal-Sentinel:

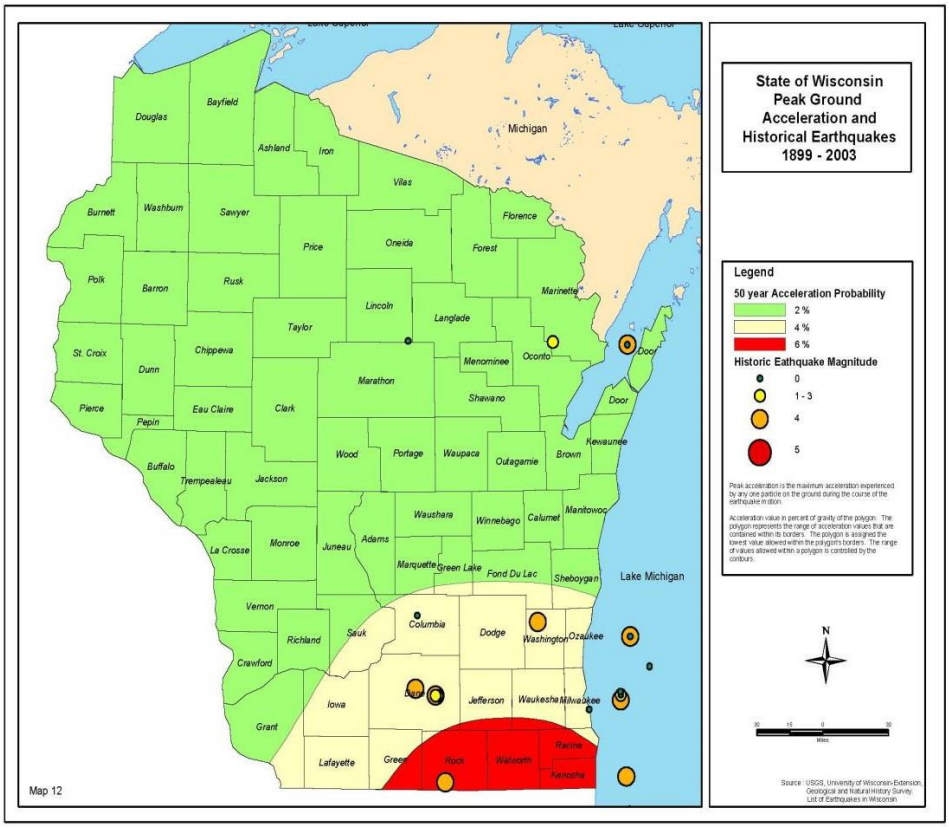
A 1.5-magnitude earthquake was recorded at 12:15 a.m. March 20 beneath Clintonville, according to the National Earthquake Information Center. The center is operated by the U.S. Geological Survey. The U.S. Geological Survey said several days of booms and vibrations that rattled windows and nerves last week likely were caused by a swarm of small earthquakes. Scientists at the Wisconsin Geological and Natural History Survey in Madison said the low-intensity seismic activity could have been produced by a phenomenon known as postglacial rebounding. Granite bedrock beneath eastern Waupaca County is slowly adjusting to a great weight being lifted off it when the last glacier melted more than 10,000 years ago. As the granite stretches, rising only a few millimeters a year, it can crack to relieve pressure, according to David Hart, a geophysicist at the Wisconsin Geological and Natural History Survey. As it cracks, one piece slides or shifts places, releasing enough energy to create a seismic wave that rises to the surface. There is no known geologic fault beneath central Wisconsin so the postglacial rebounding is the only thing stretching the bedrock crust in the state, Hart said.[65]

[65] http://www.jsonline.com/news/wisconsin/rumbling-booming-resumes-in-clintonville-6e4p9o8-144653925.html

This phenomenon was widely reported in local, state and national news and drew interest from the public. The nearest major active fault is the New Madrid Fault, stretching along the central Mississippi River Valley in Missouri. In recent years, considerable attention has focused on seismic activity in the New Madrid seismic zone that lies within the central Mississippi Valley, extending from northeast Arkansas through southeast Missouri, western Tennessee, and western Kentucky to southern Illinois. Scientists at the Center for Earthquake Information have computed a set of probabilities that estimates the potential for different magnitude earthquakes to occur at the New Madrid Fault. Even an 8.3 magnitude earthquake at the New Madrid Fault, however, would cause only minor damage in the southeastern corner of Wisconsin. At this time, it is not possible to predict the exact date, duration, or magnitude of an earthquake.



As seen on the map below[66], the earthquake threat to Green County is considered very low (the 50-year acceleration probability is 4%). Minor damage (e.g., cracked plaster, broken windows) from earthquakes has occurred in Wisconsin but most often the results have been only rattling windows and shaking ground. There is little risk except to structures that are badly constructed. Most of the felt earthquakes reported have been centered in other nearby states. The causes of these local quakes are poorly understood and are thought to have resulted from the still-occurring rebound of the earth's crust after the retreat of the last glacial ice. The likelihood of damage from an earthquake is also very low.



[66] Wisconsin State Hazard Mitigation Plan

Vulnerability

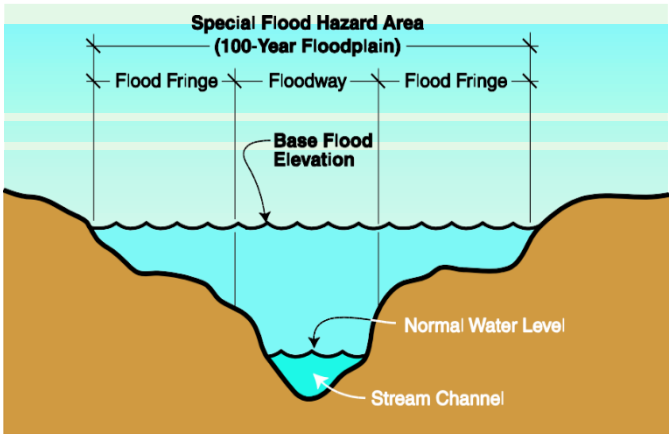
Any impact in the community from earthquake would likely be due to a few broken windows and personal effects that fell in the earthquake. The damage to critical infrastructure and buildings would be negligible.

Hazard Mitigation Strategies

Since the extent of Green County's damage is likely to be a few broken pipelines and limited damage to other infrastructure from a severe earthquake, the community impacts are not considered significant and mitigation planning for this hazard is not necessary. The goal for this section of the plan is therefore to educate on the low risks of earthquake damage and the low severity of effects in Green County.

Flooding and Dam Failure

Flooding is defined as a general condition of partial or complete inundation of normally dry land (i.e., the floodplains) caused by the overflow of inland waters or the unusual and rapid accumulation or runoff of surface waters from any source. Floodplains are the lowlands next to a body of water that are susceptible to recurring floods. [67] Floods are common in the United States, including Wisconsin, and are considered natural events that are hazardous only when adversely affecting people and property.



Physical Characteristics

Major floods in Wisconsin have usually been confined either to specific streams or to locations that receive intense rainfall in a short period of time. Flooding that occurs in the spring due to snow melt or during a period of heavy rain is characterized by a slow buildup of flow and velocity in rivers and streams over a period of days. This buildup continues until the river or stream overflows its banks, for as long as a week or two, then slowly recedes. Generally, the timing and location of this type of flooding is fairly predictable and allows ample time for evacuation of people and property.

For prediction and warning purposes, floods are classified by the National Weather Service into two types: those that develop and crest over a period of approximately six hours or more and those that crest more quickly. The former is referred to as "floods" and the latter as "flash floods". Flash flooding occurs solely from surface run-off that results from intense rainfall. Flash flooding occurs less frequently in Wisconsin than flooding associated with spring snow melt but it is unpredictable.

Generally, the amount of damage from flooding is a direct consequence of land use. If the ground is already saturated, stripped of vegetation or paved, the amount of run-off increases, adding to the flooding. There is also a concern regarding the loss of topsoil and erosion due to flooding. Terms commonly used when referring to flooding are "100-year flood" and "flood plain." A "100-year flood" is defined as the flood water level that can be expected to occur or to be exceeded in magnitude in any given year.

[67] FEMA, ~~August 2001~~

Flood Probability Terms Table[68]

Flood Recurrence Intervals	Percent Chance of Occurrence Annually
10 year	10.0%
50 year	2.0%
100 year	1.0%
500 year	0.2%

The Wisconsin Department of Natural Resource (DNR), working with local zoning offices, has designated flood plain areas as those places where there is the greatest potential for flooding. Flooding may also occur due to a dam breach or overflow. Dams are barriers built across a waterway to store, control, or divert water; a dam failure is a failure of the dam that causes downstream flooding. Failures may be caused by technological events (e.g., materials failure) or by natural events (e.g., landslide, earthquake) with flooding being the most common result.

The Wisconsin DNR database lists the following dams included in Green County:[69]

Dam Official Name	Popular Name	Owner Organization
Brodhead	Decatur	City of Brodhead
Albany		Village of Albany
Beers		UW Research Fund(WHRF)
Beckman Lake	Browntown Conservation Area	Yellowstone Lake StatePark
Shallburg ,Richard	Richard Tranel-Scs	Richard Tranel
Ackerman,Lloyd		Ackerman, Lloyd
Emberson Bros		EMBERSON BROS
Hartwig,Fred		HARTWIG,FRED
Ladwig, Forrest		LADWIG, FORREST
Arnes, Leroy		ARNES , LEROY
Meyers, Kenneth		MEYERS, KENNETH
Schuetze, Walter		SCHUETZE, WALTER
Wegmueller,John E		WEGMUELLER,JOHN E
Ingold, Charles		INGOLD, CHARLES
Endrulat,William		ENDRULAT,WILLIAM
Falk,Ted		FALK,TED
Pochter,Irwin		
Hauri, Cecil		HAURI, CECIL
Zander Lake	WI DNR	Yellowstone Lake StatePark
Urban,Joe		URBAN,JOE
Hermanson,Dave		HERMANSON,DAVE
Albany Wildlife	WI DNR	WI DNR - WILDLIFEBIOLOGIST
Disch, Larry	Dr. Philip Marty	DISCH, LARRY

[68] State of Wisconsin Hazard Mitigation Plan
[69] https://dnr.wi.gov/damsafety/damSearch.aspx

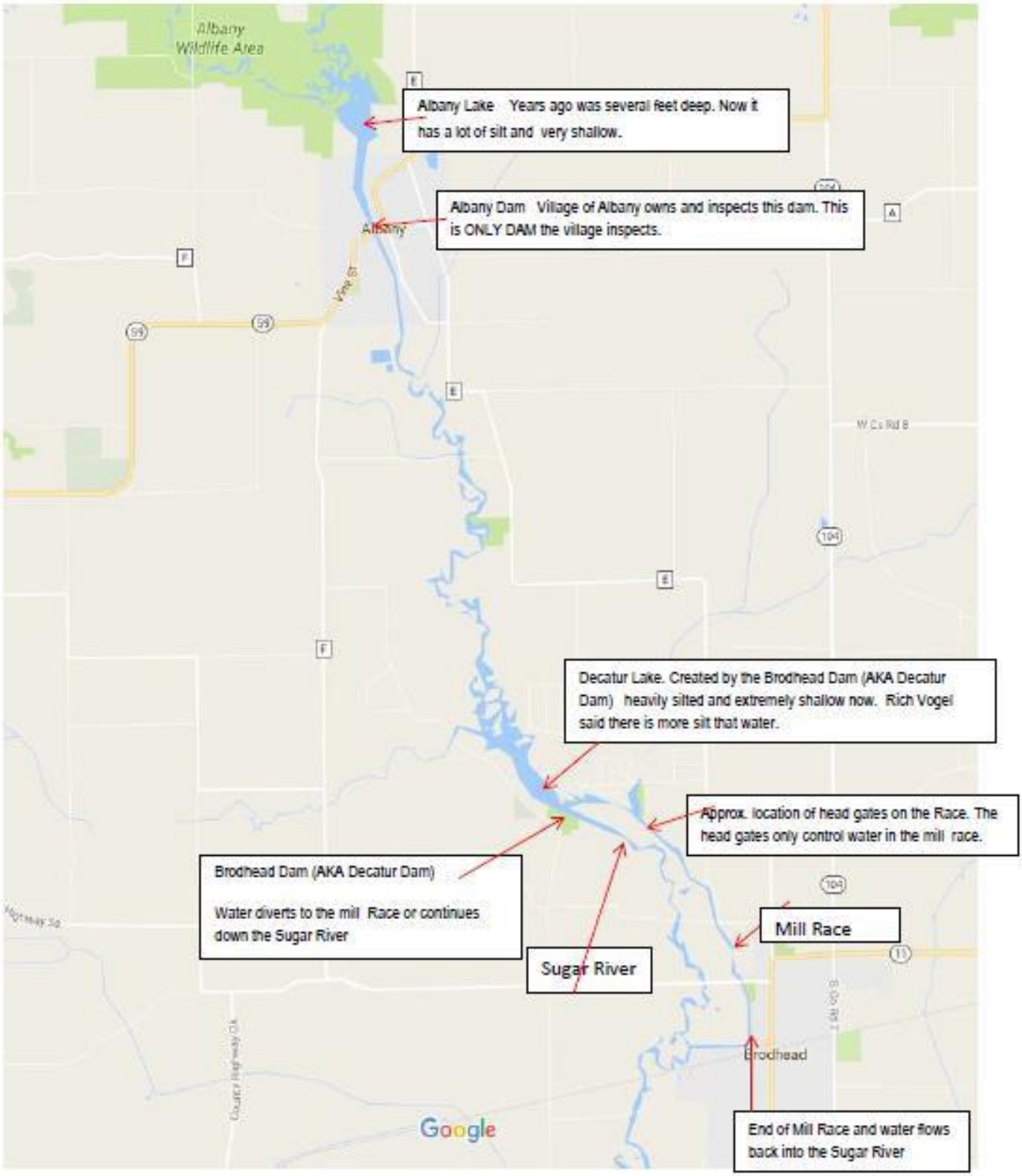
Haas, James		HAAS, JAMES
Koca, Edward		KOCA, EDWARD
Winden, Lloyd		WINDEN, LLOYD
Feeney, Martin J.		FEENEY,MARTIN J.
Deininger, Donald		DEININGER, DONALD
Krim, James		KRIM, JAMES
Kubly And Voelkli		
Thomas, Marvin		THOMAS, MARVIN
Koca, Edward J.		KOCA, EDWARD J.
Dammon, Victor		DAMMON, VICTOR
Buetzer, Lawrence		
Klossner, Junior K.		KLOSSNER, JUNIORK.
Dayton	Dayton	MR. LUXINGER
Browntown	Browntown	PHILLIP MICHAELS
Martintown	Martintown	E.B. BUCHER
Monticello Roller Mills	Monticello Roller Mills	HENRY STAEDTLER
Monticello Woolen Mills	Monticello Woolen Mills	D. KENNEDY
Montesian Lake		VILLAGE OF MONTICELLO
Tuescher		
Roger Friedrich		FRIEDRICH, ROGER
Monroe Detention Basin		City of Monroe
H & D Scott Family, LLC		H & D SCOTT FAMILY,LLC

Most of these dams are small, mill-type dams under the jurisdiction of the DNR, municipalities and/or are also privately owned. Management and maintenance of dams is critical because severe flooding can result from inadequate attention to the dams.

Most dams in Green County are considered low-hazard. Dams are classified by the Wisconsin DNR 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. These dams are inspected by the Wisconsin Department of Natural Resources (DNR) and the largest are required to have an Emergency Action Plan (EAP) and failure analysis on them.

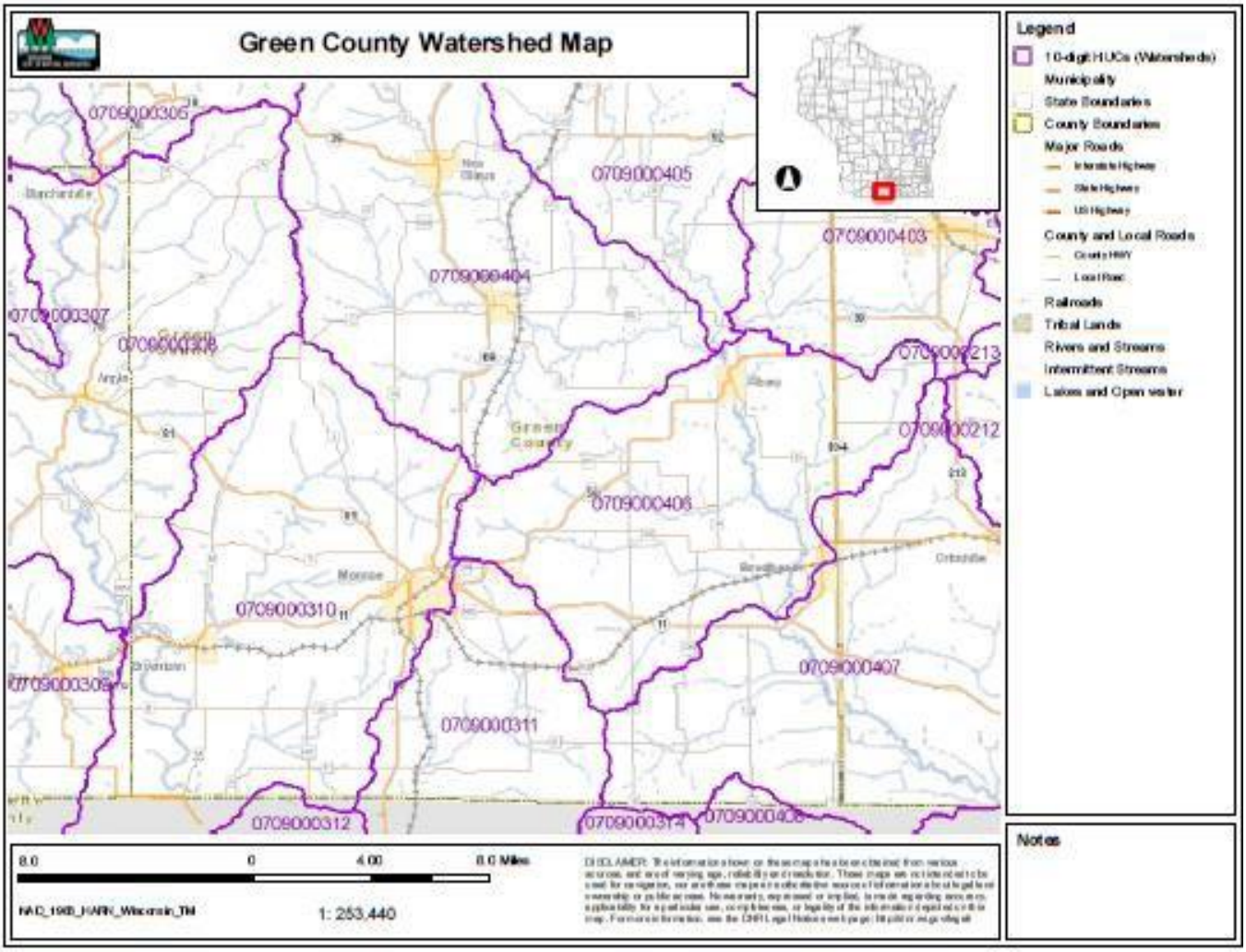
One potential effect of flooding is erosion. Erosion is defined as the removal of soil by the force of waves, currents and/or ice at a lakeshore or streambank or by the power of wind or water on open land. Erosion is a natural process that can be accelerated by natural disasters (e.g., flooding, heavy rains, strong winds, drought) or by human activity (e.g., removal of plants/trees, tilling). Because of the many waterways in Green County, and the high use of recreational watercraft, there is concern about ensuring the stabilization of the shorelines.

Green County Dams



Watersheds

Ten watersheds are contained completely or partially within Green County and all drain into the Mississippi River Basin. The maps show the watershed boundaries for the entire county. Following is a brief description of each watershed:



- **Upper Sugar River (SP15) -** The Upper Sugar River Watershed, located in Southwestern Dane County, drains 104 square miles of the headwaters area of the Sugar River. Because of the growing urban population of this watershed, land use and urban nonpoint source pollution are major concerns in the area. Rural nonpoint source pollution also remains an issue as the majority of the land, especially along the river, remains in agriculture. The entire length of the Sugar River and lower two miles of Schlapbach Creek are listed as exceptional resource waters (ERWs). The Madison Metropolitan Sewerage District discharges a portion of their effluent to Badger Mill Creek. This creek was recently removed from the state's list of impaired waters. The Upper Sugar Watershed contains good quality wetlands, particularly in areas adjacent and north of U.S. Highway 18/151.[70]

[70] http://dnr.wi.gov/water/watershedDetail.aspx?key=924724

- **Gordon Creek (SP05) -** The Gordon Creek Watershed lies in southwestern Dane, northwestern Green and southeastern Iowa counties. The watershed is impacted by agricultural nonpoint source pollutions and ranks high in priority for nonpoint source pollution abatement. Three creeks in the watershed are on the state's list of impaired (303d) waters. However, the water quality in the watershed has improved as more land is set aside for the Conservation Reserve Program (CRP) and the Conservation Reserve Enhancement Program (CREP) and other forms of grassland management. Although the population of this rural watershed is not expected to grow significantly, development pressures and factory-style farming could threaten these improvements.[71]

- **Allen Creek and Middle Sugar River (SP13) -** The Allen Creek and Middle Sugar River Watershed straddles the northeast corner of Green County, northwest Rock County, and south central Dane County. Agriculture dominates the land use in this watershed that also contains scattered woodlots and grasslands. Residential development is impacting the upper reaches of the watershed. The population of the watershed is expected to increase by over 14 percent, mainly as a result of the watershed's proximity to Madison. Municipal wastewater treatment plant discharges to surface water in the watershed come from Belleville, Brooklyn, and Evansville. The watershed is fortunate to have six exceptional resource waters within its borders. An atrazine prohibition area exists throughout most of Dane County, as well as portions of Rock County adjacent to Allen Creek and much of the Sugar River corridor in northeastern Green County.[72]

- **Badfish Creek (LR07**) – The Badfish Creek Watershed, located in Rock and Dane Counties, is approximately 53,894 acres in size and consists of 79 miles of streams and rivers, 218 acres of lakes and 3800 acres of wetlands. The watershed is dominated by agriculture (67%) and is ranked medium for nonpoint source issues affecting streams and is ranked high for nonpoint source issues affecting groundwater, based on WDNR groundwater susceptibility mapping. Badfish Creek has the dubious distinction of being one of the top watersheds in Rock County for soil loss, which is estimated at 9 tons/acre/year. Soil loss in the Dane County portion is more difficult to determine, but is estimated to be 8.3 tons/acre/year. The Madison Metropolitan Sewerage District has an ongoing monitoring program to track water quality in Badfish Creek. MMSD conducts biotic index monitoring of Badfish Creek tributaries semi-annually since 1983 and periodically conducts biotic index monitoring in selected tributaries to Badfish Creek (MMSD).

  The Badfish Creek Watershed lies in south central Dane County and in the northwest corner of Rock County and encompasses 85.5 square miles. The village of Oregon is the largest community (7,514 in 2000) in this rural watershed. The village's growth of 30.5% from 1995-2000, is rapidly changing the area's rural character to a suburban community. As the village and towns of this watershed continue to grow, stormwater management and construction site erosion control have become more important. For example, increased stormwater flows have caused flooding problems in part of the village. A few municipalities are located within this basin, with a portion of the city of Fitchburg, the towns of Oregon and Rutland, and the village of Oregon. Wastewater from the city of Madison, treated by the Madison Metropolitan Sewerage District (MMSD), affects the watershed's water quantity and quality via discharges through an effluent ditch that joins the Oregon Branch of Badfish Creek. Wetlands in this watershed include Grass Lake, Island Lake, and Hook Lake.

[71] http://dnr.wi.gov/water/watershedDetail.aspx?key=924845
[72] http://dnr.wi.gov/water/watershedsearch.aspx

Madison Metropolitan Sewerage District (MMSD) serves the entire Madison metropolitan region with its direct discharge and pretreatment programs. The district's operations have undergone nine substantial upgrades, the ninth addition, which includes a new ultraviolet disinfection system and biological phosphorus removal, was completed in 1997. A 1996 inspection found MMSD in substantial compliance with its permit. The plant has a design load of 50 million gallons per day (mgd). In 1993 Verona was annexed into MMSD; the Verona wastewater treatment plant was operated by MMSD from January 1995 through July 1996, when connection of Verona's flow to the Nine Springs Wastewater Treatment Plant was completed. Beginning in the summer of 1998, MMSD will return a volume of effluent to Badger Mill Creek that is equal to the volume of wastewater pumped out of the Sugar River Basin and treated at the Nine Springs Wastewater Treatment Plant. MMSD has worked with WDNR and other stakeholders to develop a mutually agreeable plan for managing this effluent return program. The plant currently discharges to an effluent ditch via an underground pipe from the Nine Springs plant about five miles away at an average rate of 36-37 mgd.[73]

- **Little Sugar River (SP14)** - The Little Sugar River watershed contains a number of quality streams that wind their way through the rolling hills of north central Green County and a small portion of southern Dane County. The ridges of the western portion of the watershed are more pronounced, producing spectacular pastoral scenery, but also increasing the potential impact from runoff. The area is predominantly agriculture, especially dairy, cash crop, and feeder operations. The municipal wastewater treatment plants from New Glarus and Monticello discharge to the Little Sugar River and the West Branch Little Sugar River, respectively. The population of the watershed is not predicted to grow significantly in the next two decades although there has been an increase in the number of houses springing up in the area surrounding New Glarus. This may change the land use patterns over the course of the next decade.[74]
- **Lower East Branch Pecatonica Rivers (SP03)** - The Lower East Branch Pecatonica River Watershed straddles northwest Green County and northeast Lafayette County and encompasses a drainage area of about 145 square miles. Agriculture dominates the landscape, making up 75% of the land cover in the watershed. Broadleaf deciduous woods and grasslands make up the balance of the land cover. Some high quality wetlands exist along the East Branch Pecatonica River, including oxbow lakes, shallow water marsh, lowland forest, and southern sedge meadow wetland complexes. Blanchardville and Argyle are the only concentrated population centers in the watershed which contains over 180 miles of streams. Segments of five streams (i.e., Apple Branch, Braezels Branch, Cherry Branch, Dougherty Creek, Jockey Hollow Creek) are on the state's 303(d) list of impaired waters – all due to habitat loss from sedimentation. All or segments of 6 streams (i.e., Apple Branch, Dougherty Creek, Erickson Creek, Mud Branch, Sawmill Creek, Whiteside Creek) are designated as Class II trout waters.

  The dominant land use in the watershed is agriculture (76%) followed by forest (16%). The trends in agriculture toward fewer dairy farms with reduced need for alfalfa and pasture means many of those acres are being replaced with corn and soybeans. In steeply sloping areas of the state, this inevitably means higher rates of runoff of soil and nutrients. Upland acreage in this watershed historically enrolled in the Conservation Reserve Program (CRP) beginning in the late 1980's and continuing through the 1990's meant that fewer and smaller sediment and nutrient loads from farm fields found their way to rivers and streams. The program required taking cropland out of production and planting it to grasses. Many of these contracts have and continue to expire(d), meaning they will become

[73] http://dnr.wi.gov/water/watershedDetail.aspx?key=924815
[74] http://dnr.wi.gov/water/watershedDetail.aspx?key=924912

sources of sediment and nutrients again, particularly if they are used primarily for corn and soybean production, as is the case in much of Wisconsin.

In 1992, the department along with the Green and Lafayette County Land Conservation Departments began working with landowners to reduce nonpoint sources of water pollution through a priority watershed (PWS) project. Land owners could voluntarily install best management practices (BMPs) designed to reduce soil loss, nutrient loads, and erosion of streambanks. A pre-PWS study conducted by the land conservation departments reported that about 70% of the sediment deposited in streams annually is derived from agricultural upland erosion, 23% originates from streambank erosion, and 10% from gullies. The study also determined that about ¼ of the 370 barnyards evaluated contributed 70% of the organic pollutants thatreach creeks (WDNR, 1992). Over the 14 year implementation period of the project, nearly $2 million was spent on cost sharing management practices. Over 150 contracts were signed for various practices including streambank rip rap, fencing, grassed waterways, and barnyard runoff control systems. The effect of these projects in improving overall water quality was admittedly difficult to ascertain. The counties reported that sites which included improvements in streambank stabilization and habitat development seemed to show the most positive responsive. An assessment of the Galena River Priority Watershed Project indicated the project resulted in "little to no improvement on a watershed wide basis." The report also reported that non-point source best management practices which were installed were "moderately effective in reducing non-point source pollution and improving water quality". The report listed three factors that were believed to be responsible for the marginal watershed wide improvement. First, there were relatively low levels of participation by landowners. Second, the large size of the watershed was a factor, particularly when considering the lack of participation. Third, the effects of uncontrolled upstream non-point source pollution sources that have the potential to over-shadow any beneficial effects obtained by implemented BMPs. The primary lessons learned from the Galena River priority watershed project were that non-point source BMPs work, but that one or two bad uncontrolled upstream sites can negate the water quality improvements of installed BMPs.[75]

- **Lower Middle Sugar River (SP12)** - The Lower Middle Sugar River Watershed includes a portion of the Sugar River and tributaries from the dam at Albany downstream to the Decatur Lake dam. Agriculture is the predominant land use and the subsequent agricultural non- point source pollution is the major source of impairment to streams in the watershed. The population of the watershed will likely remain steady over the next two decades owing to the relatively small size of the watershed and lack of major municipalities. The watershed has not been ranked for nonpoint source priority. The Village of Albany waste water treatment facility discharges to surface water. A large wetland complex still exists adjacent to the Sugar River although other large areas of wetlands have been drained and put into cultivation.[76]

- **Jordan and Skinner Creeks (SP02)** – The Jordan and Skinner Creeks Watershed is located in southwest Green County. The two main creeks that give this watershed its name join just east of Browntown. Skinner Creek then flows into the Pecatonica River just west of Browntown. One stream in the watershed, Bushnell Creek, is classified as a trout stream for a portion of its length. The watershed is dominated by agriculture, although it does have some areas of woodlots and grasslands. The habitat in all of the streams is impacted by agricultural non-point source pollution. The population of this

[75] http://dnr.wi.gov/water/watershedDetail.aspx?key=924717
[76] http://dnr.wi.gov/water/watershedDetail.aspx?key=924722

mostly rural watershed is expected to remain steady over the next several decades. One municipality, Browntown, discharges to Skinner Creek.[77]

- **Lower Sugar River (SP11)** - The Lower Sugar River watershed lies in southeast Green and southwest Rock Counties. It contains an 18.4 mile stretch of the Sugar River from the dam at Decatur Lake downstream to the Wisconsin-Illinois state line. The watershed is intensively agricultural with scattered grasslands and woodlots. Two municipalities, Brodhead and Orfordville, discharge to the Sugar River and Swan Creek, respectively. The Juda wastewater treatment facility discharges to groundwater. One industrial facility, Sylvester Whey, discharges to the North Fork Juda Branch. Polluted runoff is the primary cause of water quality and in-stream habitat problems. Point source pollution is also a problem on the North Fork Juda Branch. The North Fork Juda Branch and Spring Creek are on the state's list of impaired (303d) waters, mainly due to habitat impairments caused by non-point source pollution. Many of the streams in this watershed have not been monitored in the last 10 years.[78]

- **Honey and Richland Creeks (SP01)** - The Honey and Richland Creeks Watershed lies in south central Green County adjoining the Wisconsin/Illinois border. Both Honey and Richland Creeks run south into Illinois where they eventually join the Pecatonica River. Land use in the watershed is dominated by agriculture with almost 80% of the land cover devoted to agricultural practices. The most pressing issue for the watershed is habitat impairment from nonpoint source pollution. For the Honey Creek catchment, approximately 80% of the watershed is in agriculture with a number of dairy operations. Excessive stream bank pasturing lends itself to habitat degradation by causing sedimentation, which covers hard substrate, and trampled down banks which make the stream wider and shallower. Runoff of manure adds nutrients which lead to algal and macrophyte growth.

  The overall population of the watershed was 12,450 in the year 2000, with most of those (10,843) living in the City of Monroe. The population of Monroe has already exceeded projections out to the year 2015. The city, in conjunction with surrounding townships, Southwest Wisconsin Regional Planning Commission, and the DNR are working on a sewer service area plan that is designed not only to look at growth over the next 20 years, but also to keep development away from environmentally sensitive areas, with the primary goal of protecting water quality.

  The Monroe sewerage treatment facility discharges to Honey Creek and is the only municipal wastewater discharger to a surface water. Four industrial facilities also discharge to surface water in the watershed. In addition to the Monroe Sewerage Treatment Plant, several industries discharge small amounts of non-contact cooling water to Honey Creek and its watershed. Honey Creek also exhibited fish kills in the past some caused by upsets of the Monroe sewerage treatment plant. Improvements to the plant in the 1980's vastly improved the operations. However, the treatment plant does add nutrients to the system which encourages plant and algal growth.[79]

Floodplain Regulations

Floodplain regulations have been in place in the cities, villages and towns of Green County for many years. The Wisconsin Department of Natural Resources (DNR) requires that each municipality approve

[77] http://dnr.wi.gov/water/watershedDetail.aspx?key=924844
[78] http://dnr.wi.gov/water/watershedDetail.aspx?key=924721
[79] http://dnr.wi.gov/water/watershedDetail.aspx?key=924716

regulations that meet DNR guidelines. These regulations and guidelines result from the value of Wisconsin lakes and waterways and a desire to preserve them and to protect the people who reside near them. Unregulated development can lead to loss of lives and property during floods.

Chapter 614, Laws of Wisconsin 1965, requires counties to adopt regulations giving all lands within 300 feet of navigable rivers or streams protection from haphazard development. Under this legislation, Green County has adopted a zoning ordinance which gives a measure of protection to watersheds. The law protecting flood plains was created to meet the following objectives:

- Reduce the hazards to life and property from flooding.
- Protect flood plain occupants from a flood which is or may be caused by their own land use and which is or may be undertaken without full realization of the danger.
- Protect the public from the burden of extraordinary financial expenditures for flood control and relief.
- Encroachment on flood plains, including structures or fill, reduces the flood-carrying capacity.

Frequency of Occurrence

Wisconsin has experienced several major floods during the last two decades. The 1973 and 1986 floods revealed that no floodplains or urban areas in Wisconsin can be considered safe from damages. Green County does have a history of flooding problems and has been included in several Presidential Disaster Declarations requests for flooding, the most recent of which are detailed below (note that dollar losses and victim numbers are for the entire disaster, not just Green County unless otherwise noted):

- FEMA-DR-874-WI: Storms, Tornadoes, Flooding in 1990. $21M losses. 0 deaths
- FEMA-DR-994-WI: Heavy Rains, Storms, Tornadoes, Flooding in 1993. $740M. 2 deaths
- 1996 – Not Declared for Flooding. $199,026,239 in damages statewide.
- FEMA-DR-1131-WI: Storms, Tornadoes, Flooding in 1996. $61,114,650. Green County received $492,781.50 in PA assistance. Individual assistance (IA) was requested and denied, as were the appeals.
- FEMA-DR-1332-WI: Heavy Rains, Storms, Flooding in 2000. $62,798,636. Green County received $119,134.92 in PA.
- FEMA-DR-1526-WI: Storms, Tornadoes, Flooding in 2004. $87,032,160. Green County did not receive PA but did receive IA.
- FEMA-DR-1768-WI: Storms, Tornadoes, Flooding in 2008. $763.619M. 1 death. Green County received $321,643.05 in PA.

Following is a table with the flood events recorded by the National Weather Service between 1 January 1950 and 31 December 2020.[80]

[80]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Flood&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

Year	Date	Location	Human Losses	Damage Losses
1996	02/10	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/12	Green Co.	Death/Injury: 0	Property/Crop: $0
	06/17	Green Co.	Death/Injury: 0	Property/Crop: $5.700M
1997	02/18	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/01	Green Co.	Death/Injury: 0	Property/Crop: $0
	06/15	New Glarus	Death/Injury: 0	Property/Crop: $0
	09/19	Monroe	Death/Injury: 0	Property/Crop: $0
1998	03/30	Monticello	Death/Injury: 0	Property/Crop: $0
1999	04/23	Green Co.	Death/Injury: 0	Property/Crop: $8.00K
	06/13	Green Co.	Death/Injury: 0	Property/Crop: $100.00K
	07/20	Monticello	Death/Injury: 0	Property: $5K Crop: $0
2000	06/01	Green Co.	Death/Injury: 0	Property: $100K Crop: $0
2001	02/09	Green Co.	Death/Injury: 0	Property: $10K Crop: $0
2004	05/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	05/24	Green Co.	Death/Injury: 0	Property: $1K Crop: $200K
	06/01	Green Co.	Death/Injury: 0	Property: $1K Crop: $100K
2005	06/01	Green Co.	Death/Injury: 0	Property: $5K Crop: $0
2013	3/11	Brodhead	Death/Injury: 0	Property: $15K Crop: $1K
	4/11	Brodhead	Death/Injury: 0	Property: $5K Crop: $1K
	4/18	Martintown	Death/Injury: 0	Property: $3K Crop: $1K
	4/19	Martintown	Death/Injury: 0	Property: $3K Crop: $1K
	06/24	Brodhead	Death/Injury: 0	Property: $10K Crop: $3K
	06/25	Martintown	Death/Injury: 0	Property: $8K Crop: $3K
2017	07/20	Brodhead	Death/Injury: 0	Property: $5k Crop: $0
	07/21	Browntown	Death/Injury: 0	Property: $172k Crop: $0
	07/22	Albany	Death/Injury: 0	Property: $1k Crop: $0
2019	02/19	Potsville	Death/Injury: 0	Property: $50k Crop: $0
	02/20	Brodhead	Death/Injury: 0	Property: $5k Crop: $20K
	02/20	Browntown	Death/Injury: 0	Property: $120k Crop: $0
	02/21	Attica	Death/Injury: 0	Property: $10k Crop: $0
	08/22	Albany	Death/Injury: 0	Property: $5k Crop: $5K
	08/22	Brodhead	Death/Injury: 0	Property: $5k Crop: $0
	09/23	Martintown	Death/Injury: 0	Property: $1k Crop: $2K
	10/01	Brodhead	Death/Injury: 0	Property: $1k Crop: $1K
	10/03	Martintown	Death/Injury: 0	Property: $10k Crop: $5K

There are few major bodies of water that can flood in Green County and most flooding is due to a combination of high-water tables (i.e., ground water)100 and/or runoff from land that is not able to absorb the precipitation (i.e., poor soil infiltration). There can be some localized spring flooding, from rivers, creeks, and streams and the DNR policy of not removing stream debris increases the risk of damage during flooding. Due to these concerns, as well as a review of the geography and history of flooding in Green County, the workgroup believes that there is a very high probability of flooding and a high severity of effects if flooding occurs due to flooding and flash flooding.

The Brodhead Dam, which is also known as the Decatur Dam, is in the City of Brodhead on the mill race. The dam, originally a power dam, created Decatur Lake from the Sugar River and there is heavy silting around it. The water level behind the dam cannot be regulated and water from Decatur Lake runs down the Brodhead Mill Race which is regulated by a head gate at the lake and a spillway three miles south in Brodhead. The gate and spillway are for the control of the Mill Race and has no effect on the dam. It is not recognized as a dam by the DNR and is owned and inspected by the city.

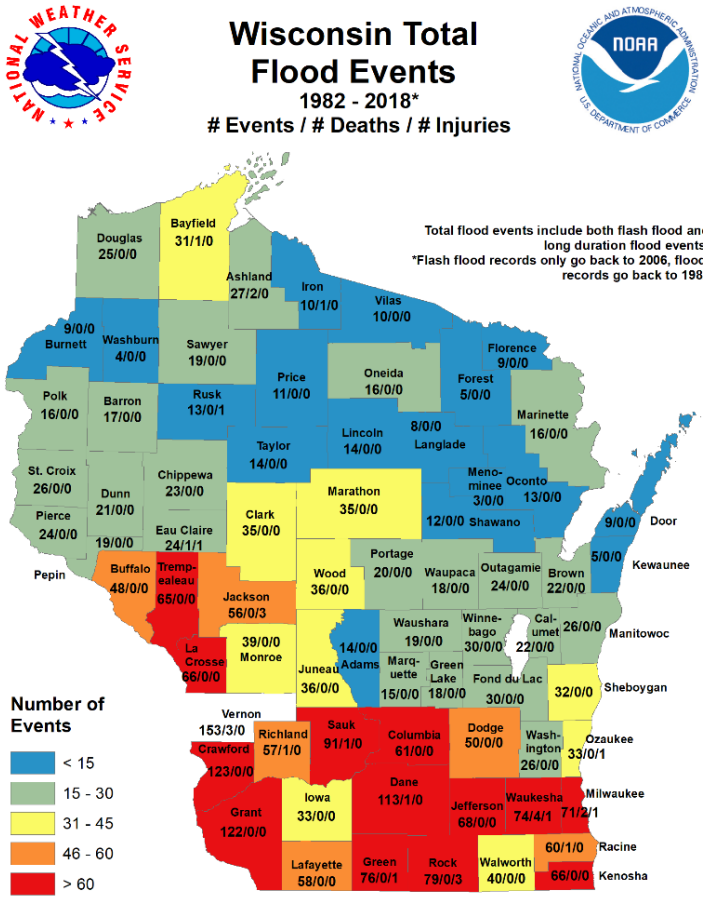
The Beckman Lake Dam is located at the Cadiz State Park. Browntown is downstream and the DNR has a plan for dam failure. Historically Cadiz has had more water from "normal" flooding than they would if the dam broke.

The Albany Dam is on the Sugar River. It was originally a power dam but there is not a lot of water behind this dam. A failure at this dam could severely damage the Brodhead/Decatur dam (which is downstream) and significant rural subdivisions. This would occur only if the was a very large and significant amount of rainfall; otherwise, it is more likely to dissipate into the farm fields between the dam and Brodhead. The Village of Albany owns this dam and it is regularly inspected (quarterly) by the village and the DNR. The village received $175,851.05 in public assistance (PA) for June 2008 flooding.

Originally both the Albany Dam and the Brodhead Dam had lakes behind them that were several feet deep. Over the years the lakes have silted in and are now very shallow. With those considerations in mind, the workgroup decided that there is a low probability of dam failure in the county and the severity of effects would be moderate for the county.

Vulnerability

After flooding, whether caused by a storm or dam failure, there is often damage. Potential vulnerabilities due to flooding events can include flooded public facilities and schools, many of which are the community's shelters needed when individual housing is uninhabitable. Utilities are also vulnerable in floods, which can bring down electric lines/poles/transformers and telephone lines and can disrupt radio communications. The loss of communications can impact the effectiveness of first response agencies, which need to communicate via two-way radio to mount emergency response and recovery activities. The public media communications used by emergency managers to provide timely and adequate emergency public information can also be impacted.



Residential structures may suffer from flooded basements, damaged septic systems and damaged functionals (e.g., HVAC systems, clothes washers, and driers). Homes may also be impacted by sewer back-up and, if the home is not properly cleaned after a flood, bacterial growth and mold may impact the home's air quality and cause illness among the occupants.

Businesses can suffer building and equipment damage similar to homes. Businesses may lose expensive product stored in basement or other low areas as well as the ability to operate from their facility. If the facility must close, its owners and employees will most likely suffer economic hardships beyond what their personal losses may have entailed. Agricultural business losses involve the loss of standing crops and harvests that are damaged by flooded storage facilities in the immediate time period. On a longer timescale, the erosion of rich topsoil by floodwaters can degrade the land and impact future crop yields. Perhaps one of the most

expensive types of flood damage is that to roadways, which are washed out, inundated, and/or covered by debris, blocking access to emergency and general public traffic.

Hazard Mitigation Strategies

The purpose of the flood mitigation portion of the plan is to identify areas that are particularly susceptible to flooding, assess the risks, analyze the potential for mitigation and recommend mitigation strategies where appropriate. With that in mind, the plan goals are:

- Goal 1: To reduce, in a cost-effective manner using a cost- benefit analysis, the loss of lives and property due to these events. Another part of this goal is to promote safety and health in areas that have been or are prone to be flooded.
- Goal 2: To preserve and enhance the quality of life throughout Green County by identifying potential property damage risks and recommending appropriate mitigation strategies to minimize potential property damage during/due to flooding.
- Goal 3: To promote countywide planning that avoids transferring the risk from one community to an adjacent community.
- Goal 4: To continue encouraging all Green County communities' participation in the NFIP so that all county residents have access to affordable flood insurance coverage.
- Goal 5: To identify potential funding sources for mitigation projects and form the basis for project grant applications through FEMA's Pre-Disaster Mitigation (PDM) and/or Flood Mitigation Assistance (FMA) programs.

Green County and its municipalities are committed to remaining compliant with the requirements of the National Flood Insurance Program (NFIP) and all other state and federal laws. According to the NFIP, the county and all of its incorporated municipalities participate in the program. Short-term actions that can lessen the effects of flooding include:

- Issuance of early warnings through flood advisory bulletins,
- Dissemination of instructions to the public through the media,
- Preparation of congregate care facilities,
- Evacuation of people and property.

Temporary protective measures such as sandbagging, protection of buildings and other structures and cut-off of gas and electricity may also be implemented. Other potential projects include:

- Exploring potential solutions for properties at high risk for flooding and, as appropriate, investigate acquisition or other mitigation strategies (e.g., elevation of functionals such as HVAC, washer/dryers) for repetitive-loss properties. This is an ongoing general project for all communities within the county and specifically includes exploring options for buyouts/elevations for homes on the bank of the Pecatonica River on Martin Town Road in the Town of Cadiz.

- The Sugar River is susceptible to occasional very high flows during spring snowmelt runoff and prolonged heavy warm season rainfall in the local area or in areas upstream. To assist with flood monitoring, an automated river gaging station was set up in 2000. The site was upgraded from a data point to a flood forecast point in 2014. Since 2000, Village DPW employees have assisted NWS with minor gauge maintenance issues and by periodically reading a manual wire weight gauge on the bridge in Albany for the purposes of calibrating the downstream automated gauge. NWS communicates with

the gauge routinely on a scheduled basis using in-house automated software to retrieve river stage and rain data from the automated rain gauge which then gets posted to the AHPS web page for public viewing online. In Sept. 2015, the USACE and Green County purchased equipment, at the request of NWS, to upgrade and modernize the gauging equipment and communications located in the river gauge building next to the Sugar River in Albany, WI. The costs of $1,769.00 were split approximately in half totaling with the Army Corp of Engineers (Rock Island) paying half and Green County EM paying the remainder. The project was completed in 2016.

- Conducting roadside ditch improvements along County Highway E to reduce flooding in the City of Brodhead. The project also included adding a stormwater collection system pumping to the Sugar River. This project was completed during the planning period.

- Investigating opportunities to improve culverts along County Highway T and Town Center Road in the Sugar River floodplain. One option under consideration would be to raise the road elevation approximately 18" for 3,000.' This area currently floods every spring and after heavy rains in the Sugar River watershed in Green and Dane County. Preliminary hydraulic model has been recently completed.

- The Village of Monticello and Town of Mount Pleasant would like to investigate a possible road elevation project for County Highway EE near Pratt Road. This roadway is regularly covered by water as the area is a wide, flat floodplain that takes some time to drain.

- Investigating options for erosion control in the Village of Albany. A retaining wall was installed along the Sugar River in 2017. The village would like the improvements to also make the area handicap-accessible for tourists/tubers.

- Exploring options to re-size and repair the stormwater pond in the City of Brodhead. The pond, which was built 20 years ago, is undersized, especially as the community grows.

- Investigating the addition of approximately ten ponds for the City of Monroe which are needed to meet DNR regulations for suspended solids.

- Exploring options for reducing flooding from the Pecatonica River near County Highway M in the Village of Browntown and at Babler Rd. in the Town of Cadiz.

- Repairing the retaining wall on the east side of the Mill Race in the City of Brodhead because it is washing out.

- Exploring options for making the earthen dam between the west side of Decatur Lake from the dam to the head gates more robust. The earthen dam is deteriorating; the city is maintaining it but it is a long-term concern and there are downstream campgrounds and a field.

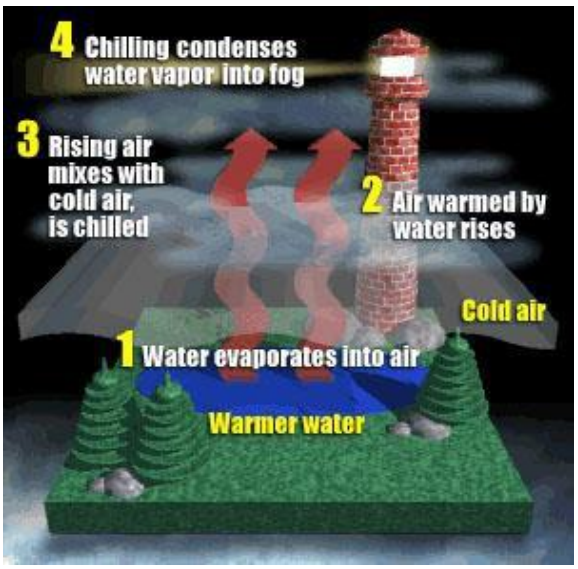
The current emphasis in flood mitigation is on long-range actions. Such actions include the adoption and ongoing maintenance of proper flood plain zoning ordinances and land use planning, primarily through the comprehensive plan. The county and the municipalities will work together to ensure that the various plans take into account the long-range mitigation planning as a consistent theme and to ensure data sharing and consistency between the communities. Also, it has been shown that floodplain management reduces the cost of damages attributed to flooding. In addition, the county will provide flood information to the public including

National Flood Insurance Program information and providing it via website link as necessary for flood preparedness materials. Some of this information is provided annually during Flood Awareness Week and in anticipation of flooding events; and is readily available on the Green Co. Emergency Management website.

Fog

Physical Characteristics

Fog, at its basic definition, is a cloud based on the ground rather than in the atmosphere.[81] Fog occurs when the air near the ground is saturated with moisture and condenses on tiny particles suspended in the air. These particles are called cloud condensation nuclei and actually attract water vapor molecules to their surfaces. Once condensation occurs on these tiny surfaces, the resulting liquid drops can remain suspended in the air because their weight causes them to descend slowly to the ground or be carried around by wind. The dew-point temperature, or saturation vapor pressure, can be reached by either adding more water vapor to the air or cooling the air down to the dew-point temperature. Fog is classified by the dominant formation process and exists as long as processes continue to maintain saturated conditions. There are several basic types of fog:



- Radiation Fog is caused by cooling close to the earth's surface. The earth gives off long-wave radiation which on a clear night travel out into space. If the temperature drops to the dew point close to the ground, radiation fog can form. Radiation fog is also known as ground fog. The fog normally disappears soon after sunrise as the sun's warmth evaporates it. Valley Fog is one type of Radiation Fog that forms in mountain valleys during winter and can be more than 1,500 feet thick. Often, the winter sun is not strong enough to evaporate the fog during the day. When the air cools again the following night, the fog often becomes thicker, which makes it even harder for the sun to burn it off the following day. These fogs can last for several days until strong winds blow the moist air out of the valley. The tendency for cool, dense air to pool at the bottom of valleys also enhances valley fog.

- Advection Fog results from the movement (advection) of warm, moist air from the south over a colder land mass. During the winter this is common when snow covers much of the Midwest. The snow cools the bottom portion of the moist airmass often resulting in condensation. The thickest advection fog usually forms during nights with light winds because humid air near the ground is not mixed with the drier air above. With light winds, the fog near the ground can become thick and reduce visibilities to zero; usually the fog burns off during the day but it can last many days if it is thick enough to block out the sun's light. This type of fog can occur almost anywhere in the United States, especially during winter warm-ups and early spring thaws. It can be widespread and very dangerous to commuters and aircraft travel.

[81] http://www.fi.edu/weather/events/fog.html

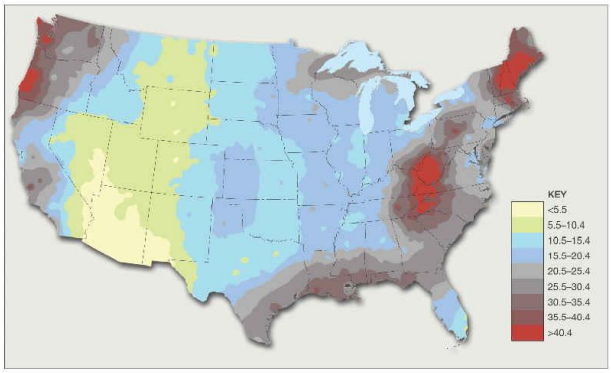
- Evaporation Fog around Wisconsin is caused by cold air crossing over warmer bodies of water. The water evaporates its moisture into the colder air which immediately condenses it into clouds and fog. This is what looks like steam over Lake Michigan, inland lakes, and rivers on a cold autumn or winter day. This rising fog can be found above thermal pools in Yellowstone National Park and is what you see when cool rain hits hot pavement. This may also be called "steam fog" or "sea smoke" when it forms over oceans. Sometimes this fog is lifted quickly and forms rotating whirls of fog known as steam devils.
- Upslope Fog is common near the Rockies, including the Denver area. If the winds are out of the east, the air flows up as it rises in elevation approaching the mountains. This can cool the air to its dew point and result in widespread fog.
- Rain Fog is created when late afternoon or evening showers and thunderstorms during the spring and summer leave the ground soaked just as the sun sets. Though the rain usually stops overnight, the high humidity level created by the rainfall will not allow the moisture to evaporate and as a result, fog forms. This occurs especially at times when there are light winds. As the air warms up the next morning, this rain- enhanced fog will usually burn off by midday.
- Precipitation Fog forms when rain or snow falls. As precipitation falls into drier air below the cloud, the liquid drops or ice crystals evaporate or sublimate directly into water vapor. The water vapor increases the moisture content of the air while cooling the air. This often saturates the air below the cloud and allows fog to form.

Frequency of Occurrence

Some locations on this planet have weather conditions that are conducive to making fog frequently such as:

- San Francisco, California has an average of 18 days of heavy fog each year.
- Cape Disappointment, Washington is the foggiest place with an average of 106 days of heavy fog per year.
- The foggiest area on the east coast of the United States is found along the rockbound coast of Maine. Moose Peak Lighthouse on Mistake Island, at an elevation of 72 feet, averages 1580 hours of heavy fog each year. Many other locations have problems with fog, such as Eastport, Maine with 65 days annually and Portland, with 55 days of heavy fog each year.
- Inland areas with regular heavy fog include parts of the Appalachian Mountains such as a peak area in West Virginia that averages over 100 days each year. Elkins, at an elevation of 1948 feet has about 81 days annually with heavy fog.

Average Number of Days per Year With Dense Fog[82]



[82] https://arcturan.com/fog/

The National Weather Services reported the following dense fog events in Green County between 1 January 1950 and 31 December 2021 [83]

Year	Date	Location	Human Losses	Damage Losses
1999	11/13	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/03	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/13	Green Co.	Death/Injury: 0	Property/Crop: $0
2000	01/09	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/25	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/20	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/22	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/24	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/25	Green Co.	Death/Injury: 0	Property/Crop: $0
2001	01/12	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/14	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/24	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/22	Green Co.	Death/Injury: 0	Property/Crop: $0
	04/07	Green Co.	Death/Injury: 0	Property/Crop: $0
	05/25	Green Co.	Death/Injury: 0	Property/Crop: $0
	06/07	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/03	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/22	Green Co.	Death/Injury: 0	Property/Crop: $0
	09/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/15	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/02	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/16	Green Co.	Death/Injury: 0	Property/Crop: $0
2002	02/20	Green Co.	Death/Injury: 0	Property/Crop: $0
	04/13	Green Co.	Death/Injury: 0	Property/Crop: $0
2003	03/20	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/23	Green Co.	Death/Injury: 0	Property/Crop: $0
2004	02/26	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/12	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/28	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/06	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/09	Green Co.	Death/Injury: 0	Property/Crop: $0
2005	1/11	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/26	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/27	Green Co.	Death/Injury: 0	Property/Crop: $0
2006	03/06	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/09	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/29	Green Co.	Death/Injury: 0	Property/Crop: $0
	05/09	Green Co.	Death/Injury: 0	Property/Crop: $0
	09/14	Green Co.	Death/Injury: 0	Property/Crop: $0
	09/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/11	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2007	03/09	Green Co.	Death/Injury: 0	Property/Crop: $0

[83]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Dense+Fog&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

	03/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/25	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/19	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2008	01/05	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/07	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/04	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/26	Green Co.	Death/Injury: 0	Property/Crop: $0
2009	03/10	Green Co.	Death/Injury: 0	Property/Crop: $0
	09/10	Green Co.	Death/Injury: 0	Property: $40.k Crop: $0
2010	03/07	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/10	Green Co.	Death/Injury: 0	Property/Crop: $0
	05/21	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/11	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/29	Green Co.	Death/Injury: 0	Property/Crop: $0
2012	01/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/26	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/01	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/02	Green Co.	Death/Injury: 0	Property/Crop: $0
	03/24	Green Co.	Death/Injury: 0	Property/Crop: $0
	04/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/26	Green Co.	Death/Injury: 0	Property/Crop: $0
	10/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/16	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/20	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/01	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/02	Green Co.	Death/Injury: 0	Property/Crop: $0
2013	01/11	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/03	Green Co.	Death/Injury: 0	Property/Crop: $0

As can be seen by the table, dense fog events usually occur in Green County several times per year, particularly in the winter and spring months and considering its geographical location and history, the assessment workgroup believes that Green County has a high probability of fog occurrence in the future. Due to the highly localized nature of dense fog, the formation of which is dependent on microclimate conditions such as temperature, moisture, terrain, winds, etc. it is very difficult to predict. The workgroup recognized that traffic accidents are the highest hazard from dense fog and as Green County has many high traffic volume roadways, the likelihood of damage (i.e., death and/or injury) due to fog is also considered high.

Vulnerability

Perhaps the largest vulnerability to fog is due to automobile traffic crashes. According to the Wisconsin Department of Transportation, dense fog contributes to hundreds of car accidents per year in the state. Some notable fog-related traffic crashes in the area of southeastern Wisconsin follow:

- On the morning of Friday, October 11, 2002, 50 vehicles were involved in a massive vehicle accident on Interstate 43 in Sheboygan County near Cedar Grove, Wisconsin just north of Waukesha County. This accident was the deadliest pile-up in Wisconsin history with ten individuals killed and over 40 people injured. Of the injured, seven were in critical condition and one was in serious condition at area hospitals immediately after the incident; 28 other people

were treated and released for injuries ranging from burns to broken bones. The accident occurred as cars heading south collided into one another as some vehicles slowed down in a dense fog. This led to a chain reaction as numerous cars were unaware of the scene hidden behind a veil of fog. Chad Kruse, a driver interviewed after the accident, described it by saying, "I entered the wall of fog, like someone took a blanket and threw it over the windshield." At the same time but separate from this incident, four other accidents occurred nearby on the interstate; all the individuals involved with these accidents survived.[84]

- Fourteen people were injured in January 1996 in a 26-car pileup on southbound I-43 near Ozaukee County Highway KK. The first driver struck said he had missed his exit because of heavy fog and had slowed down to look for another when he was hit from behind.[85]
- In March 1990, three people were killed and 31 injured in a 52-vehicle pileup on the Tower Drive Bridge in Green Bay after dense fog and smoke from nearby paper mills created a "white wall" that reduced visibility to less than 10 feet. The accident was believed to be triggered when a tanker truck overturned and a ruptured gas tank ignited. Vehicles following too closely on the fog-shrouded bridge slammed into the tanker and were engulfed by a sheet of flames.[86]

As seen in the true examples above, fog-related incidents can cause death, injury and property loss to the vehicle owners and occupants and their insurance companies. Responding governmental agencies also may suffer losses due to the cost of response, for damage done to roadways and structures due to fires and for potential injuries to responders working in a reduced- visibility zone. Citizens may be impacted by the closure of roadways and delay of activities; businesses may suffer losses due to the absence of workers due to delay, injury, and/or death and because of the delay of product on the roadways and direct loss of product in the crash (e.g., due to fire).

Hazard Mitigation Strategies

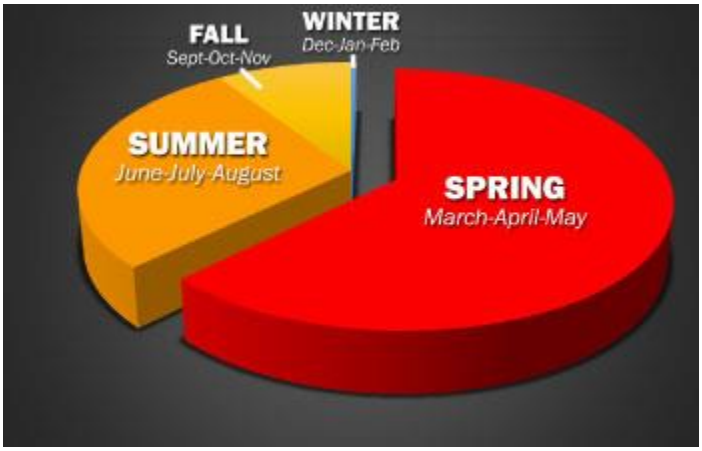
The goal of fog mitigation activities is to reduce the loss of lives and property due to these incidents. There are few cases where infrastructure would be impacted by fog so there is little that the community can do to plan future buildings and infrastructure in a way that will mitigate these problems. Most

[84] http://www.stoutonia.uwstout.edu/2002-2003/stories/021024/ne_04.html
[85] The Fog, The Deadliest Traffic Crash in Wisconsin History; Trooper Tim Austin; Wisconsin Trooper, Callan Publishing Ins., Minneapolis, MN; Spring 2003.
[86] http://www.jsonline.com/news/state/oct02/87083.asp

mitigation measures will involve public information about the largest dangers: automobile and boating crashes. The Green County Emergency Management Office will use current budget dollars to place links or brochures on the county website regarding safe driving procedures in the fog.

Wildfires

Wildfire (fires in forested, open, and/or agricultural land) season in Green County begins in March and continues through November, although fires can occur at any time during any month of the year. The fall season carries the highest risk of cropland fires (fields are stubble) while the spring season is riskiest for grassland fires (before new growth develops). Generally speaking, however, fires are more likely to occur whenever vegetation is dry as a result of a winter with little snow or a summer with sparse rainfall.



The Wisconsin Department of Natural Resources (DNR) is responsible for forest fire protection on approximately 18 million acres of forest and wildland in Wisconsin. The U.S. Forest Service maintains forest fire protection on two million acres of this land while local fire departments retain responsibility for the remaining wooded acreage.

Physical Characteristics

Green County does not have significant tree cover; canopy fires are therefore not common and are not considered a risk. Wooded areas that do exist are managed by county and municipal parks departments or private citizens. The primary risk is for grassland and crop fires. According to the DNR, there are approximately 1,500 fires annually that burn over 5,000 acres of the land that they protect; over 90% of these fires are human-caused. It should be noted that these figures do not include areas of the state where a local fire department has primary responsibility for service.[87]

Local fire departments provide the primary fire management services within the county and pairs with The Wisconsin Department of Natural Resources (DNR) to provide firefighting protection as needed.

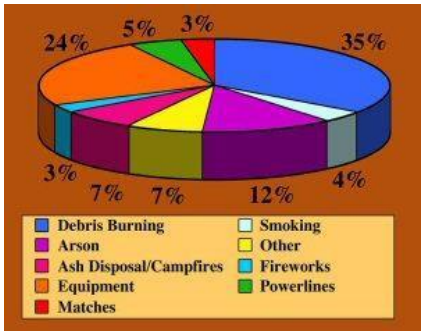
Frequency of Occurrence

Weather is the single most important factor influencing how fires start and spread. Temperature, wind, humidity and precipitation are the key weather components that determine the daily fire

[87] http://dnr.wi.gov/org/land/forestry/fire/fire-ps.htm

danger. Wildfires can happen just about any time of year, but history has shown how changes in the landscape and seasonal trends greatly impact fire occurrence.[88]

While the total number of open fires in Wisconsin has decreased over the years, the potential danger to lives and property remains due to the increased encroachment of development into previously open lands. Overall, the probability of a wildfire in Green County is high due to the extensive agricultural lands in the county.



Vulnerability

Wildfires can impact the ecology of the open lands. Green County, which has multiple forests, would be impacted by a wildfire since a disruption from fire could erase the usability of this habitat for wildlife and/or recreational purposes for many years.

In 2003, the National Association of State Foresters produced a Field Guidance for Identifying and Prioritizing Communities-at-Risk (CAR). The purpose of the guide was to provide states with a nationally consistent approach for assessing and displaying the risks to communities from wildfire. The DNR, in cooperation with its federal and tribal partners, began working on the statewide assessment of Communities-at-Risk in 2004. Communities-at-Risk is a model to identify broad areas of the state that are at relatively high exposure to resource damage due to wildfire. Results of the model can then be used by local governments developing Community Wildfire Protection Plans (CWPP) and by the DNR to reduce local risks of wildland fire by prioritizing hazard mitigation and fire protection efforts.

The approach used in this risk assessment model is based on the "Methodology" section of the NASF Field Guidance document which recommends assessing and mapping four factors:

- Historic Fire Occurrence
- Hazard
- Values Protected
- Capabilities

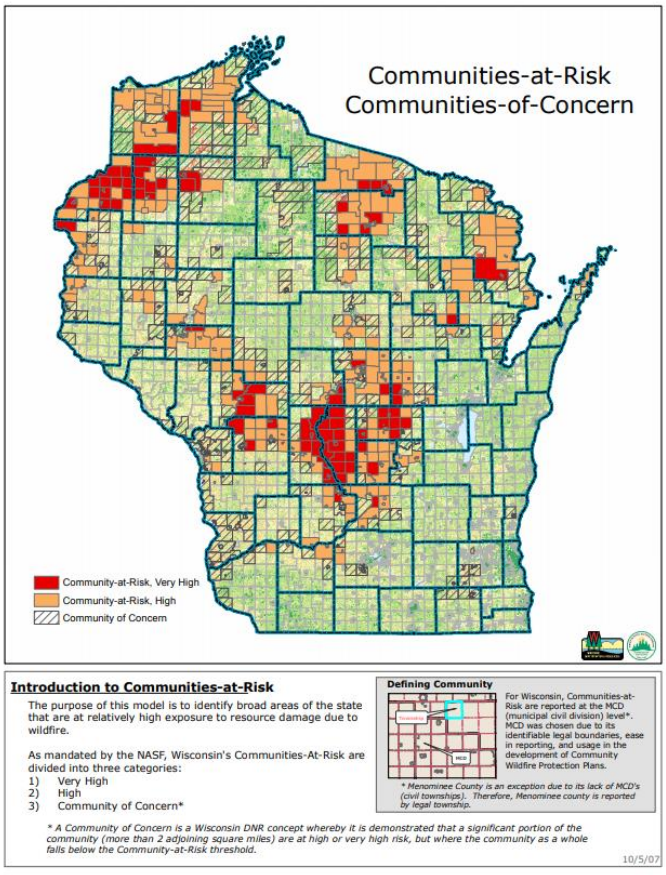
Modifications to this methodology were made to fit the GIS mapping data layers available for Wisconsin. The Wisconsin DNR uses three factors to assess Communities-at-Risk to wildfire damage:

- Hazard – the relative likelihood that an ignited wildfire will achieve sufficient intensity to threaten life or property based on land cover type and historic fire regime.
- WUI (Values at Risk) – the relative vulnerability of each 2000 census block to wildfire damage based on housing density and spatial relationship with undeveloped vegetation based on housing density and proximity to vegetation (Wisconsin's Wildland-Urban Interface). Wisconsin's WUI was layered with a weighted vegetation layer to accentuate proximity to flammable vegetation.
- Ignition Risk – the relative likelihood of a wildfire ignition within a given 30-m pixel based on historic fire occurrence, population density and proximity to a potential ignition source.

[88] https://dnr.wi.gov/topic/ForestFire/seasonalTrends.html

Models were developed in GIS to create statewide grids representing each of the three weighted inputs {Hazard (40%), WUI (30%), and Risk (30%)}. This composite grid represents communities-at-risk (CAR) on a 0-9 scale of threat, with zero representing no threat and nine a very high threat. The data was then represented by municipal civil divisions (MCDs), which are city and village boundaries. Quantitative markers were assigned for five threat levels: very low, low, moderate, high, and very high and those MCDs determined to have a high or very high threat of wildfire were considered CARs. 337 communities met the requirements for being "at risk."

Communities in Wisconsin vary considerably in size. This is particularly evident in a north-south pattern, with smaller, more rural towns in northern Wisconsin and larger, more urban towns in southern Wisconsin. Because of this variation in size, the potential for missing areas of high risk due to smoothing out by other parts of the town was greater for larger towns. For this reason, WI DNR incorporated a "Community of Concern" category to identify those towns that have portions of their town in high risk of wildfire but were not otherwise included as a community-at-Risk. A Community-of- Concern was determined to be an area of at least two contiguous square miles at high or very high risk; 237 Wisconsin communities were named as Communities-of-Concern.[89] As can be seen on the map there are no Communities at Risk or Communities of Concern in Green County.



[89] Wisconsin State Hazard Mitigation Plan

Hazard Mitigation Strategies

Government at all levels is developing mitigation programs in fire control and firefighting tactics with the goal of protecting lives and property from loss due to forest and wildfire. Local fire departments attend regular trainings on firefighting tactics to keep their skills honed. Green County Emergency Management assists local departments and their staff with available grant applications for training, exercising, equipment and planning as able and requested.

Local fire departments responsible for wildfire fighting would like to continue to enhance local intergovernmental cooperation in emergency response by, for example, continuing to provide training for fire fighters, which is usually done with Wisconsin DNR fire rangers in spring.

The Brodhead Fire Department would also like to investigate possible equipment solutions for access for swampy areas around Decatur and Spring Grove. There was a fire in that area in the Spring 2016 that highlighted that there was no equipment available to access the environmental conditions in that area.

All departments are committed to providing good public information on fire-safety and wildfire concerns on an ongoing basis with a special emphasis during Fire Safety Week in October and Wildfire Prevention Week in April of each year.

The hazard mitigation strategies listed above primarily involve providing information on general fire safety measures to the public for residential and commercial structures and providing ongoing training to the firefighters who fight these types of fires.[90]

Landslide

The term landslide includes a wide range of ground movement such as rock falls, deep failure of slopes and shallow debris flows. Although gravity acting on an over-steepened slope is the primary reason for a landslide, there may be other contributing factors. Factors likely to be seen in Green County include:

- Erosion by rivers or lakes creating over-steepened slopes.
- Rock and soil slopes being weakened through saturation by snowmelt or heavy rains.
- Excess weight from the accumulation of rain or snow, stockpiles of rock or ore, waste piles, or from man-made structures stressing weak slopes to failure.[91]

Physical Characteristics

Landslides may include any combination of natural rock, soil or artificial fill and are classified by the type of movement and the type of material. The types of movement are slides, flows, lateral spreads, and falls and topples; a combination of two or more landslide movements is a complex movement:

- Slides: straight or rotating downward displacements along one or more failure surfaces of soil or rock as a single intact mass or a number of pieces
- Flows: a rapid, downhill mass movement of a “slurry” comprised of loose soil, rocks, organic matter, air and water
- Lateral spreads: large movements of rock, fine-grained soils, or granular soils distributed laterally

[90] https://dnr.wi.gov/topic/forestFire/documents/carMap.pdf

[91] http://landslides.usgs.gov/html_files/nlic/page5.html and http://www.eoearth.org/article/Landslide

- Falls and Topples: masses of rocks or material that rapidly detach from a steep slope or cliff that free-fall, roll, or bounce.

Almost any steep or rugged terrain is susceptible to landslides under the right conditions. The most hazardous areas are steep slopes on ridges, hills, and mountains; incised stream channels; and slopes excavated for buildings and roads. Slide potentials are enhanced where slopes are destabilized by construction, heavy rainfall, floods, or river erosion. Debris flows generally occur during intense rainfall on water saturated soil. Surface runoff channels along roadways and below culverts are common sites of debris flows.

Landslides often occur together with other major natural disasters thereby exacerbating relief and reconstruction efforts:

- Floods and landslides are closely related and both involve precipitation, runoff and ground saturation that may be the result of severe thunderstorms.
- Landslides into a reservoir may indirectly compromise dam safety or a landslide may even affect the dam itself.
- Wildfires may remove vegetation from hillsides, significantly increasing runoff and landslide potential.

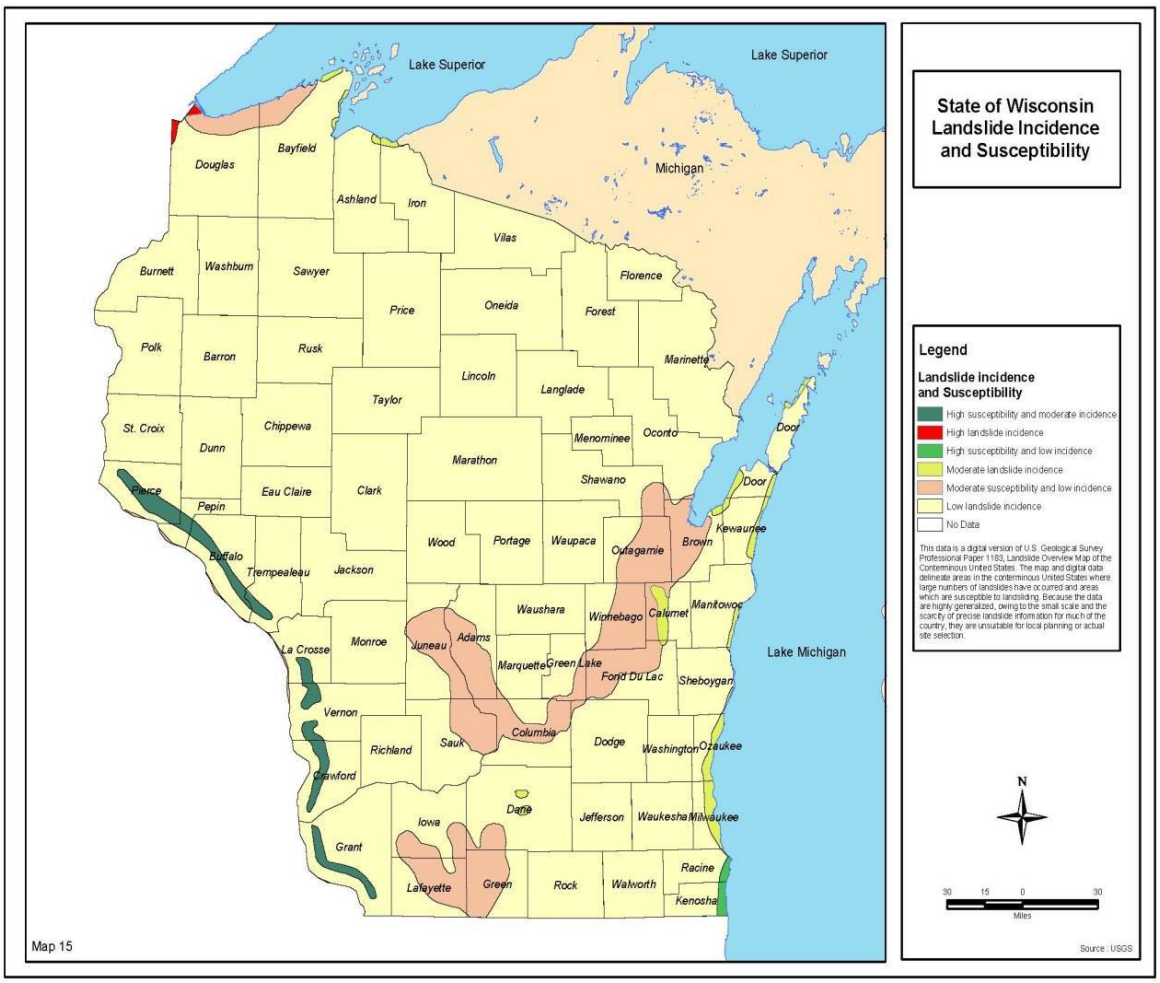
Sinkholes can form naturally in areas with karst geology (i.e., areas with limestone or other bedrock that can be dissolved by water). As the limestone rock under the soil dissolves over time from rainfall or flowing groundwater, a hollow area may form underground into which surface soil can sink. Sinkholes also can be caused by human activity such as collapsed, abandoned underground mines. Even though sinkholes have not been a factor in any natural disaster, identifying areas with karst conditions is important for not only public safety and protection of structures but because karst features provide direct conduits to groundwater. Areas with karst conditions are vulnerable to groundwater contaminants from pollutants entering a sinkhole, fissure, or other karst feature.

Frequency of Occurrence

According to the U.S. Geological Survey, landslides are a widespread geologic hazard, occurring in all 50 states where they cause on average $1 to $2 billion in damages and more than 25 fatalities annually. Landslides pose serious threats to highways; railroads and structures that support fisheries, tourism, timber harvesting, mining, and energy production. Expanding urban development and other land uses have increased the incidence of landslide disasters in the United States.

Even though there have been no recent reports of landslide in Green County, Wisconsin Emergency Management has determined that Green County has areas which have a low incidence of landslide and areas with a moderate susceptibility and a low incidence of landslide. This leads to a rating of a low likelihood of a landslide in the southern and north central areas of the county; and a moderate likelihood in the rest of the county. In the moderate belt, there is a moderate probability of damage due to a landslide.

The karst potential map shows that Green County has a minimal amount of deep karst features throughout the entire county. The presence of this geologic feature supports a low probability of complications (e.g., sinkholes, fissures to groundwater) to residents. The good news is that the complications due to karst geology have a low probability of causing significant damage, injury, or death.



Vulnerability

The most likely consequences of landslides in Green County would be damage to structures built on eroding bluffs. This has happened to several homes in other Wisconsin counties along the Mississippi River. Karst geology, which has been identified in some parts of Green County, can lead to sinkholes under structures such as homes, businesses, roadways, and railroads causing economic losses and possible injury to residents and the community.

Hazard Mitigation Strategies

The goal of landslide mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. Although the physical cause of many landslides cannot be removed, geologic investigations, good engineering practices and effective enforcement of land-use management regulations can reduce landslide hazards. Karst features should be considered in land use planning, stormwater management, and hazardous materials planning to avoid possible damage to structures due to sinkholes or contamination of groundwater. Green County will continue to work with its municipal partners to ensure that areas at risk of landslide and karst-related complications are identified and mitigation strategies are employed as appropriate.

This coordination and cooperation among the private sector and various state, county, and municipal planning and zoning departments will reduce effects on existing and future buildings and infrastructure by ensuring that safety is regulated and engineered into them.

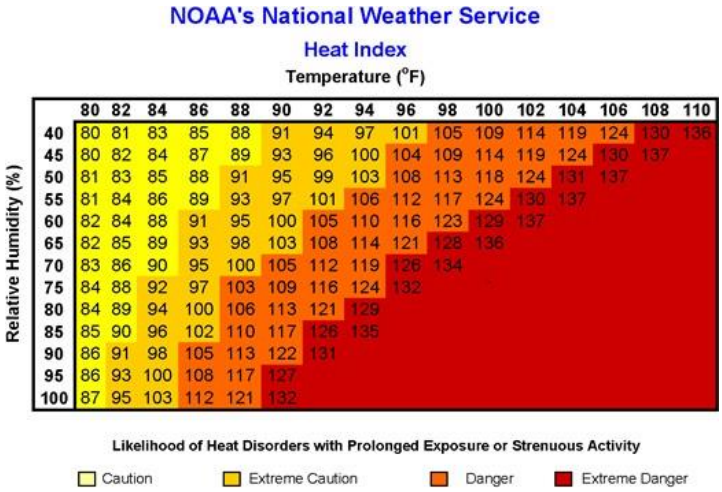
Severe Temperatures

Characteristics

Temperature extremes can cause disruption of normal activities for the population, property loss, and even the loss of life, especially among the more vulnerable members of our population such as children and the elderly.

Physical Characteristics: Heat

Heat emergencies are a result of the combination of very high temperatures and very humid conditions. The Heat Index estimates the relationship between these two conditions and reports them as a danger category, as can be seen in the following table[92]:



Heat Index and Disorders Table			
Danger Category		**Heat Disorders**	**Apparent Temperatures [°F]**
IV	Extreme Danger	Heatstroke or sunstroke imminent.	>130
III	Danger	Sunstroke, heat cramps, or heat exhaustion likely; heat stroke possible with prolonged exposure and physical activity.	105-130
II	Extreme Caution	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and physical activity.	90-105
I	Caution	Fatigue possible with prolonged exposure and physical activity.	89-90

The major risks to people due to extreme heat are:

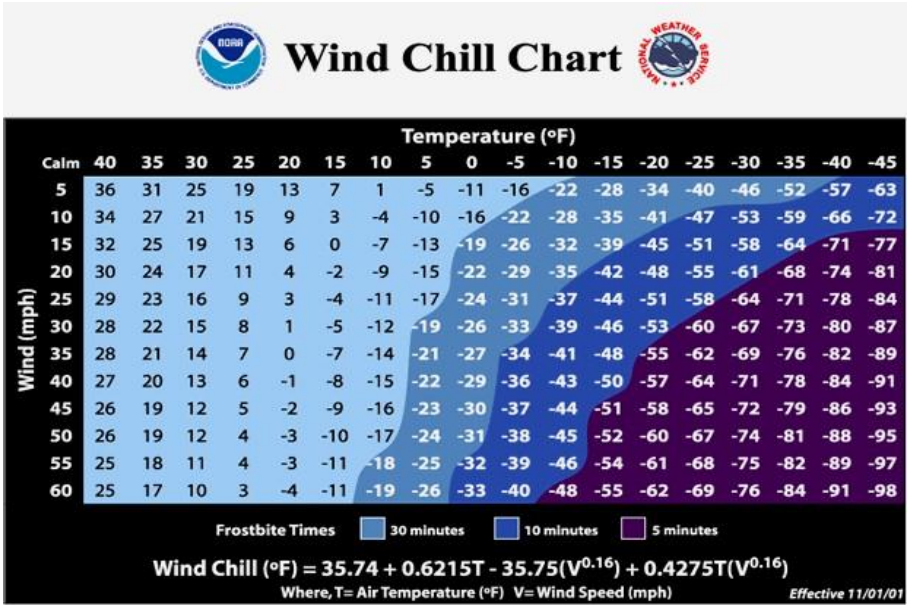
- Heatstroke – a potentially lethal medical emergency where the ability of a person to thermo-regulate is compromised resulting in the rise of the body's core temperature to above 105°F (Fahrenheit).
- Heat Exhaustion – a less threatening medical condition where the victim complains of dizziness, weakness and/or fatigue. The victim may have a normal or slightly elevated temperature and usually can be successfully treated with fluids.
- Heat Syncope – a sudden "faint" or loss of consciousness usually brought on by exercising in warmer weather than one is accustomed to, usually no lasting effect.
- Heat Cramps – muscular cramping brought on by exercising in warmer weather than one is accustomed to, no lasting effect.

Extreme heat conditions may also affect pets and livestock, decreasing agricultural output by the latter. Crops may suffer reduced yield due to extremely hot conditions.

[92] FEMA, 1997; NWS, 1997

Physical Characteristics: Cold

Wind chill is a relationship between wind and cold that is based on the rate of heat loss from exposed skin. As the wind speed increases, heat is drawn from the body, driving down skin temperature and eventually core body temperature. The following table illustrates this relationship.[93]



The major risks to people due to extreme cold are:

- Hypothermia – occurs when, due to exposure to cold, the body is unable to maintain its proper core temperature. It may occur in temperatures above freezing and may lead to death.
- Frostbite – describes local cooling, usually to an extremity, which occurs when exposure to cold air or liquid causes constriction of the blood vessels. There are three degrees of frostbite:
    - Frostnip – brought on by direct contact with a cold object or exposure to cold air or water. Tissue damage is minor and response to treatment is usually very good.
    - Superficial Frostbite – involves the skin and subcutaneous layers.
    - Freezing – is deep frostbite in which the skin, subcutaneous layers and deeper structures (e.g., muscles, bone, deep blood vessels, organ membranes) of the body are affected and can become frozen.
- Chilblains - lesions that occur from repeated/chronic exposure of bare skin to temperatures of 60°F or lower.
- Trench foot – a condition that occurs when the lower extremities remain in cool water for a prolonged period of time.

Frequency of Occurrence: Heat

Wisconsin has been affected by several bouts of extreme heat including during the Dust Bowl period from 1934-1936. Excessive heat events recorded by the National Weather Service in Green County between 1 January 1950 and 31 December 2020 include the following three events:[94]

[93] National Weather Service: http://www.nws.noaa.gov/om/windchill/index.shtml

[94] https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Excessive+Heat&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

Year	Date	Location	Damage Losses
2011	07/17	Green Co.	Property/Crop: $0
2012	07/02	Green Co.	Property/Crop: $0
2018	06/29	Green Co.	Property/Crop: $0

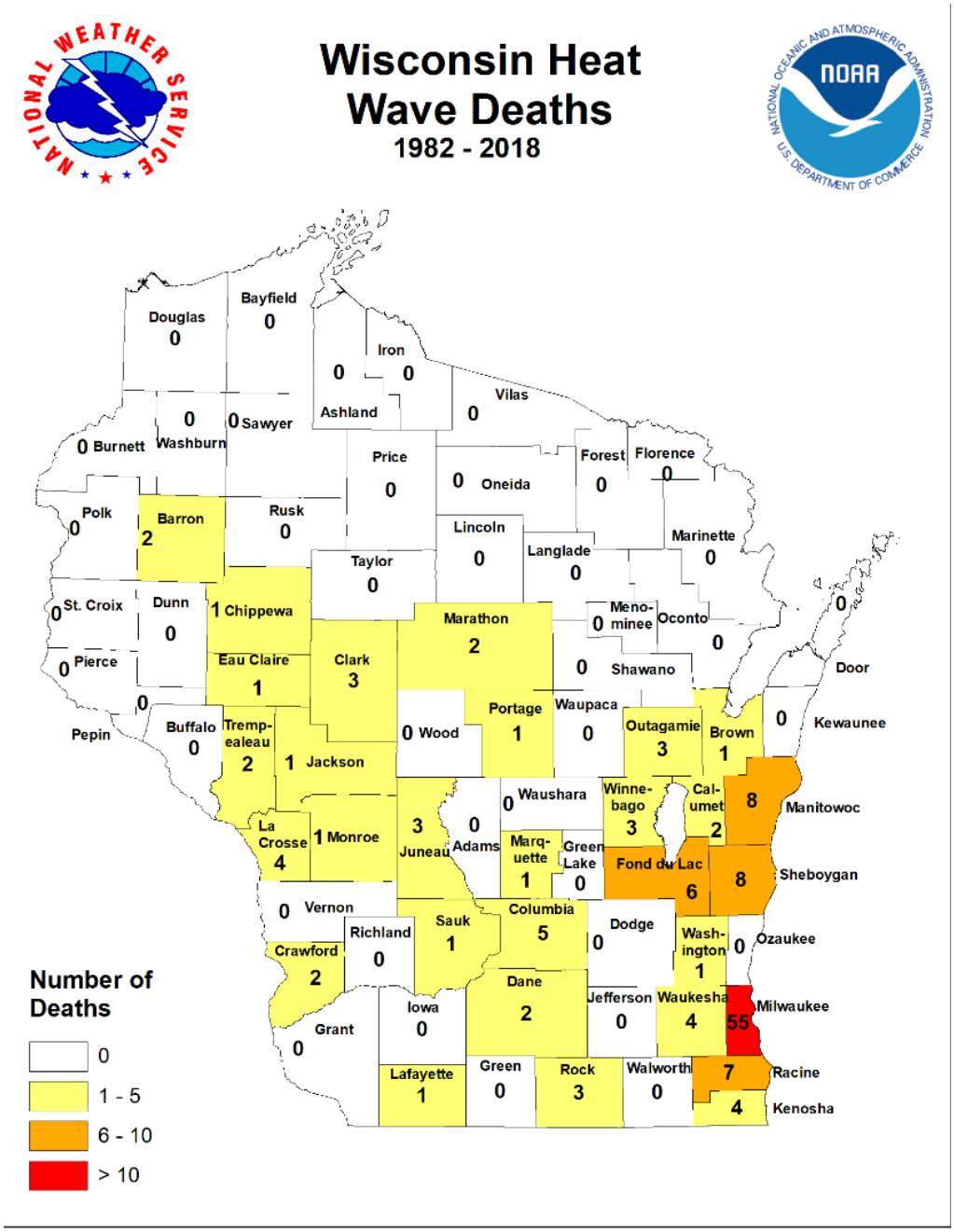
Heat events recorded by the National Weather Service in Green County between 1 January 1950 and 31 December 2020:[95]

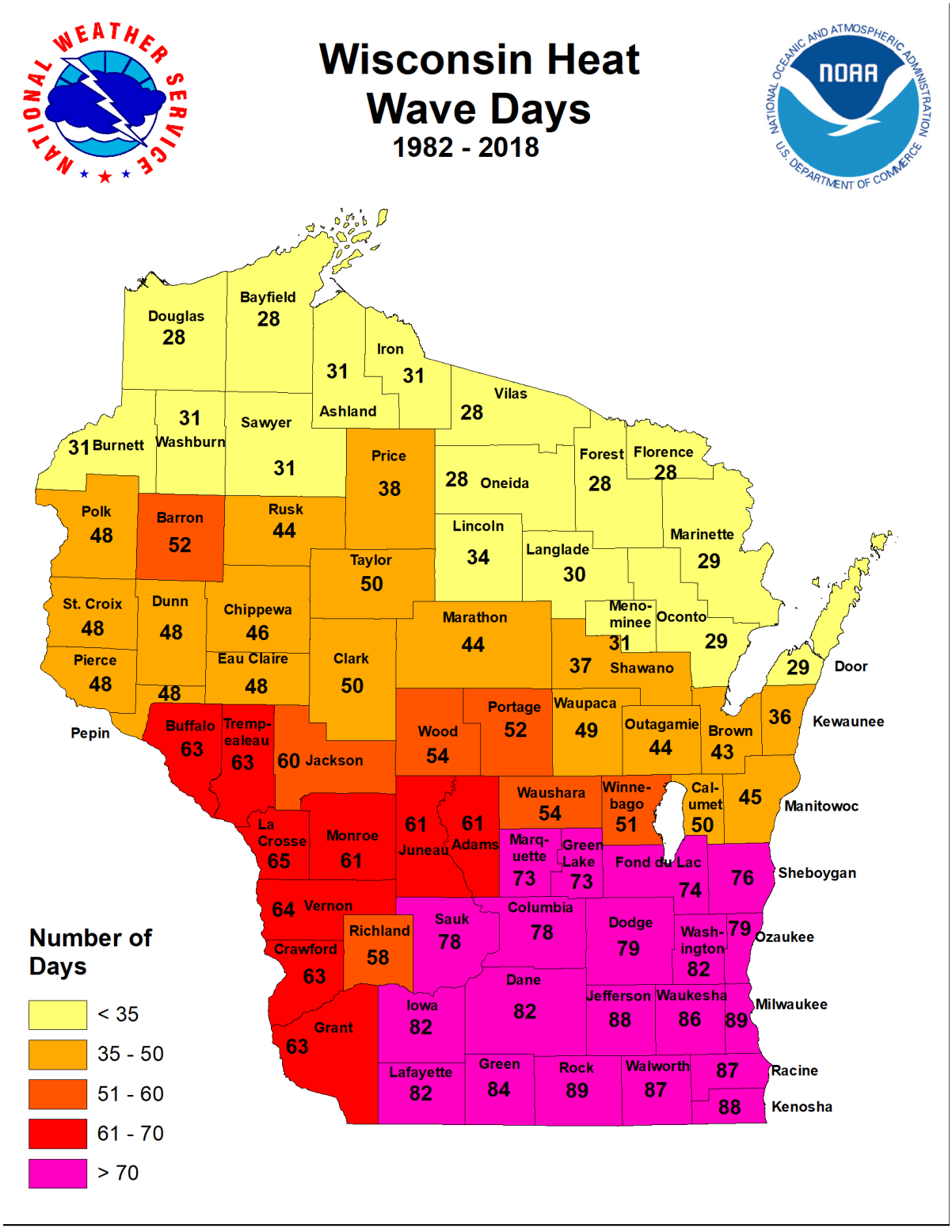
Year	Date	Location	Human Losses	Damage Losses
1997	10/03	Green Co.	Death/Injury: 0	Property/Crop: $0
1998	11/28	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/01	Green Co.	Death/Injury: 0	Property/Crop: $0
1999	07/04	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/29	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/08	Green Co.	Death/Injury: 0	Property/Crop: $0
	11/13	Green Co.	Death/Injury: 0	Property/Crop: $0
2001	07/21	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/31	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/06	Green Co.	Death/Injury: 0	Property/Crop: $0
2002	04/15	Green Co.	Death/Injury: 0	Property/Crop: $0
	06/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/01	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/08	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2006	07/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/01	Green Co.	Death/Injury: 0	Property/Crop: $0
2009	06/22	Green Co.	Death/Injury: 0	Property/Crop: $0
2010	07/14	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/11	Green Co.	Death/Injury: 0	Property/Crop: $0
2011	07/01	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2012	06/28	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/16	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/18	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/23	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/25	Green Co.	Death/Injury: 0	Property/Crop: $0
2013	07/16	Green Co.	Death/Injury: 0	Property/Crop: $0
	08/30	Green Co.	Death/Injury: 0	Property/Crop: $0
2014	07/22	Green Co.	Death/Injury: 0	Property/Crop: $0
2016	07/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2018	06/16	Green Co.	Death/Injury: 0	Property/Crop: $0
	07/04	Green Co.	Death/Injury: 0	Property/Crop: $0
2019	07/19	Green Co.	Death/Injury: 0	Property/Crop: $0

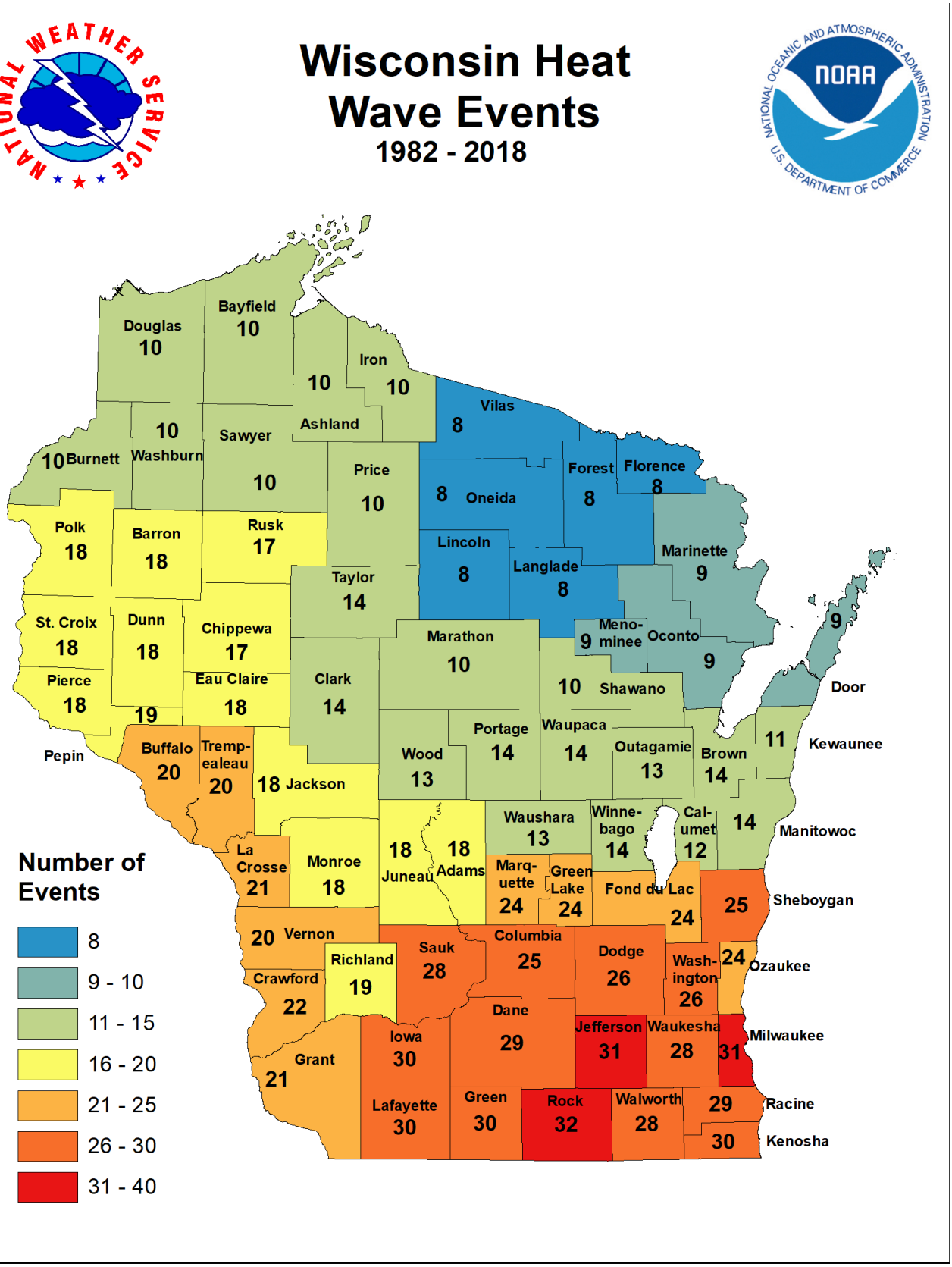
According to the State of Wisconsin Hazard Mitigation Plan, extreme heat is the number-one weather killer in Wisconsin with most of the heat deaths attributed to major heat waves. As can be seen by the

[95]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Heat&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

historical tables, Green County, like the rest of the state, is likely to experience extreme heat events every two to three years with extended, major heat waves occurring about every two decades. The workgroup therefore felt that there was a medium likelihood of occurrence in any given year. The committee also felt that the loss of property, primarily crop and livestock output has a high likelihood of occurring in a drought year. The loss of life or injury to people has a medium likelihood of occurrence for the general population but the committee recognized that the likelihood increases for certain populations such as the elderly, chronically ill, children, those who work outdoors and those with limited financial resources (i.e., to pay for air conditioning).




Wisconsin Heat Wave Days
1982 - 2018
NATIONAL WEATHER SERVICE
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
Douglas 28
Bayfield 28
Iron 31
Ashland 31
Vilas 28
Sawyer 31
Washburn 31
Burnett 31
Price 38
Oneida 28
Forest 28
Florence 28
Polk 48
Barron 52
Rusk 44
Taylor 50
Lincoln 34
Langlade 30
Marinette 29
St. Croix 48
Dunn 48
Chippewa 46
Eau Claire 48
Clark 50
Marathon 44
Meno-minee 31
Oconto 29
Pierce 48
Pepin 48
Buffalo 63
Tremp-ealeau 63
Jackson 60
Wood 54
Portage 52
Waupaca 49
Shawano 37
Outagamie 44
Brown 43
Door 29
Kewaunee 36
La Crosse 65
Monroe 61
Juneau 61
Adams 61
Waushara 54
Winne-bago 51
Cal-umet 50
Manitowoc 45
Marq-uette 73
Green Lake 73
Fond du Lac 74
Sheboygan 76
Vernon 64
Richland 58
Sauk 78
Columbia 78
Dodge 79
Wash-ington 82
Ozaukee 79
Crawford 63
Grant 63
Iowa 82
Dane 82
Jefferson 88
Waukesha 86
Milwaukee 89
Lafayette 82
Green 84
Rock 89
Walworth 87
Racine 87
Kenosha 88
Number of Days
< 35
35 - 50
51 - 60
61 - 70
> 70


Wisconsin Heat Wave Events
1982 - 2018
NATIONAL WEATHER SERVICE
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
Douglas 10
Bayfield 10
Iron 10
Ashland 10
Vilas 8
Florence 8
Forest 8
Oneida 8
Price 10
Sawyer 10
Washburn 10
Burnett 10
Polk 18
Barron 18
Rusk 17
Taylor 14
Lincoln 8
Langlade 8
Marinette 9
Oconto 9
Meno-minee 9
Door 9
St. Croix 18
Dunn 18
Chippewa 17
Eau Claire 18
Clark 14
Marathon 10
Shawano 10
Pierce 18
Pepin 19
Buffalo 20
Tremp-ealeau 20
Jackson 18
Wood 13
Portage 14
Waupaca 14
Outagamie 13
Brown 14
Kewaunee 11
Manitowoc 14
Waushara 13
Winne-bago 14
Cal-umet 12
La Crosse 21
Monroe 18
Juneau 18
Adams 18
Marq-uette 24
Green Lake 24
Fond du Lac 24
Sheboygan 25
Vernon 20
Richland 19
Sauk 28
Columbia 25
Dodge 26
Wash-ington 26
Ozaukee 24
Crawford 22
Grant 21
Iowa 30
Dane 29
Jefferson 31
Waukesha 28
Milwaukee 31
Lafayette 30
Green 30
Rock 32
Walworth 28
Racine 29
Kenosha 30
Number of Events
8
9 - 10
11 - 15
16 - 20
21 - 25
26 - 30
31 - 40

Frequency of Occurrence: Cold

Wisconsin regularly has extreme cold temperatures as part of its winter climate. Following is a chart that outlines extreme cold/wind chill events which have been recorded by the National Weather Service in Green County between 1 January 1950 and 31 December 2020:[96]

Year	Date	Location	Human Losses	Damage Losses
2008	02/10	Green Co.	Death/Injury: 0	Property/Crop: $0
2009	01/15	Green Co.	Death/Injury: 0	Property/Crop: $0
2014	01/06	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/27	Green Co.	Death/Injury: 0	Property/Crop: $0
2019	01/29	Green Co.	Death/Injury: 0	Property/Crop: $0

Wisconsin regularly has cold temperatures as part of its winter climate. Following is a chart that outlines cold/wind chill events which have been recorded by the National Weather Service in Green County between 1 January 1950 and 31 December 2021:[97]

Year	Date	Location	Human Losses	Damage Losses
1996	01/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/31	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/01	Green Co.	Death/Injury: 0	Property/Crop: $0
1997	01/17	Green Co.	Death/Injury: 0	Property/Crop: $0
1999	01/05	Green Co.	Death/Injury: 0	Property/Crop: $0
2005	12/18	Green Co.	Death/Injury: 0	Property/Crop: $0
2006	02/17	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/18	Green Co.	Death/Injury: 0	Property/Crop: $0
2007	02/03	Green Co.	Death/Injury: 0	Property: $2K Crop: $0
2008	01/19	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/30	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/15	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2009	01/13	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/14	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/24	Green Co.	Death/Injury: 0	Property/Crop: $0
2011	01/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2013	01/21	Green Co.	Death/Injury: 0	Property/Crop: $0
2015	01/07	Green Co.	Death/Injury: 0	Property/Crop: $0
	01/09	Green Co.	Death/Injury: 0	Property/Crop: $0
2016	12/14	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/18	Green Co.	Death/Injury: 0	Property/Crop: $0
2017	12/25	Green Co.	Death/Injury: 0	Property/Crop: $0
2018	01/01	Green Co.	Death/Injury: 0	Property/Crop: $0
2021	02/06	Green Co.	Death/Injury: 0	Property/Crop: $0
	02/13	Green Co.	Death/Injury: 0	Property/Crop: $0

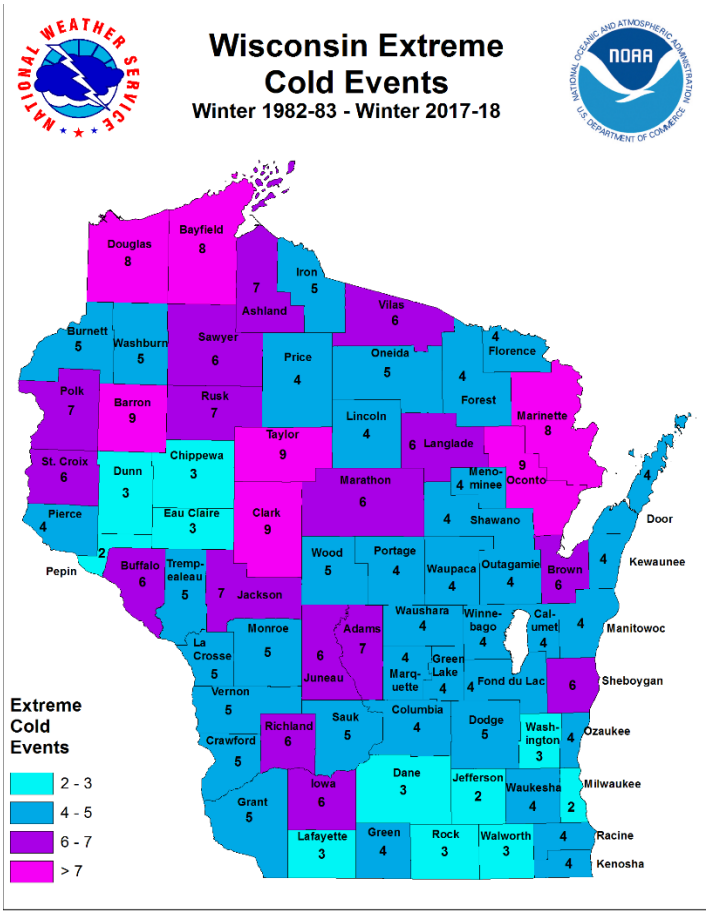
[96]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Extreme+Cold%2FWind+Chill&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=2021&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

[97]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Cold%2FWind+Chill&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

As can be seen in the above charts, there are few years where a cold event does not occur in Green County. After examining this data, the workgroup believed that cold and/or extreme cold has a medium likelihood of occurrence in any given year. Since there are no crops out during the winter and most properties (homes, businesses, barns) are insulated for this climate, the loss of property due to temperature extremes is not high although individuals may suffer damage due to water main breaks and other such problems. They further believed that the loss of life or injury to people has a medium likelihood of occurrence among the general population when there are cold/extreme cold weather events. Again, the workgroup recognized that people who work outdoors, who have limited financial resources, the elderly, the young and the chronically ill have a higher risk profile.

Vulnerability

Vulnerability to temperature extremes is generally assessed on an individual basis with the most vulnerable sections of our community's population having the greatest risk. These people may include the elderly, the very young, and the chronically ill. People from economically disadvantaged backgrounds, especially those listed in the categories above, are even more vulnerable since they are least able to afford the cost of adequate heating or air conditioning systems. The Green County social services agencies are aware of many of these people who reside in our communities and they, along with the public health department, have plans and access to economic assistance programs to help these people in times of concern.



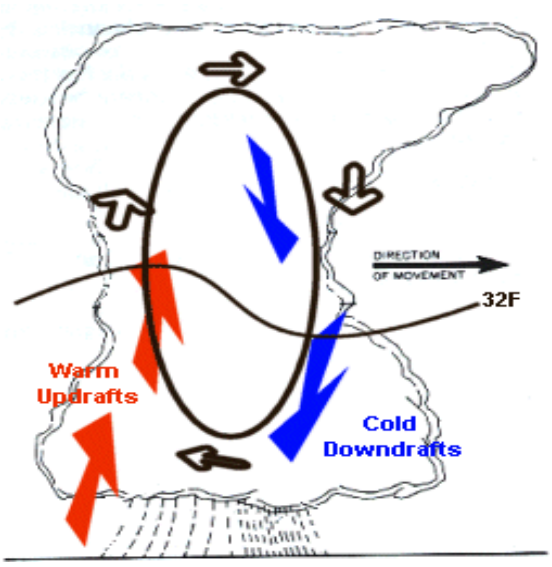
Hazard Mitigation Strategies

The goal of severe temperature mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. Temperature extremes are difficult for a community to mitigate and the risks are to the health and safety of citizens, animals and crops. There are no strategies that need to be employed to reduce damages to buildings and infrastructure. The county and its municipalities will continue to monitor the impact of climate change to communities and will work with partners to monitor cooling and warming center availability. There are plans to make the Browntown Village Hall available during the day for use as a temperature center.

Green County Emergency Management and its municipal and health partners will continue to participate in public outreach during the annual statewide public information campaigns for Winter and Heat Awareness Weeks and provides links to personal preparedness information on their websites.

Storms: Hail

Studies of thunderstorms indicate that two conditions are required for hail to develop: sufficiently strong and persistent up-draft velocities and an accumulation of liquid water in a super-cooled state in the upper parts of the storm. Hailstones are formed as water vapor in the warm surface layer rises quickly into the cold upper atmosphere. The water vapor is frozen and begins to fall; as the water falls, it accumulates more water vapor. This cycle continues until there is too much weight for the updraft to support and the frozen water falls too quickly to the ground to melt along the way. The graphic to the right depicts hail formation.[98] Injury and loss of life are rarely associated with hailstorms, however extensive property damage is possible, especially to crops.



Physical Characteristics

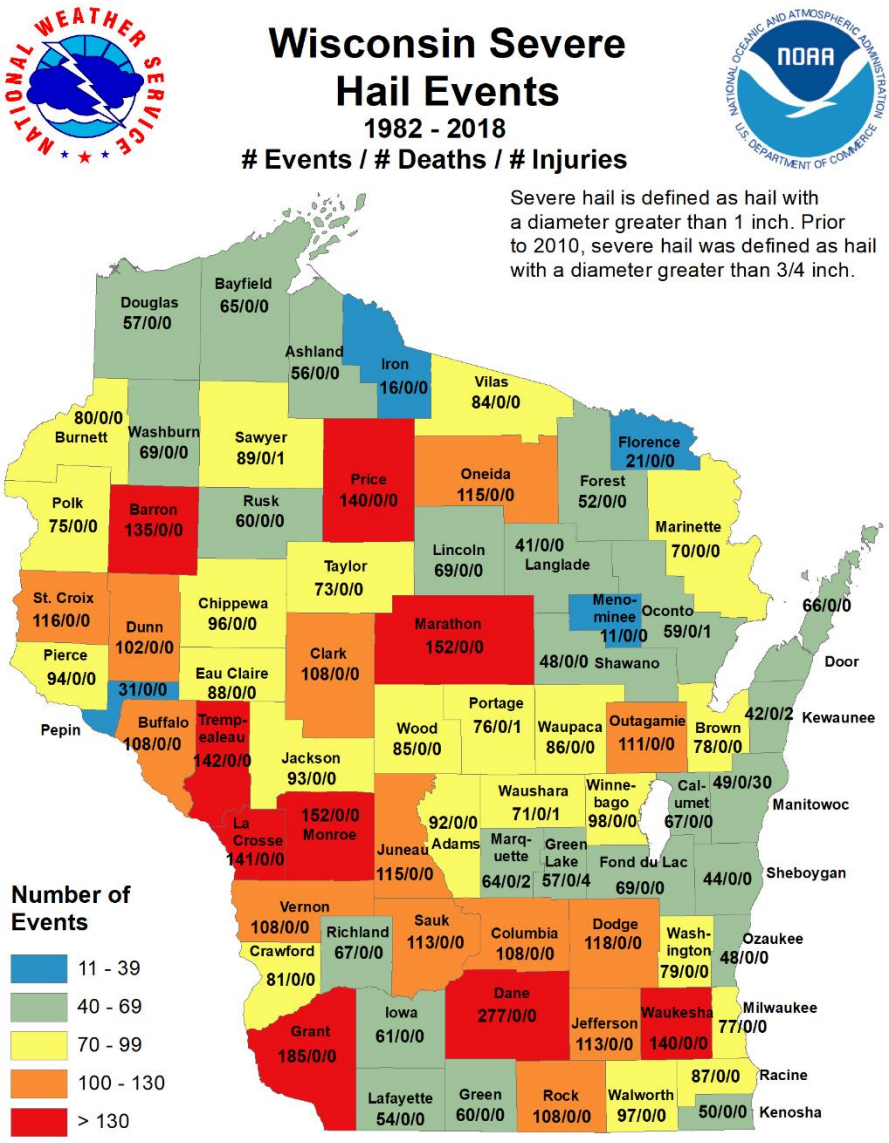
Hail may be spherical, conical or irregular in shape and can range in size from barely visible in size to grapefruit-sized dimensions. Hailstones equal to or larger than a penny are considered severe. Hail falls in swaths that can be from twenty to one hundred miles long and from five to thirty miles wide. A hail swath is not a large continuous path of hail but generally consists of a series of hail cells that are produced by individual thunderstorm clouds traveling in the same area.

Hail Size Estimates			
Size	**Inches in Diameter**	**Size**	**Inches in Diameter**
Pea	1/4 inch	Golf Ball	1 3/4 inches
Marble/mothball	1/2 inch	Tennis Ball	2 1/2 inches
Dime/Penny	3/4 inch	Baseball	2 3/4 inches
Nickel	7/8 inch	Tea cup	3 inches
Quarter	1 inch	Grapefruit	4 inches
Ping-Pong Ball	1 1/2 inch	Softball	4 1/2 inches

[98] NWS, January 10, 2003

Frequency of Occurrence

Hailstorms usually occur from May through August and Wisconsin averages two or three hail days per year. Green County, as can be seen in the map, has a medium probability of hail occurrence in Wisconsin. The likelihood of damage due to hail is therefore considered high.



Most hail damage occurs in rural areas because maturing crops are particularly susceptible to bruising and other damage caused by hailstones. The four months of hailstorm activity correspond to the growing and harvesting seasons for most crops. Following is a table that shows the hail events recorded by the National Weather Service between 1 January 1950 and 31 December 2020.[99]

[99]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Hail&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

Location	Date	Property Damage/Loss	Crop Damages/Loss
GREEN CO.	6/14/1974	0.00K	0.00K
GREEN CO.	6/14/1974	0.00K	0.00K
GREEN CO.	10/5/1981	0.00K	0.00K
GREEN CO.	4/25/1984	0.00K	0.00K
GREEN CO.	10/31/1984	0.00K	0.00K
GREEN CO.	4/5/1988	0.00K	0.00K
GREEN CO.	3/13/1990	0.00K	0.00K
GREEN CO.	3/13/1990	0.00K	0.00K
GREEN CO.	3/13/1990	0.00K	0.00K
GREEN CO.	7/4/1990	0.00K	0.00K
GREEN CO.	3/27/1991	0.00K	0.00K
GREEN CO.	4/15/1992	0.00K	0.00K
GREEN CO.	7/19/1992	0.00K	0.00K
Brodhead	5/25/1994	0.00K	0.00K
New Glarus	7/7/1994	0.00K	0.00K
Browntown	7/12/1994	0.00K	0.00K
Monroe	7/12/1994	0.00K	0.00K
Albany	7/19/1994	0.00K	0.00K
JUDA	4/19/1996	0.00K	0.00K
CLARNO	6/20/1997	0.00K	0.00K
BRODHEAD	6/25/1998	0.00K	0.50K
NEW GLARUS	8/14/1998	0.00K	0.00K
ALBANY	8/14/1998	0.00K	0.00K
MONTICELLO	5/17/2000	0.00K	0.00K
BRODHEAD	8/6/2000	0.00K	0.00K
MONTICELLO	9/11/2000	10.00K	0.00K
NEW GLARUS	4/8/2001	0.00K	0.00K
JUDA	10/23/2001	0.00K	0.00K
BROWNTOWN	10/23/2001	0.00K	0.00K
BRODHEAD	10/23/2001	0.00K	0.00K
MONROE	10/23/2001	0.00K	0.00K
NEW GLARUS	7/31/2003	0.00K	0.00K
BRODHEAD	8/1/2003	0.00K	0.00K
MONTICELLO	8/3/2003	0.00K	0.00K
NEW GLARUS	5/23/2004	0.00K	0.00K
DAYTON	7/16/2004	5.00K	0.00K
DAYTON	4/19/2005	0.00K	0.00K
BRODHEAD	5/19/2005	0.50K	0.00K
NEW GLARUS	4/13/2006	0.00K	0.00K
DAYTON	4/13/2006	0.00K	0.00K

ALBANY	7/20/2006	0.00K	0.00K
MONTICELLO	8/24/2006	0.00K	0.00K
ATTICA	3/21/2007	0.00K	0.00K
DAYTON	6/12/2008	0.00K	0.00K
BROWNTOWN	6/28/2008	0.00K	0.00K
BRODHEAD	6/28/2008	0.00K	0.00K
BRODHEAD	6/8/2009	0.00K	0.00K
BRODHEAD	9/21/2010	0.00K	0.00K
MONROE	5/11/2011	0.00K	0.00K
JUDA	4/29/2013	0.00K	0.00K
MONROE AIRPORT	8/30/2013	0.00K	0.00K
BRODHEAD	9/3/2015	0.00K	0.00K
NEW GLARUS	6/9/2016	0.00K	0.00K
NEW GLARUS	9/21/2016	0.00K	0.00K
ALBANY	4/10/2017	0.00K	0.00K
NEW GLARUS ARPT	6/1/2019	0.00K	0.00K
BROWNTOWN	4/7/2020	0.00K	0.00K
BROWNTOWN	4/7/2020	0.00K	0.00K
BADGER ARPT	4/7/2020	0.00K	0.00K
MONROE	4/7/2020	0.00K	0.00K
MONROE	4/7/2020	0.00K	0.00K
CLARNO	4/7/2020	0.00K	0.00K
CLARNO	4/7/2020	0.00K	0.00K

It should be noted that this table represents only the hail incidents reported to the National Weather Service. After a careful review of the data by the workgroup, it was believed that there has been more accurate record-keeping and recording since the 1990s but that the table also shows an increasing frequency in the occurrence of hailstorms, with Green County having a hailstorm usually at least once per year. With that understanding, it was decided that the probability of hail is moderate to high.

Vulnerability

NWS loss tables show that property damage has reached up to $15,500 in Green County. Hail, typically occurring in conjunction with thunderstorms and lightning, can damage many types of infrastructure. Public and private vehicles (e.g., campers, boats, cars, trucks) are liable to have their windshields cracked, bodies dented and paint damaged as a result of hail. This damage can occur, depending on the size of the hail, whether the vehicle is moving through the storm or is stationary. Hail on the roadway can also cause vehicles to slide off the road. Vehicle damage and iced roadways are of particular concern when you consider the need for emergency vehicles such as police cars, fire trucks and ambulances to quickly move to assist victims in a disaster.

Hail can also damage critical infrastructure such as street signs, electric lines/poles/transformers, telephone lines and radio communication equipment. These pieces of infrastructure are needed by both first response agencies and the general community to ensure safe transport; warm, safe homes and

good internal and external communications abilities. Residential and business properties are liable to receive damage to roofing, signs, siding, billboards, trees and windows. Manufactured housing is particularly vulnerable to damage due to its lower construction standards.

Hail can be particularly damaging to agricultural concerns, including farm buildings, standing crops and livestock. The NWS report shows $500 of total crop loss during that period in Green County. This is most certainly under-reported as hail is a localized phenomenon and it is difficult to estimate losses and/or get loss reports from farmers.

Hazard Mitigation Strategy

The goal of mitigating for hail is to reduce the amount of financial loss due to these incidents. Insurance is the most widely used adjustment for crop and property damages due to hail. Hail crop insurance is available from two sources: commercial stock and mutual companies and the Federal Crop Insurance Corporation (FCIC). Farmers rarely purchase insurance coverage up to the full value of the losses that would result from a severe hailstorm.

Green County Emergency Management provides hail information to the public as part of the spring severe weather awareness week. The office also provides information about hail in displays in the courthouse and on the website. Federal emergency assistance is available in the form of low-interest loans when a Presidential Disaster is declared or when the FmHA declares that a county is eligible for aid. Damage from hailstorms alone is generally not extensive enough to invoke a disaster declaration.

The hazard mitigation strategies listed above primarily involve providing information on safety measures and insurance to the public for agricultural concerns and residential and commercial structures. These measures provide basic safety information but, since there is little one can do to prevent hail damage, these measures will do little to reduce damages to existing or future buildings and infrastructure, although the recommended insurance may make recovery easier.

Storms: Lightning

Lightning is a phenomenon associated with thunderstorms; the action of rising and descending air separates and builds-up positive and negative charge areas. When the built-up energy is discharged between the two areas, lightning is the result.[100] Lightning may travel from cloud to cloud, cloud to ground, or if there are high structures involved, from ground to cloud.

[100] University Corporation for Atmospheric Research [UCAR]

Formation of Lightning

Physical Characteristics

The temperatures in a lightning stroke rise to 50,000°F (Fahrenheit). The sudden and violent discharge which occurs in the form of a lightning strike is over in one-millionth of a second. Lightning damage occurs when humans and/or animals are electrocuted, fires are caused by a lightning stroke, materials are vaporized along the lightning path, or sudden power surges cause damage to electrical or electronic equipment. Lightning, an underestimated hazard, kills more people in an average year than do hurricanes or tornadoes.

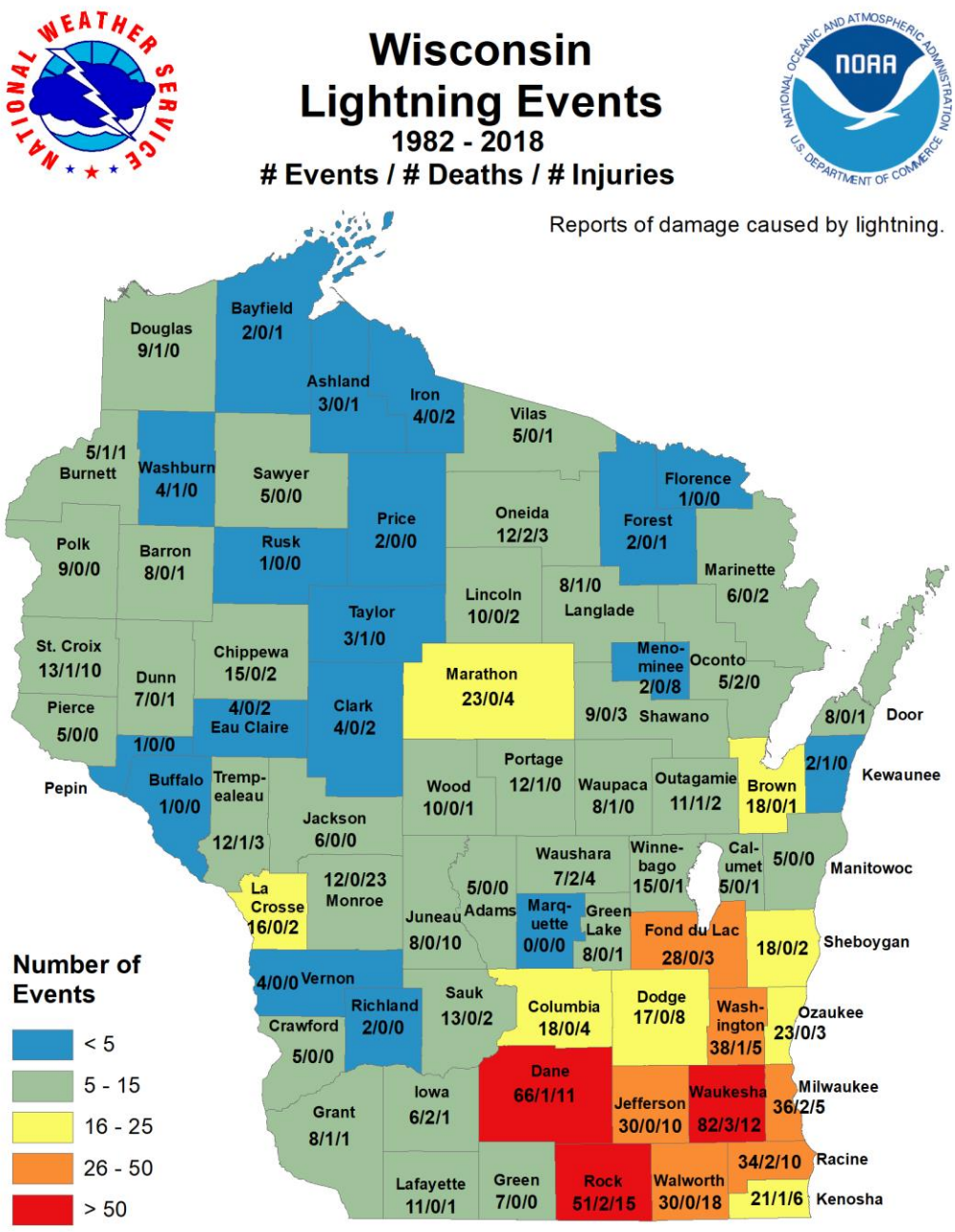
Frequency of Occurrence

Nationwide, forty-five percent of the people killed by lightning have been outdoors, about sixteen percent were under trees, six percent were on heavy road equipment and thirty-three percent were at various unknown locations. Less than ten percent of the deaths involved individuals inside buildings; these deaths were primarily due to lightning-caused fires.

Wisconsin has a high frequency of property losses due to lightning. Insurance records show that annually one out of every fifty farms has been struck by lightning or had a fire which may have been caused by lightning. Generally, rural fires are more destructive than urban fires because of limited lightning protection devices, isolation, longer response times and inadequate water supplies. Green County has a moderate probability of lightning occurrence at any one location within it. This was determined by recognizing that lightning usually happens in conjunction with thunderstorms, and that Wisconsin and Green County generally have several severe thunderstorms per summer. The likelihood of damage due to lightning is considered low for most areas of the county although the workgroup felt that the severity of effects was high if lightning struck communications infrastructure.

A table showing the lightning events recorded by the National Weather Service (NWS) between 1 January 1982 and 31 December 2018 can be found below. This table from the NWS is obviously not reporting all of the incidents of lightning strikes but those with notable/reportable losses from the past and can reasonably be inferred to show that there is exposure to potential future losses.[101]

101 https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Lightning&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN



Year	Date	Location	Human Losses	Damage Losses
2004	05/20	Brodhead	Death/Injury: 0	Property: $1K Crop: $0
2007	04/03	Monroe	Death/Injury: 0	Property: $25K Crop: $0
2010	07/22	Monroe	Death/Injury: 0	Property: $15K Crop: $0
2011	06/08	Albany	Death/Injury: 0	Property: $3K Crop: $0

Vulnerability

Lightning, which often occurs in conjunction with thunderstorms and hail, can damage many types of infrastructure, including electric lines/poles/transformers, telephone lines, and radio communication equipment. These pieces of infrastructure are needed by both first response agencies and the general community to ensure safe transport; warm, safe homes; and good internal and external communications abilities.

Residential and business properties are liable to receive damage either as a result of a lightning strike causing a fire or other type of direct damage or by overloading electronic equipment (e.g., computers, televisions) that have not been properly connected to a surge protector. The latter concern is especially important to business and government, which in modern America rely on computers and other electronic equipment to manage the large amounts of data manipulated in our information-based economy. Lightning can damage agricultural assets including farm buildings, standing crops, and livestock. It is also one of the major sources of ignition for forest and wildfires.

Hazard Mitigation Strategy

The goal of lightning mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. The two primary ways to effectively reduce lightning losses are modifying human behavior and protecting structures (e.g., using fire-resistant materials in building construction). The use of fire-resistant materials will make existing buildings and future construction less likely to catch fire or will minimize fire damage and spread due to lightning strike. Surge protectors limit data losses.

Green County Emergency Management has awareness and educational materials that inform the public of safety procedures to follow during a lightning storm. Severe summer weather safety information is also emphasized during Tornado Awareness Week, which is held each spring.

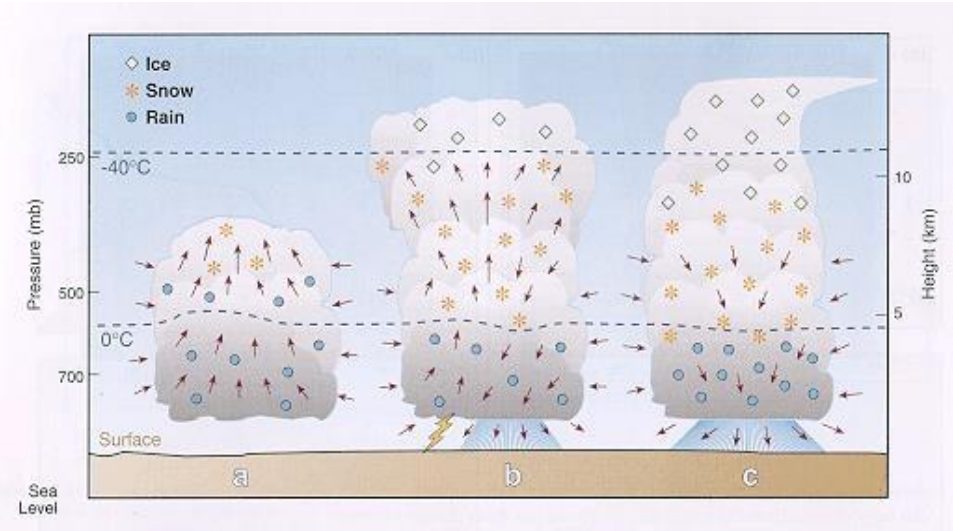
Storms: Thunderstorms

There are three distinct stages of development for thunderstorms (birth, growth, maturity), each of which can be seen in the following schematic. In the first stage of development, an updraft drives warm air up beyond condensation levels where clouds form.

The second stage of development occurs as levels of water vapor in the expanding cloud rise past saturation and the air cools sufficiently to form solid and liquid particles of water. At this point, rain or snow begins to fall within the cloud.

A thunderstorm's mature stage is marked by a transition of wind direction within the storm cells. The prevailing updraft which initiated the cloud's growth is joined by a downdraft generated by precipitation. Lightning may occur soon after precipitation begins. Hail and tornadoes may also develop during this stage.[102]

[102] National Weather Service – Flagstaff, Arizona



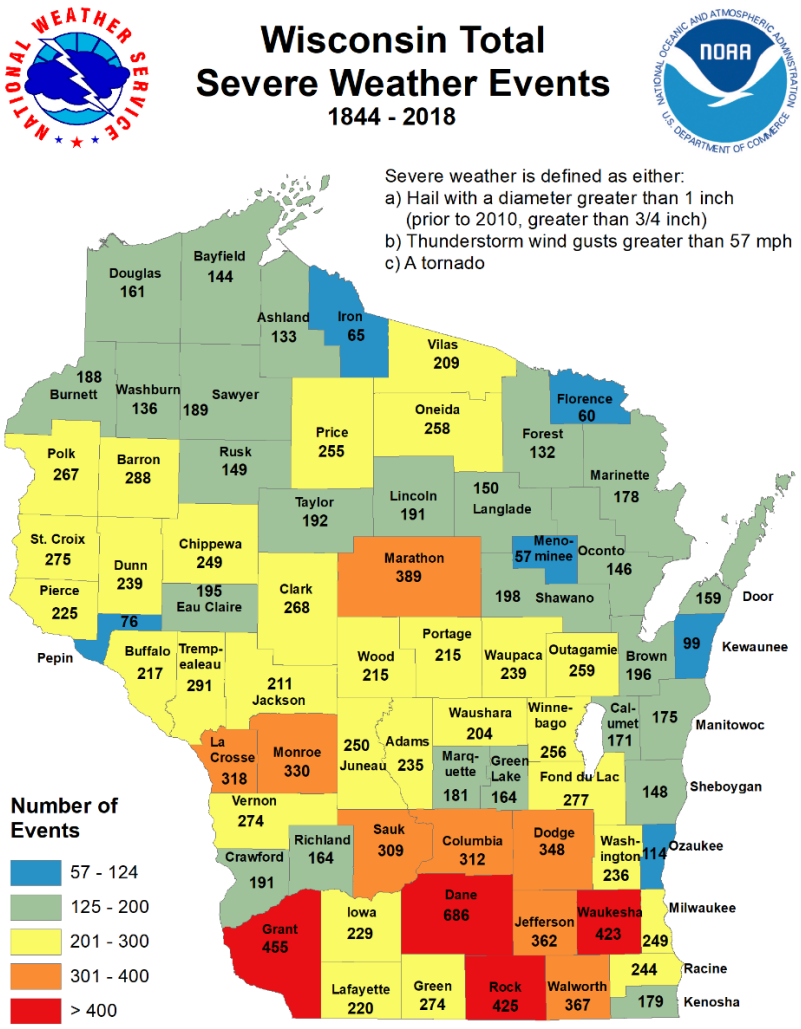
Physical Characteristics

A thunderstorm often is born, grows, reaches maturity, and dies in a thirty-minute period. The individual thunderstorm cell often travels between thirty and fifty miles per hour. Strong frontal systems may create one squall line after another, each composed of many individual thunderstorm cells. These fronts can often be tracked across the state from west to east with a constant cycle of birth, growth, maturity, and death of individual thunderstorm cells.

Frequency of Occurrence

Thunderstorm frequency is measured as the number of days per year with one or more incidents. There are approximately 100,000 thunderstorms in the United States every year and approximately 10% of those are considered severe (i.e., has at least ¾" hail, winds of at least 58 mph or a tornado). Most Wisconsin counties, including Green County, average between 30 and 40 thunderstorm days per year although a portion of southwestern and south-central Wisconsin average 40 to 50 thunderstorm days per year. In Green County there are typically several severe thunderstorms per year. Thunderstorms can occur throughout the year with the highest frequency during the months of May through September. The majority of storms occur between the hours of noon and midnight.

The probability of thunderstorms occurring in Green County is high as these storms usually occur one or more times each year during the summer in Wisconsin and Green County. Damage from thunderstorms usually is a result of the hail, lightning, winds and/or flash flooding that can occur as part of the storm. The likelihood of damage from these causes is in discussed in the appropriate chapters. Although one can see from the historical data listed below, property and crop damage occur frequently in thunderstorms and can range from $400 to $3.84 million per storm.



The following chart lists the thunderstorm wind events that have been recorded in Green County by the National Weather Service between 1 January 1994 and 31 December 2021.[103]

Location	Date	Property Damage/Loss	Crop Damages/Loss
GREEN CO.	4/11/1965	0.00K	0.00K
GREEN CO.	6/16/1973	0.00K	0.00K
GREEN CO.	7/3/1973	0.00K	0.00K
GREEN CO.	6/20/1974	0.00K	0.00K

[103]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28C%29+Thunderstorm+Wind&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

GREEN CO.	7/15/1977	0.00K	0.00K
GREEN CO.	7/9/1980	0.00K	0.00K
GREEN CO.	7/9/1980	0.00K	0.00K
GREEN CO.	8/2/1980	0.00K	0.00K
GREEN CO.	8/2/1980	0.00K	0.00K
GREEN CO.	8/4/1980	0.00K	0.00K
GREEN CO.	7/19/1983	0.00K	0.00K
GREEN CO.	7/19/1983	0.00K	0.00K
GREEN CO.	7/19/1983	0.00K	0.00K
GREEN CO.	8/10/1983	0.00K	0.00K
GREEN CO.	8/10/1983	0.00K	0.00K
GREEN CO.	8/10/1983	0.00K	0.00K
GREEN CO.	8/10/1983	0.00K	0.00K
GREEN CO.	8/10/1983	0.00K	0.00K
GREEN CO.	9/5/1983	0.00K	0.00K
GREEN CO.	9/5/1983	0.00K	0.00K
GREEN CO.	9/5/1983	0.00K	0.00K
GREEN CO.	9/24/1984	0.00K	0.00K
GREEN CO.	5/26/1985	0.00K	0.00K
GREEN CO.	5/26/1985	0.00K	0.00K
GREEN CO.	5/27/1987	0.00K	0.00K
GREEN CO.	5/27/1987	0.00K	0.00K
GREEN CO.	9/10/1987	0.00K	0.00K
GREEN CO.	5/8/1988	0.00K	0.00K
GREEN CO.	5/8/1988	0.00K	0.00K
GREEN CO.	5/8/1988	0.00K	0.00K
GREEN CO.	4/24/1989	0.00K	0.00K
GREEN CO.	6/26/1989	0.00K	0.00K
GREEN CO.	6/26/1989	0.00K	0.00K
GREEN CO.	8/4/1989	0.00K	0.00K
GREEN CO.	8/5/1989	0.00K	0.00K
GREEN CO.	3/13/1990	0.00K	0.00K
GREEN CO.	3/13/1990	0.00K	0.00K
GREEN CO.	4/27/1990	0.00K	0.00K
GREEN CO.	6/28/1990	0.00K	0.00K
GREEN CO.	3/22/1991	0.00K	0.00K
GREEN CO.	4/28/1991	0.00K	0.00K
GREEN CO.	5/30/1991	0.00K	0.00K
GREEN CO.	7/13/1992	0.00K	0.00K
Montello	4/15/1994	0.00K	0.00K
Jordan Center	7/4/1994	0.00K	50.00K
Clarno Twsp	4/18/1995	0.00K	0.00K

Brooklyn Twsp	4/18/1995	0.00K	0.00K
Juda	5/9/1995	0.00K	0.00K
Monticello	5/16/1995	0.00K	0.00K
Brooklyn	6/7/1995	0.00K	0.00K
New Glarus	7/15/1995	0.00K	0.00K
Monroe	7/27/1995	0.00K	0.00K
Albany	7/27/1995	3.00K	0.00K
MONROE	6/29/1996	10.00K	0.00K
ALBANY	6/29/1996	13.00K	0.00K
CLARNO	8/5/1996	20.00K	0.00K
BROWNTOWN	4/5/1997	35.00K	0.00K
BRODHEAD	4/5/1997	5.00K	0.00K
ATTICA	6/15/1997	2.00K	0.00K
JORDAN	6/24/1997	3.00K	0.00K
MONTICELLO	6/24/1997	3.00K	0.00K
MONTICELLO	9/16/1997	2.00K	0.00K
BROWNTOWN	9/16/1997	0.20K	0.00K
MONROE	9/19/1997	1.00K	0.00K
NEW GLARUS	5/15/1998	3.00K	0.00K
BRODHEAD	5/15/1998	1.00K	0.00K
NEW GLARUS	5/28/1998	1.00K	0.00K
MONROE	5/28/1998	1.60K	0.00K
COUNTYWIDE	5/31/1998	20.00K	0.00K
BROWNTOWN	6/18/1998	5.00K	0.00K
JUDA	6/25/1998	5.00K	0.00K
MONROE	6/28/1998	20.00K	0.00K
MONROE	7/3/1998	2.00K	0.00K
NEW GLARUS	7/19/1998	2.00K	0.00K
MONROE	7/20/1998	50.00K	0.00K
ALBANY	2/11/1999	1.00K	0.00K
MONROE	6/6/1999	2.00K	0.00K
JUDA	6/6/1999	1.00K	0.00K
NEW GLARUS	7/20/1999	3.00K	0.00K
ALBANY	7/20/1999	225.00K	0.00K
DAYTON	7/23/1999	25.00K	0.00K
MONROE	5/8/2000	75.00K	0.00K
DAYTON	5/8/2000	10.00K	0.00K
COUNTYWIDE	6/1/2000	20.00K	0.00K
JORDAN	7/10/2000	2.00K	0.00K
MONROE	7/10/2000	10.00K	0.00K
DAYTON	8/5/2000	1.500M	300.00K
ALBANY	8/6/2000	2.00K	0.00K

MONROE	8/17/2000	4.00K	0.00K
BROWNTOWN	9/11/2000	2.00K	0.00K
MONROE	9/11/2000	2.00K	0.00K
DAYTON	5/3/2001	100.00K	0.00K
ALBANY	6/11/2001	5.00K	0.00K
MONROE	6/12/2001	0.00K	0.00K
COUNTYWIDE	6/14/2001	0.00K	0.00K
MONROE	6/14/2001	0.00K	0.00K
NEW GLARUS	6/14/2001	0.00K	0.00K
MONROE	9/7/2001	0.00K	0.00K
BROWNTOWN	4/18/2002	200.00K	0.00K
BRODHEAD	4/18/2002	15.00K	0.00K
MONROE	8/21/2002	25.00K	0.00K
JUDA	8/21/2002	0.00K	0.00K
MONROE	7/5/2003	0.00K	0.00K
MONROE	4/17/2004	75.00K	0.00K
NEW GLARUS	5/23/2004	25.00K	0.00K
DAYTON	7/16/2004	5.00K	0.00K
BROWNTOWN	8/26/2004	20.00K	0.00K
MONROE	3/30/2005	5.00K	0.00K
BRODHEAD	3/30/2005	2.00K	0.00K
DAYTON	3/30/2005	0.50K	0.00K
ALBANY	3/30/2005	2.00K	0.00K
BROWNTOWN	6/4/2005	5.00K	0.00K
NEW GLARUS	6/5/2005	0.00K	0.00K
MONROE	6/25/2005	0.00K	0.00K
NEW GLARUS	7/21/2005	20.00K	0.00K
MONROE	7/25/2005	5.00K	0.00K
BROWNTOWN	8/18/2005	20.00K	0.00K
BRODHEAD	5/29/2006	0.00K	0.00K
BRODHEAD	6/21/2006	10.00K	0.00K
MONROE	6/21/2006	0.00K	0.00K
MONTICELLO	6/21/2006	0.00K	0.00K
BROWNTOWN	6/21/2006	0.00K	0.00K
ALBANY	6/21/2006	0.00K	0.00K
BROWNTOWN	7/17/2006	15.00K	0.00K
NEW GLARUS	7/20/2006	10.00K	0.00K
DAYTON	7/20/2006	10.00K	0.00K
ALBANY	7/20/2006	20.00K	0.00K
NEW GLARUS	7/20/2006	0.00K	0.00K
ALBANY	10/2/2006	0.00K	0.00K
MONROE	10/4/2006	0.00K	0.00K

JORDAN	7/3/2007	0.00K	0.00K
NEW GLARUS	8/12/2007	0.00K	0.00K
DAYTON	8/14/2007	20.00K	0.00K
JORDAN	8/22/2007	10.00K	0.00K
MONTICELLO	8/22/2007	10.00K	0.00K
NEW GLARUS	8/22/2007	10.00K	0.00K
DAYTON	6/7/2008	0.00K	0.00K
BROWNTOWN	6/8/2008	0.00K	0.00K
MONROE	6/8/2008	0.00K	0.00K
JUDA	6/12/2008	50.00K	0.00K
MONROE	6/28/2008	0.00K	0.00K
ALBANY	7/10/2008	5.00K	0.00K
JUDA	7/12/2008	75.00K	0.00K
MONROE	7/31/2008	20.00K	0.00K
BROWNTOWN	6/19/2009	0.00K	0.00K
MONROE	6/19/2009	0.00K	0.00K
MONROE	8/9/2009	15.00K	0.00K
POSTVILLE	8/9/2009	0.00K	0.00K
ALBANY	5/25/2010	0.00K	0.00K
MARTINTOWN	6/18/2010	0.00K	0.00K
JUDA	6/18/2010	0.00K	0.00K
BRODHEAD	6/18/2010	0.00K	0.00K
JORDAN	6/21/2010	0.00K	0.00K
BRODHEAD	8/20/2010	0.00K	0.00K
MONROE	6/8/2011	200.00K	0.00K
NEW GLARUS	6/8/2011	0.00K	0.00K
NEW GLARUS	6/8/2011	0.00K	0.00K
DAYTON	6/8/2011	0.00K	0.00K
BRODHEAD	6/8/2011	0.00K	0.00K
MONROE	6/8/2011	0.00K	0.00K
JORDAN	7/11/2011	20.00K	2.200M
NEW GLARUS	5/28/2012	30.00K	0.00K
DAYTON	5/28/2012	30.00K	0.00K
DAYTON	5/28/2012	10.00K	0.00K
BRODHEAD	5/28/2012	100.00K	0.00K
MONROE	7/18/2012	0.00K	0.00K
NEW GLARUS	7/24/2012	0.00K	0.00K
MONROE	7/24/2012	0.00K	0.00K
MONROE	7/24/2012	0.00K	0.00K
MONROE AIRPORT	7/25/2012	0.00K	0.00K
NEW GLARUS	9/4/2012	5.00K	0.00K
JORDAN	5/19/2013	12.00K	0.00K

BROWNTOWN	5/30/2013	30.00K	0.00K
JUDA	5/30/2013	10.00K	0.00K
NEW GLARUS	7/22/2013	40.00K	0.00K
BRODHEAD	7/22/2013	7.00K	0.00K
STEARNS	9/19/2013	15.00K	0.00K
BADGER ARPT	9/19/2013	2.00K	0.00K
MONROE AIRPORT	9/19/2013	0.00K	0.00K
MONROE	6/17/2014	25.00K	0.00K
JUDA	6/17/2014	300.00K	0.00K
JORDAN	6/30/2014	100.00K	0.00K
NEW GLARUS ARPT	5/26/2015	4.50K	0.00K
POSTVILLE	6/22/2015	20.00K	0.00K
POSTVILLE	6/22/2015	20.00K	0.00K
BELLEVILLE	7/13/2015	10.00K	0.00K
MONROE AIRPORT	3/6/2017	0.00K	0.00K
MARTINTOWN	5/15/2017	0.50K	0.00K
MONROE	5/15/2017	2.00K	0.00K
JORDAN	5/17/2017	4.00K	0.00K
MARTINTOWN	6/15/2017	2.00K	0.00K
JUDA	6/28/2017	11.00K	0.00K
BRODHEAD	6/28/2017	6.00K	0.00K
JORDAN	7/19/2017	7.00K	0.00K
BROWNTOWN	7/13/2018	5.00K	0.00K
BROWNTOWN	7/13/2018	8.00K	0.00K
NEW GLARUS ARPT	6/27/2019	6.00K	0.00K
POSTVILLE	10/1/2019	10.00K	2.00K
CLARNO	5/26/2020	10.00K	0.00K
BADGER ARPT	8/10/2020	8.00K	0.00K
MONROE	8/10/2020	0.50K	0.00K
MONROE AIRPORT	8/10/2020	0.00K	0.00K
BELLEVILLE	6/18/2021	10.00K	0.00K

Vulnerability

Thunderstorms, which often produce hail and lightning and may occasionally spawn tornadoes, high wind storms or flash flooding, can damage many types of infrastructure. Green County's thunderstorm vulnerabilities due to associated hail, lightning, winds, and flood waters are discussed in the other hazard chapters of this plan.

Hazard Mitigation Strategy

The goal of thunderstorm mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. The Green County Emergency Management Department has developed severe weather safety information that it disseminates to the public. During Tornado Awareness Week each spring there is extensive media coverage of safety tips with the goal of

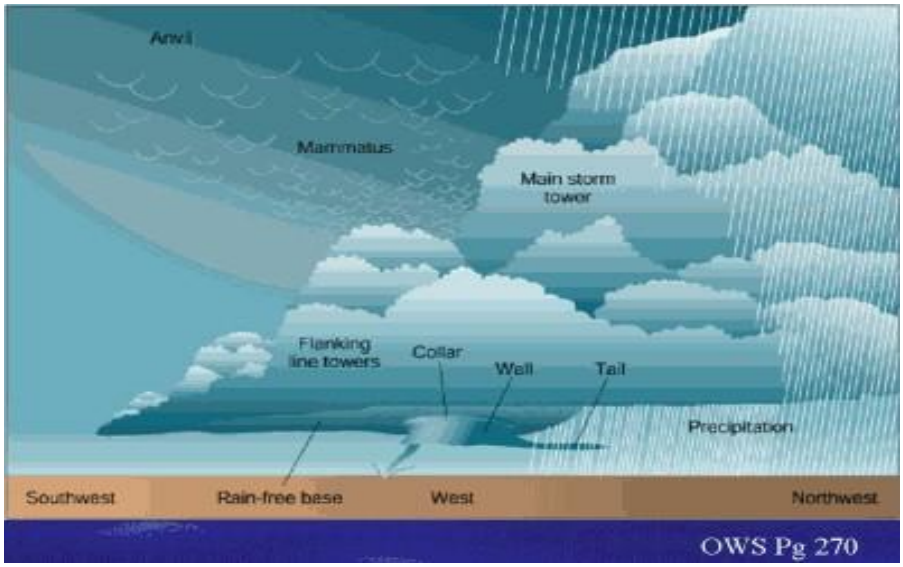
increasing public understanding of weather advisories and the Green County EM Director does a presentation to all Green Co. 3rd graders about storm safety. Green County is working to improve coordination between the NWS, county and municipal agencies and community event boards/leaders. Mitigation measures to support this include:

- Agencies/municipalities post their events to the National Weather Service so that they may provide storm warnings to event boards.
- Provide advice to event boards seeking assistance regarding weather safety.
- Provide county mobile command post to municipalities as needed and when possible, for use during events.

The damage to buildings and infrastructure in a thunderstorm is from components of the storm such as hail, flooding, lightning or wind. A discussion of strategies to reduce effects on existing and future buildings and infrastructure is discussed in the chapters that discuss each of these components in detail.

Storms: Tornadoes and High Winds

A tornado is a violently rotating funnel-shaped column of air. The lower end of the column may or may not touch the ground. Average winds in the tornado are between 173 and 250 miles per hour but winds can exceed 300 miles per hour. It should also be noted that straight-line winds may reach the same speeds and achieve the same destructive force as a tornado.



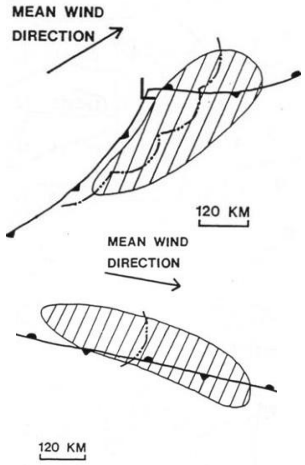
A derecho is a widespread, long-lived, violent, convectively-induced, straight-line windstorm that is associated with a fast-moving band of severe thunderstorms usually taking the form of a bow echo. Derechos blow in the direction of movement of their associated storms; this is similar to a gust front except that the wind is sustained and generally increases in strength behind the "gust" front. A warm weather phenomenon, derechos occur mostly in summer, especially July, in the northern hemisphere. They can occur at any time of the year and occur as frequently at night as in the daylight hours.
The traditional criteria that distinguish a derecho from a severe thunderstorm are sustained winds of 58 mph during the storm as opposed to gusts, high, and/or rapidly increasing forward speed and geographic extent (typically 250 nautical miles in length). In addition, they have a distinctive

appearance on radar (bow echo); several unique features, such as the rear inflow notch and bookend vortex and usually manifest two or more downbursts. There are three types of derechos:

- Serial: Multiple bow echoes embedded in a massive squall line typically around 250 miles long. This type of derecho is usually associated with a very deep low. Also because of embedded supercells, tornadoes can easily spin out of these types of derechos.

- Progressive: A small line of thunderstorms take the bow- shape and can travel for hundreds of miles.

- Hybrid: Has characteristics of a serial and progressive derechos. Hybrid derechos are associated with a deep low like serial derechos but are relatively small in size like progressive derechos



Physical Characteristics

Tornadoes are visible because low atmospheric pressure in the vortex leads to cooling of the air by expansion and to condensation and formation of water droplets. They are also visible as a result of the airborne debris and dust in its high winds. Wind and pressure differential are believed to account for ninety percent of tornado damage in most cases. Because tornadoes are associated with storm systems, they usually are accompanied by hail, torrential rain, and intense lightning.

Tornadoes typically produce damage in an area that does not exceed one-fourth mile in width or sixteen miles in length. Tornadoes with track lengths greater than 150 miles have been reported although such tornadoes are rare. Tornado damage severity is measured by the Fujita Tornado Scale, which assigns an "F" ("Fujita") value from 0 – 5 to denote the wind speed.

The Fujita Tornado Scale[104]

Category	Wind Speed	Description of Damage
F0	40-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light- object missiles generated.
F3	158-206 mph	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off; cars thrown and large missiles generated.
F5	261-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

On 1 February 2007, the National Weather Service began rating tornadoes using the EF-scale. It is considerably more complicated than the F-scale and it will allow surveyors to create more precise assessments of tornado severity. Below is a comparison between the Fujita Scale and the EF Scale:

[104] FEMA, 1997

Fujita Scale			Derived EF Scale		Operational EF Scale	
F Number	Fastest ¼ mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Downburst Characteristics

Downburst damage is often highly localized but resembles damage caused by a tornado. In some cases, even an experienced investigator cannot identify the nature of a storm without mapping the direction of the damaging winds over a large area. There are significant interactions between tornadoes and nearby downbursts.

A classic downburst example occurred on 4 July 1977 when a severe thunderstorm moved across Northern Wisconsin. Extensive areas of tree and property damage, somewhat like a tornado, were reported. After an aerial survey was completed to map both direction and F-scale intensity of the damaging winds it was determined that no evidence of a tornado was found anywhere within the path of the damage swath, which was 166 miles long and 17 miles wide. The survey revealed that there were scattered local centers from which straight-line winds diverged outward. These local wind systems were identified as downbursts with at least 25 specific locations recognized by the low-flying aircraft.

Frequency of Occurrence

Wisconsin lies along the northern edge of the nation's tornado belt, which extends north-eastward from Oklahoma into Iowa and across to Michigan and Ohio. Winter, spring and fall tornadoes are more likely to occur in southern Wisconsin than in northern counties.

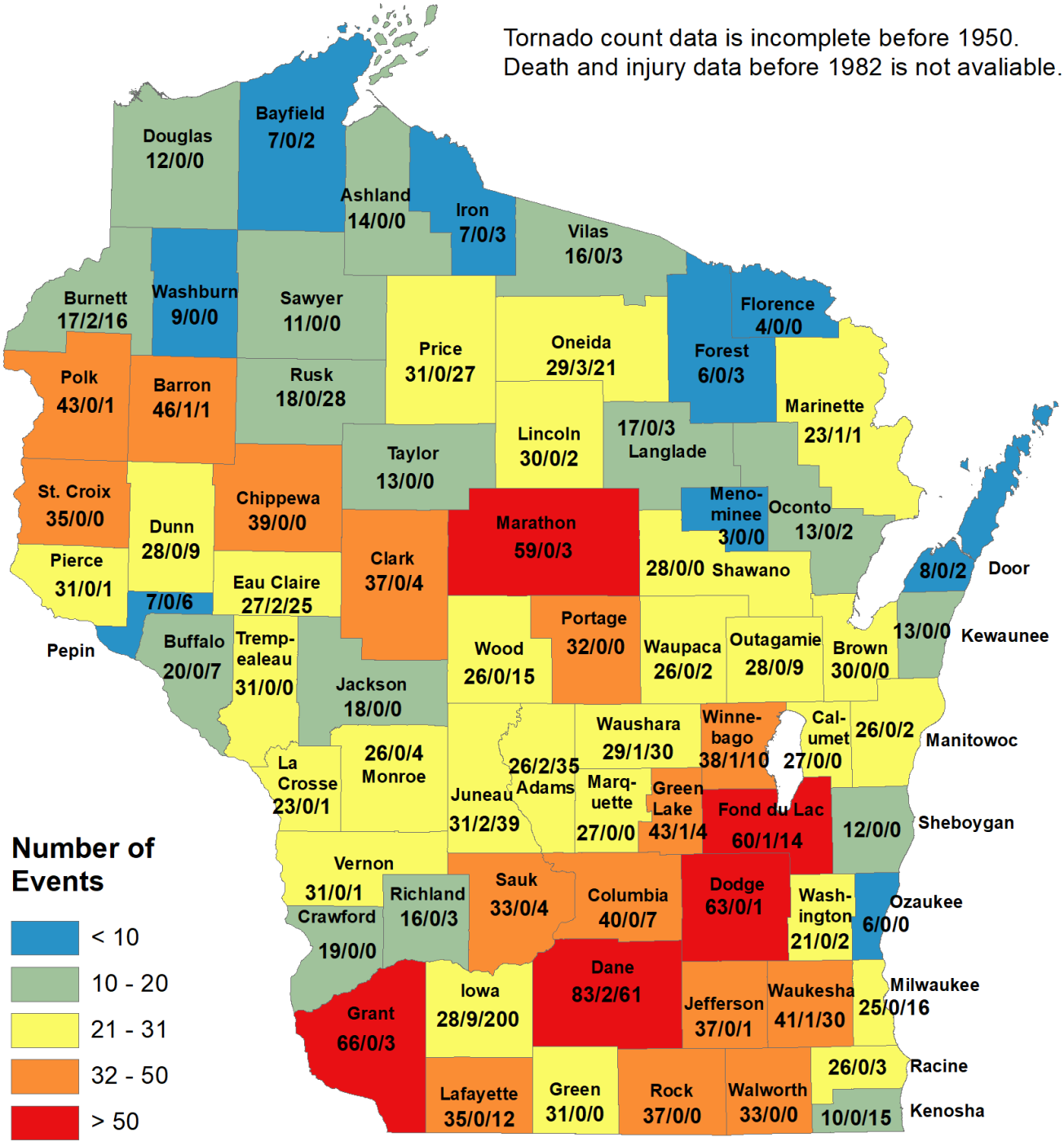
Wisconsin's tornado season runs from the beginning of April through September with the most severe tornadoes typically occurring in April, May and June. Tornadoes have, however, occurred in Wisconsin during every month except February. Many tornadoes strike in late afternoon or early evening but they do occur at other times. Deaths, injuries and personal property damage have occurred and will continue to occur in Wisconsin.

According to the National Weather Service, Green County had 31 tornadoes between 1 January 1996 and 31 December 2019. Between these dates, the county had no deaths and injuries and associated with these storms. The probability of Green County being struck by a tornado in the future is high and the likelihood of damage from future tornadoes is also high. All parts of Green County are equally susceptible to tornadoes.

Wisconsin Tornado Events

1844 - 2018

Events / # Deaths / # Injuries



Location	Date	Level	Property Damage/Loss	Crop Damages/Loss
GREEN CO.	1/24/1967	F3	250.00K	0.00K
GREEN CO.	7/29/1967	F1	25.00K	0.00K
GREEN CO.	6/12/1969	F2	250.00K	0.00K
GREEN CO.	9/28/1972	F1	250.00K	0.00K
GREEN CO.	7/20/1978		0.00K	0.00K
GREEN CO.	6/9/1979	F2	250.00K	0.00K
GREEN CO.	6/5/1980	F1	2.50K	0.00K
GREEN CO.	6/15/1981	F0	2.50K	0.00K
GREEN CO.	6/9/1984	F0	0.00K	0.00K
GREEN CO.	6/22/1984	F0	2.50K	0.00K
GREEN CO.	3/27/1991	F2	0.00K	0.00K
GREEN CO.	6/17/1992	F1	25.00K	0.00K
OAKLEY	5/30/2003	F1	0.00K	0.00K
JUDA	7/6/2004	F0	0.00K	0.00K
JORDAN	6/12/2008	EF1	0.00K	0.00K
POSTVILLE	6/12/2008	EF1	0.00K	0.00K
ATTICA	6/12/2008	EF0	0.00K	0.00K
POSTVILLE	6/16/2014	EF1	50.00K	0.00K
POSTVILLE	6/16/2014	EF1	200.00K	0.00K
CLARNO	6/17/2014	EF1	300.00K	0.00K
ALBANY	6/25/2014	EF0	0.00K	0.00K
STEARNS	5/26/2015	EF0	0.00K	0.00K
STEARNS	6/28/2017	EF1	145.00K	0.00K
STEARNS	6/28/2017	EF1	325.00K	0.00K

Vulnerability

Injury to people is a primary concern in tornado and high wind events. Two of the highest risk places are mobile home parks and campgrounds; Green County has several of each type of property. Both have high concentrations of people in a small area, generally have structures that provide less protection than standard construction homes generally do not provide storm shelters. Other places of concern during these types of events include critical emergency facilities such as hospitals and public works/highway garages, police stations and fire departments, which contain equipment and services needed by the public after a tornado.

Mobile Home Parks [105]
Park Name
Cardinal Estates
Monroe Estates Mobile HomePark
Monticello Mobile Home Park
Southside Mobile Home Court
Swiss Haven Mobile HomePark
The Willows
Firefly Estates Mobile Home Park [106]
Campgrounds
Park Name
Crazy Horse Campground
Green County Fairgrounds
New Glarus Woods State Park
Sweet Minihaha Campground

Schools, in addition to holding children, are the major type of structure used as community disaster shelters and their loss might therefore affect the community on several levels (e.g., the death or injury of children, the loss of a community housing shelter). School gymnasiums are often the specific location of the community shelter but they are especially vulnerable in tornadoes because the large- span roof structure is often not adequately supported.

Community infrastructure such as power lines, telephone lines, radio towers and street signs are often vulnerable to damage from tornadoes and high winds and can be expensive to replace. The loss of radio towers that hold public safety communications repeaters can adversely impact the ability of first responders to mount an effective response; damage to towers that hold public media equipment may adversely impact the ability to distribute adequate public information.

Residential property is likely to have siding and roofing materials removed, windows broken from flying debris and garages blown down due to light construction techniques. Perhaps one of the largest types of loss on private property is due to tree damage, which is generally not covered by federal disaster assistance.

Business properties are at risk for having damage to infrastructure including signs, windows, siding and billboards. Agricultural buildings, such as barns and silos, are also generally not constructed in a manner that makes them wind resistant, which can lead to the loss of livestock and harvest. Standing crops are also at risk from high winds and tornadoes.

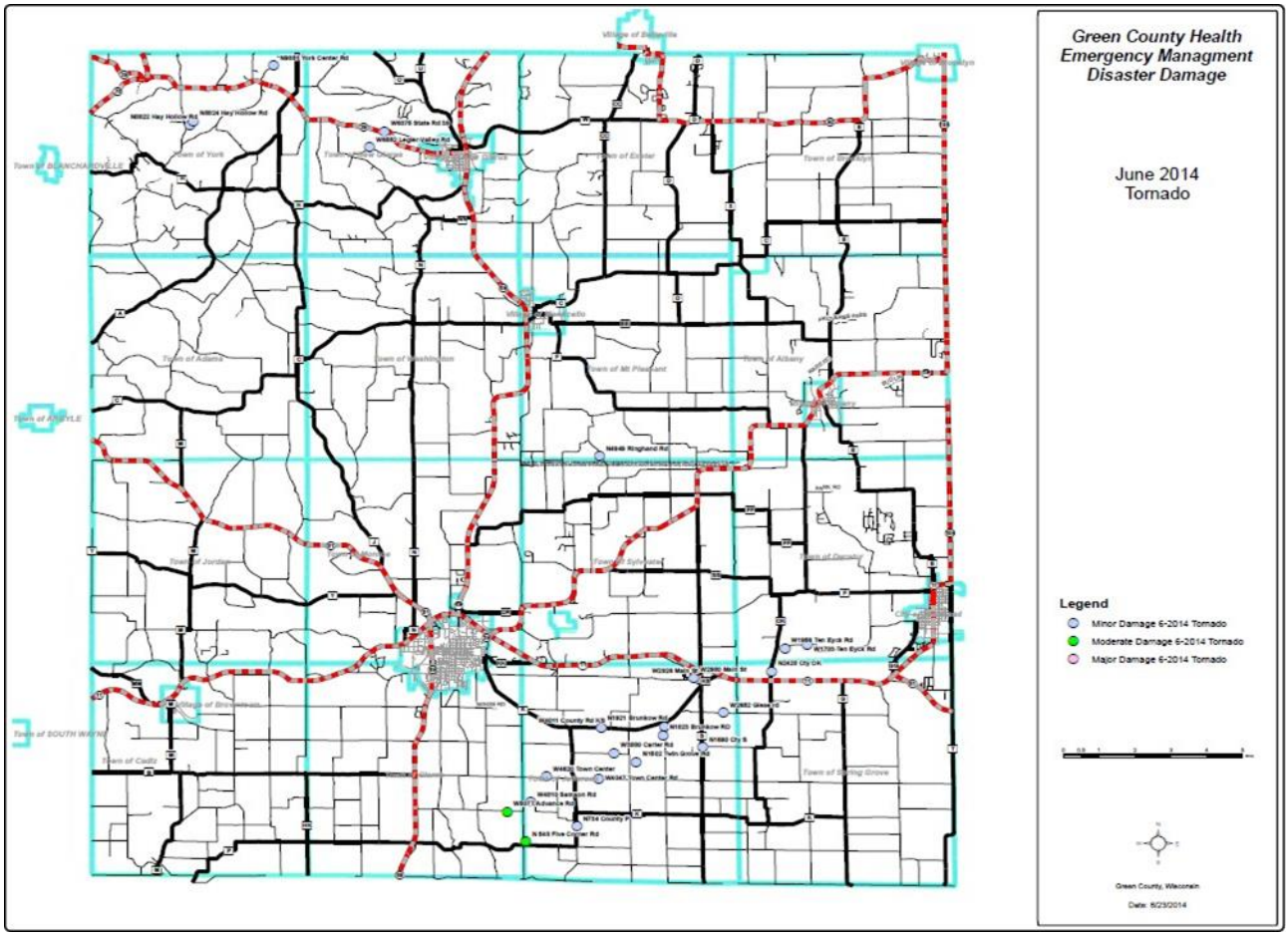
[105] http://www.mobilehome.net/mobile-home-park-directory/wisconsin/county/green-county
[106] https://landrecords.greencountywi.org/GreenCountyTaxParcelMap/?find=2316106740000

Case Study – 16-17 June 2014

On June 16, a severe thunderstorm system moving through the area spawned two tornadoes that struck the Town of York. These tornadoes took down many trees, several barns and sheds, severely damaged a home, and miles of fencing were destroyed. Hours later, in the early morning, another tornado developed northeast of Clarno and ended just north of Juda. The Towns of Clarno, Decatur, and Jefferson were affected. Straight-line winds took down more barns and sheds and, in the City of Brodhead, nearly every street had trees down. Along with power outages, it took the City of Brodhead over a week to clean up the debris with mutual aid from the county highway dept. and several municipal DPWs. Due to the large amount of debris and damages caused by these storms, Green County declared a state of emergency and began providing Uniform Disaster Situation Reports (UDSRs) to Wisconsin Emergency Management (WEM) showing that the county had suffered considerable damages and had used a large amount of resources. Several days later Gov. Walker announced that a State of Emergency existed for Green, Dane and Grant Counties. This state declaration opened up state resources (e.g., DNR, National Guard) and the DNR quickly provided urban tree grant information for the City of Brodhead and information on tree logger information.

Within a period of two weeks, Green County had four EF1 tornadoes and storms with straight-line winds that caused considerable damages including:

- Total costs for debris and protective measures $123,200
- Over $800,000 estimated damages for rural buildings with many people inadequately insured.
- 8 barns destroyed
- 9 barns severely damaged – some probably totaled
- 9 outbuildings destroyed
- 12 outbuildings severely damaged
- 4 silos destroyed
- 2 silos severely damaged
- 20 Sheds destroyed (large pole sheds)
- 14 Sheds severely damaged
- Several garages destroyed or damaged
- 4 cars and 1 truck damaged
- 2 homes severely damaged
- 24 homes with minor damage
- 76 homes were affected
- 2 people were sheltered after the storm (no deaths or injuries)
- At least 3 pieces of farm machinery were destroyed
- 7 pieces of farm machinery were severely damaged
- Several large grain bins destroyed
- One farmer was without power and had to dump three loads of milk
- Miles of fencing were down and needed repairs or replacing.



Hazard Mitigation Strategy

Green County has a history of damage to buildings and infrastructure due to tornadoes and high winds. Some strategies below will deal with public information and alert and notification while others will enable the community to make current and future buildings and infrastructure more disaster-resistant by enacting more "bricks and mortar" solutions.

An effective warning system is the single most important resource for alerting the public to a tornado/derecho hazard, which is critical to the main goal of saving lives and reducing property losses. Forecasting of these incidents is difficult, however, because of the suddenness of their onset, their relatively short duration, the extreme variability of the strike area, limited knowledge of storm dynamics and the limitations of the weather observation system. As discussed in the All Hazards Chapter, Green County Emergency Management promotes the use of NOAA weather radios for public alert and notification. The office also continues to evaluate various technologies to determine if they can be effectively integrated into the county's alert and notification systems.

During the past several years, there has been a statewide Tornado Awareness Week in spring. Media information packets are distributed to reemphasize and alert the public to tornado warning procedures and to help citizens understand weather alert terms. Green County actively promotes tornado safety public information as well as other summer severe weather public awareness and educational efforts, including applicable links on the Green Co. Emergency Management website.

The county recognizes mobile home parks and campgrounds are particularly vulnerable locations for people and property during a tornado. To help mitigate the danger, the county plans projects that include:

- Identifying and constructing tornado shelters in mobile home parks and campgrounds with the highest population concentrations as grant funding is available. The U.S. Department of Commerce Community Development Block Grants may be an avenue to achieve the necessary funding.
- Installing an employee shelter at Badger State Ethanol plant in the City of Monroe. This high-priority project cost approximately $5,000 and was completed by the company with their funding in 2016.

Hazard Mitigation Success Story

In June 2011, Green County Emergency Management wrote a grant to provide a storm shelter (safe room) at the Willows Manufactured Home Park, with 18 manufactured homes located at N2451 Ullom Road, Monroe WI. This is a rural, manufactured home park located in the Town of Cadiz, just off State Highway 11. The nearest shelter is 3.5 miles away and there are no outdoor storm sirens in the vicinity of the park.

The safe room is 10'x30' prefabricated storm shelter that meets "FEMA Publication 361 - Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms, 3rd Edition (2015)" approved standards and holds 64 people. Per Chapter 3 of FEMA Pub 361, there needs to be ten feet for one wheelchair and five feet per ambulatory person. 300 feet provides safe shelter room for 60 ambulatory occupants or 30 wheelchair-bound occupants. For every wheelchair-bound occupant, the ambulatory occupancy decreases by 2 persons.

After many grant and weather delays, it was installed 9 May 2013. The shelter, which was funded under Section 404-Hazard Mitigation Grant Program for Presidential Disaster Declaration FEMA-1933- DR-WI (declared 08/11/2010), holds 60 people. The total cost of the project was $68,415 and the expected total benefits were $414,152. The tenants at this rural park are very low income and the county was able to secure CDBG funding to pay for the 12.5% local share

Storms: Winter

Due to its position along the northern edge of the United States, Wisconsin, including Green County, is highly susceptible to a variety of winter weather storm phenomena.

Physical Characteristics

The National Weather Service descriptions of winter storm elements are[107]:

- Heavy snowfall - Accumulation of six or more inches of snow in a 12-hour period or eight or more inches in a 24-hour period.

[107] http://readywisconsin.wi.gov/news/Top%20Weather%20Events%20in%20Wisconsin%20for%202011.pdf

- Blizzard - An occurrence of sustained wind speeds in excess of 35 miles per hour (mph) accompanied by heavy snowfall or large amounts of blowing or drifting snow.
- Ice storm - An occurrence of rain falling 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 - Effect of drizzle or rain freezing upon impact on objects with a temperature of 32 degrees Fahrenheit or below.
- Sleet - 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.
- Wind chill - An apparent temperature that incorporates the combined effect of wind and low air temperatures on exposed skin.

In Wisconsin, the winter storm season generally runs from November through March and Wisconsin residents are most familiar with heavy snowstorms, blizzards, sleet, and ice storms. The majority of Wisconsin snowfalls are between one and three inches per occurrence, although heavy snowfalls that produce at least ten inches may occur four or five times per season. Northwestern Wisconsin encounters more blizzards than the southeastern portions of the state.

Damage from ice storms can occur when more than half an inch of rain freezes on trees and utility wires, especially if the rain is accompanied by high winds. Another danger comes from accumulation of frozen rain pellets on the ground during a sleet storm, which can make driving hazardous.

Frequency of Occurrence

Annual snowfall in Wisconsin varies between thirty inches in southern counties to one hundred inches in the north. Green County, averages approximately 41.79 inches annual snowfall with February the snowiest month at 17.95 inches.[108] Storm tracks originating in the southern Rockies or Plains states that move northeastward produce the heaviest precipitation, usually six to twelve inches. Low pressure systems originating in the northwest (Alberta) tend to produce only light snowfalls of two to four inches. Snowfalls associated with Alberta lows occur more frequently with colder weather.

Although massive blizzards are rare in Wisconsin, blizzard-like conditions often exist during heavy snowstorms when gusty winds cause blowing and drifting of snow. For example, blizzard conditions existed in Wisconsin in February, 2011 when record snowfalls were recorded in many areas and very strong northeast winds were gusting from 45 to 60 mph for an extended period of time. It should be noted that there were two additional large snow storms that occurred in late February and late March of 2011.[109]

Both ice and sleet storms can occur at any time throughout the winter season from November to April. Ice storms of disastrous proportions occurred in central Wisconsin in February 1922 and in southern Wisconsin in March 1976. A Presidential Disaster Declaration occurred as a result of the 1976 storm. Utility crews from surrounding states were called in to restore power, which was off for up to ten days in some areas. Other storms of lesser magnitude caused power outages and treacherous highway conditions.

[108] http://www.homefacts.com/weather/Wisconsin/Green-County.html
[109] http://readywisconsin.wi.gov/news/Top%20Weather%20Events%20in%20Wisconsin%20for%202011.pdf

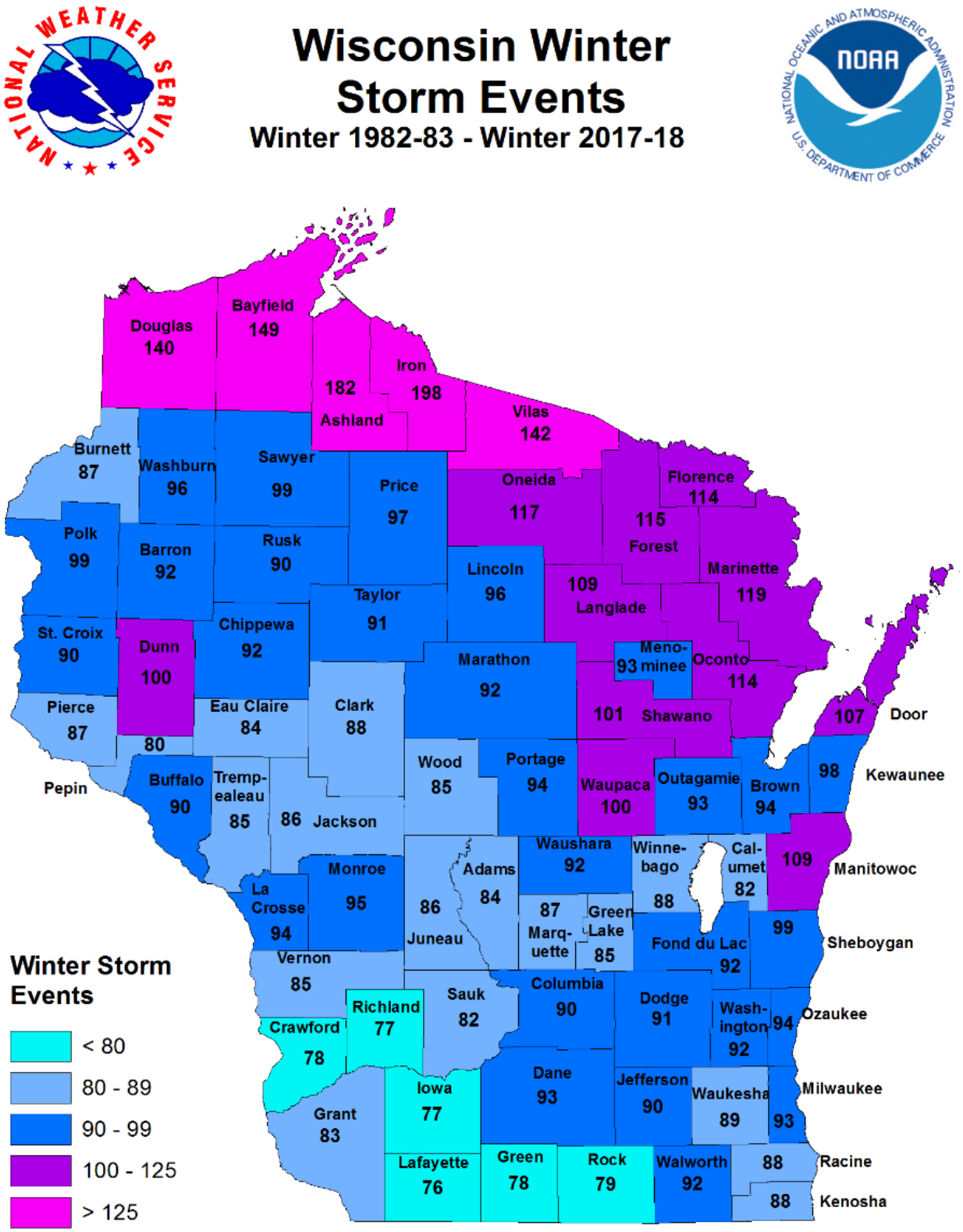
Winter storms in the county seem to be increasingly associated with ice instead of or in addition to snow, particularly early in the season. Recovery from ice events can be very expensive, with power line and other infrastructure repairs. The probability that there will be severe winter storms in Green County is medium and the likelihood that those storms will cause significant damage is low because the county and its municipalities are well-prepared for winter weather and maintain good interdepartmental communication.

The county has received disaster declarations for excessive snowfall in three of the past 15 years (i.e., 2000, 2008, 2011).

- Green County received a declaration for the December 2000 snowfall where $129,583.44 was received in Public Assistance (PA).
- During the Winter 2007-08, costs for winter maintenance were twice what was budgeted with over $1.2 million spent and the budget was $600,000. February 2008 was declared and the county and its municipalities received $247,732.69 in PA.
- Green County also received a declaration for the 2011 Groundhog Day blizzard where $258,775.17 was received in PA.
- The county applied for but did not receive assistance for the December 2009 snowstorm.

The Highway 69 corridor to Madison (northern part of county) experiences significant interruptions during winter weather events. Building for Madison commuters has essentially stopped in the county with no new subdivisions built since 2006. Towns, especially since the economic downturn, do not want to put in roads and subdivisions due to poor return on investment since some subdivisions built prior to 2006 are still not full.

The probability that there will be severe winter storms in Green County is high and the likelihood that those storms will cause significant damage is medium. The following tables detail Green County's winter storm statistics as reported by the National Weather Service, including human loss and injury and property damage estimates, from 1 January 1996 through 31 December 2021.


Wisconsin Winter Storm Events
Winter 1982-83 - Winter 2017-18
NATIONAL WEATHER SERVICE
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE
Douglas 140
Bayfield 149
Iron 198
Ashland 182
Vilas 142
Florence 114
Burnett 87
Washburn 96
Sawyer 99
Price 97
Oneida 117
Forest 115
Polk 99
Barron 92
Rusk 90
Lincoln 96
Langlade 109
Marinette 119
Taylor 91
St. Croix 90
Dunn 100
Chippewa 92
Marathon 92
Meno-minee 93
Oconto 114
Pierce 87
Eau Claire 84
Clark 88
Shawano 101
Door 107
Pepin 80
Buffalo 90
Tremp-ealeau 85
Jackson 86
Wood 85
Portage 94
Waupaca 100
Outagamie 93
Brown 94
Kewaunee 98
Monroe 95
Adams 84
Waushara 92
Winne-bago 88
Cal-umet 82
Manitowoc 109
La Crosse 94
Juneau 86
Marq-uette 87
Green Lake 85
Fond du Lac 92
Sheboygan 99
Vernon 85
Columbia 90
Dodge 91
Wash-ington 92
Ozaukee 94
Richland 77
Sauk 82
Crawford 78
Dane 93
Jefferson 90
Waukesha 89
Milwaukee 93
Grant 83
Iowa 77
Lafayette 76
Green 78
Rock 79
Walworth 92
Racine 88
Kenosha 88
Winter Storm Events
< 80
80 - 89
90 - 99
100 - 125
> 125

BLIZZARDS[110]

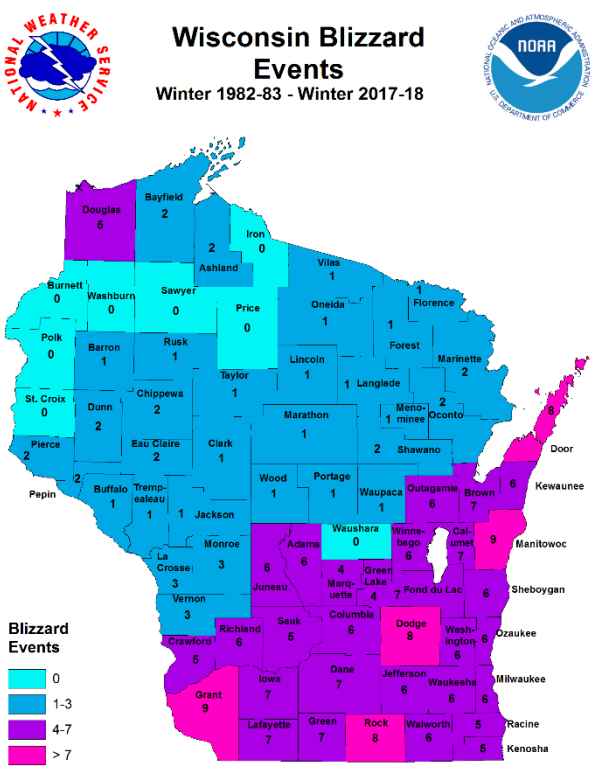
Year	Date	Location	Human Losses	Damage Losses
1996	01/29	Green Co.	Death/Injury: 0	Property/Crop: $0
2007	02/24	Green Co.	Death/Injury: 0	Property/Crop: $0
2010	12/11	Green Co.	Death/Injury: 0	Property/Crop: $0
2011	02/01	Green Co.	Death/Injury: 0	Property: $10K Crop: $0
2012	12/20	Green Co.	Death/Injury: 0	Property/Crop: $0
2014	1/26	Green Co.	Death/Injury: 0	Property/Crop: $0

ICE STORMS[111]

Year	Date	Location	Human Losses	Damage Losses
1996	12/23	Green Co.	Death/Injury: 0	Property/Crop: $0
1997	02/04	Green Co.	Death/Injury: 0	Property/Crop: $0
2007	12/11	Green Co.	Death/Injury: 0	Property: $10 K Crop: $0
2009	12/23	Green Co.	Death/Injury: 0	Property/Crop: $0

HEAVY SNOW[112]

Year	Date	Location	Human Losses	Damage Losses
1996	01/26	Green Co.	Death/Injury: 0	Property/Crop: $0
1996	12/25	Green Co.	Death/Injury: 0	Property/Crop: $0
1997	12/24	Green Co.	Death/Injury: 0	Property/Crop: $0
2000	12/11	Green Co.	Death/Injury: 0	Property/Crop: $0
	12/18	Green Co.	Death/Injury: 0	Property/Crop: $0
2002	03/02	Green Co.	Death/Injury: 0	Property/Crop: $0
2004	02/05	Green Co.	Death/Injury: 0	Property/Crop: $0
2008	01/21	Green Co.	Death/Injury: 0	Property/Crop: $0



110

https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Blizzard&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

[111]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Ice+Storm&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

[112]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Heavy+Snow&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

Winter Storm[113]

Location	Date	Property Damage/Loss	Crop Damages/Loss
GREEN (ZONE)	3/8/1998	0.00K	0.00K
GREEN (ZONE)	1/2/1999	0.00K	0.00K
GREEN (ZONE)	3/8/1999	0.00K	0.00K
GREEN (ZONE)	1/3/2000	0.00K	0.00K
GREEN (ZONE)	2/17/2000	0.00K	0.00K
GREEN (ZONE)	4/7/2000	0.00K	0.00K
GREEN (ZONE)	1/6/2005	0.00K	0.00K
GREEN (ZONE)	1/22/2005	0.00K	0.00K
GREEN (ZONE)	2/16/2006	0.00K	0.00K
GREEN (ZONE)	2/25/2007	0.00K	0.00K
GREEN (ZONE)	4/11/2007	10.00K	0.00K
GREEN (ZONE)	12/1/2007	0.00K	0.00K
GREEN (ZONE)	1/29/2008	0.00K	0.00K
GREEN (ZONE)	2/5/2008	0.00K	0.00K
GREEN (ZONE)	2/17/2008	0.00K	0.00K
GREEN (ZONE)	3/21/2008	0.00K	0.00K
GREEN (ZONE)	11/30/2008	0.00K	0.00K
GREEN (ZONE)	12/1/2008	0.00K	0.00K
GREEN (ZONE)	12/8/2008	0.00K	0.00K
GREEN (ZONE)	12/18/2008	0.00K	0.00K
GREEN (ZONE)	12/20/2008	0.00K	0.00K
GREEN (ZONE)	2/21/2009	0.00K	0.00K
GREEN (ZONE)	12/8/2009	0.00K	0.00K
GREEN (ZONE)	1/7/2010	0.00K	0.00K
GREEN (ZONE)	3/2/2012	0.00K	0.00K
GREEN (ZONE)	1/30/2013	0.00K	0.00K
GREEN (ZONE)	3/5/2013	0.00K	0.00K
GREEN (ZONE)	12/22/2013	0.00K	0.00K
GREEN (ZONE)	2/1/2015	0.00K	0.00K
GREEN (ZONE)	3/22/2015	0.00K	0.00K
GREEN (ZONE)	11/20/2015	0.00K	0.00K
GREEN (ZONE)	12/28/2015	0.00K	0.00K
GREEN (ZONE)	12/10/2016	0.00K	0.00K
GREEN (ZONE)	1/18/2019	0.00K	0.00K

[113]https://www.ncdc.noaa.gov/stormevents/listevents.jsp?eventType=%28Z%29+Winter+Storm&beginDate_mm=05&beginDate_dd=01&beginDate_yyyy=1950&endDate_mm=05&endDate_dd=31&endDate_yyyy=2022&county=GREEN%3A45&hailfilter=0.00&tornfilter=0&windfilter=000&sort=DT&submitbutton=Search&statefips=55%2CWISCONSIN

GREEN (ZONE)	1/22/2019	0.00K	0.00K
GREEN (ZONE)	2/11/2019	0.00K	0.00K
GREEN (ZONE)	12/11/2020	0.00K	0.00K
GREEN (ZONE)	12/29/2020	0.00K	0.00K
GREEN (ZONE)	1/25/2021	0.00K	0.00K
GREEN (ZONE)	1/30/2021	0.00K	0.00K

Vulnerability

Winter storms present a serious threat to the health and safety of affected citizens and can result in significant damage to property. Heavy snow or accumulated ice can cause the structural collapse of homes, commercial buildings and agricultural structures; down power lines or isolate people from assistance or services by impeding transportation by the general public, emergency responders and public transportation resources.

The loss of electrical service and/or the blocking of transportation routes can adversely affect the ability of commercial enterprises to conduct business. This economic injury may be felt by both the business owner and employees unable to work during this period as well as the utilities and/or municipalities that own/repair the infrastructure.

Hazard Mitigation Strategy

The goal of winter storm mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. Communities prepare for severe winter weather by ensuring that plowing and sanding equipment is operational and available to handle potential emergencies. In a snow emergency, it is critical to open roadways as quickly and efficiently as possible for emergency purposes.

Winter safety information is prepared and distributed to the media and the public by the Green County Emergency Management during Winter Awareness Week in November and from the website. During a storm, the public is advised to monitor local radio, television and NOAA weather alert radios for up-to-date forecasts and is provided winter safety tips (e.g., driving).

The hazard mitigation strategies listed above primarily involve providing information on general safety measures to the public. These measures provide basic safety information but, since the response to winter storms is primarily a government and/or corporate function comprised of tasks such as clearing roads and repairing downed utility lines, there are few measures that can be employed to reduce damages to existing or future buildings and infrastructure.

Utility Failure

A utility emergency is a disruption to the building services, usually defined as electrical power, water, natural gas and/or sewage, which restricts the ability of people to safely occupy the facility. Electrical power or natural gas outages are often caused by a fuel shortage caused by an oil embargo, power failure or natural disaster. Disruptions to the water and sewage systems are often the direct result of a natural disaster (e.g., flooding) or are indirect losses due to another failure (e.g., a power outage disrupts the pumping of water and/or sewage).

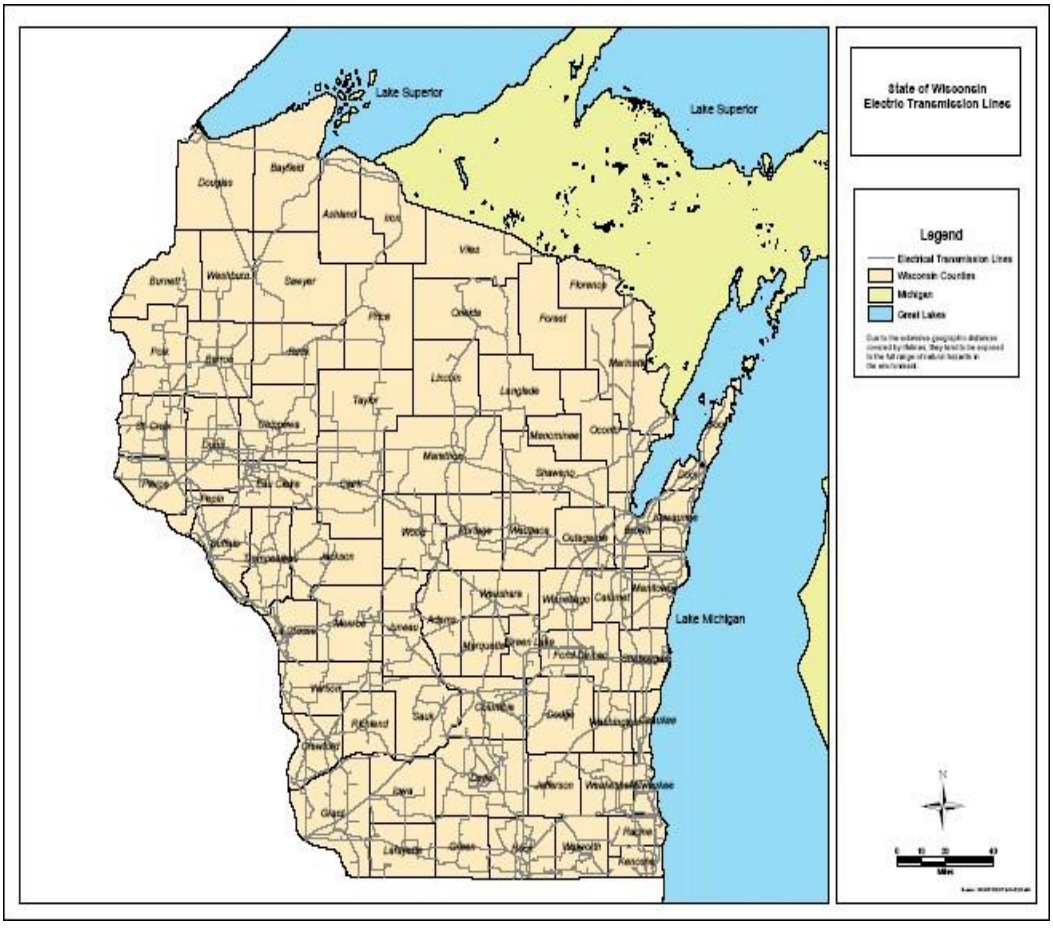
Physical Characteristics

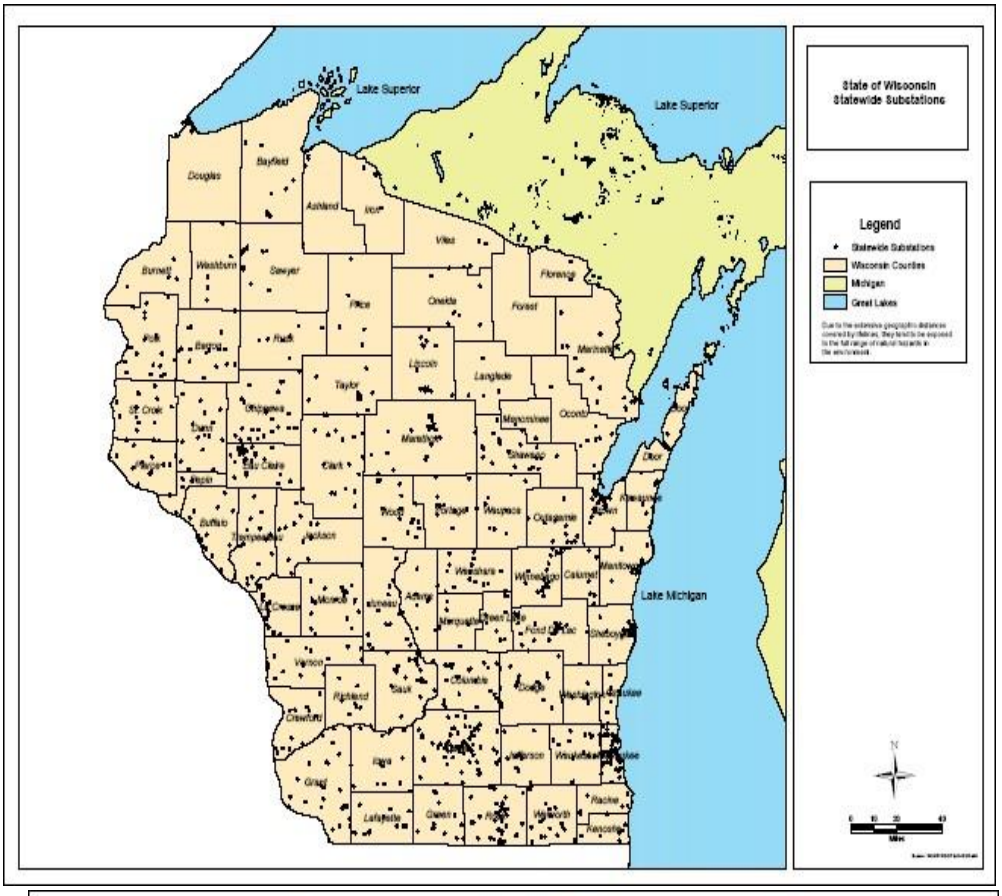
Modern society is very dependent on electrical power for normal living and is therefore quite disrupted by loss of power. Most power outages last about fifteen minutes to one hour. If longer, the utilities will inform the local news media of the anticipated duration of the outage.

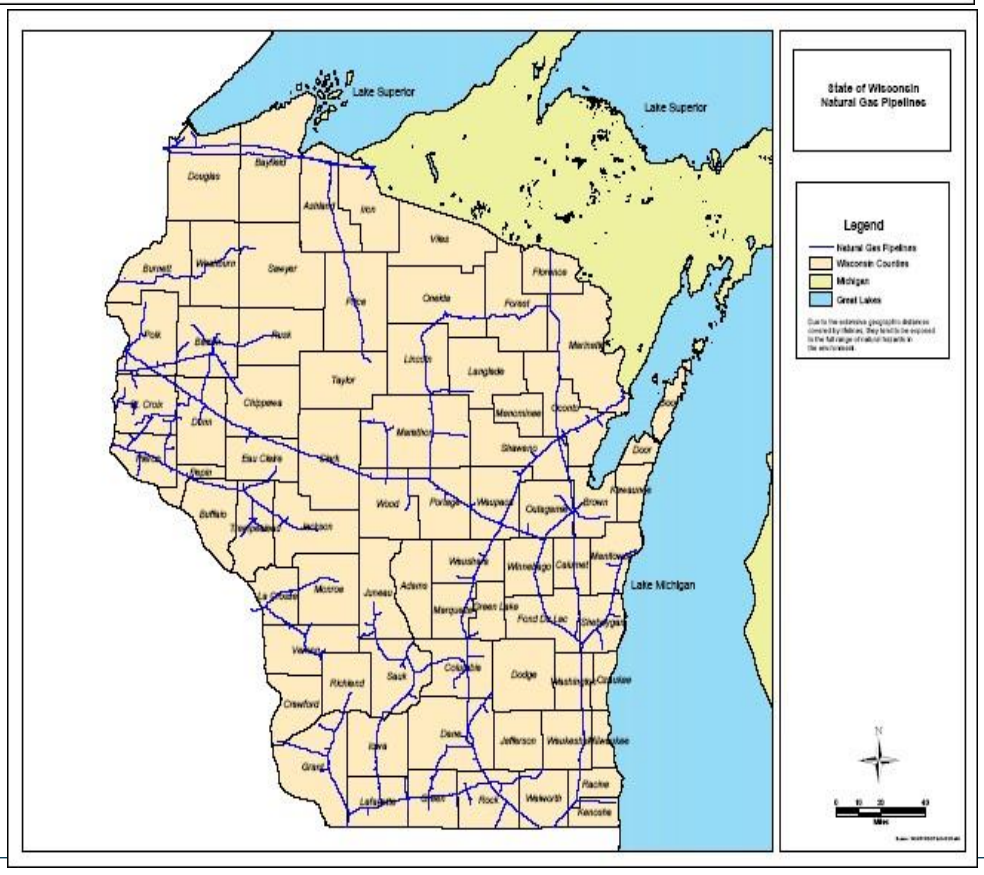
Fuel shortages can be caused by localized imbalances in supply. Labor strikes, severe cold weather or snowstorms also can cause a local shortage. One electric utility (Wisconsin Power and Light), one electric cooperative (Scenic Rivers Energy Cooperative), and one municipal provider (Brodhead Water & Light Commission) serve Green County. In Green County, natural gas services are provided by Wisconsin Power and Light and Wisconsin Gas. See the map in Appendix A for a view of the service areas.

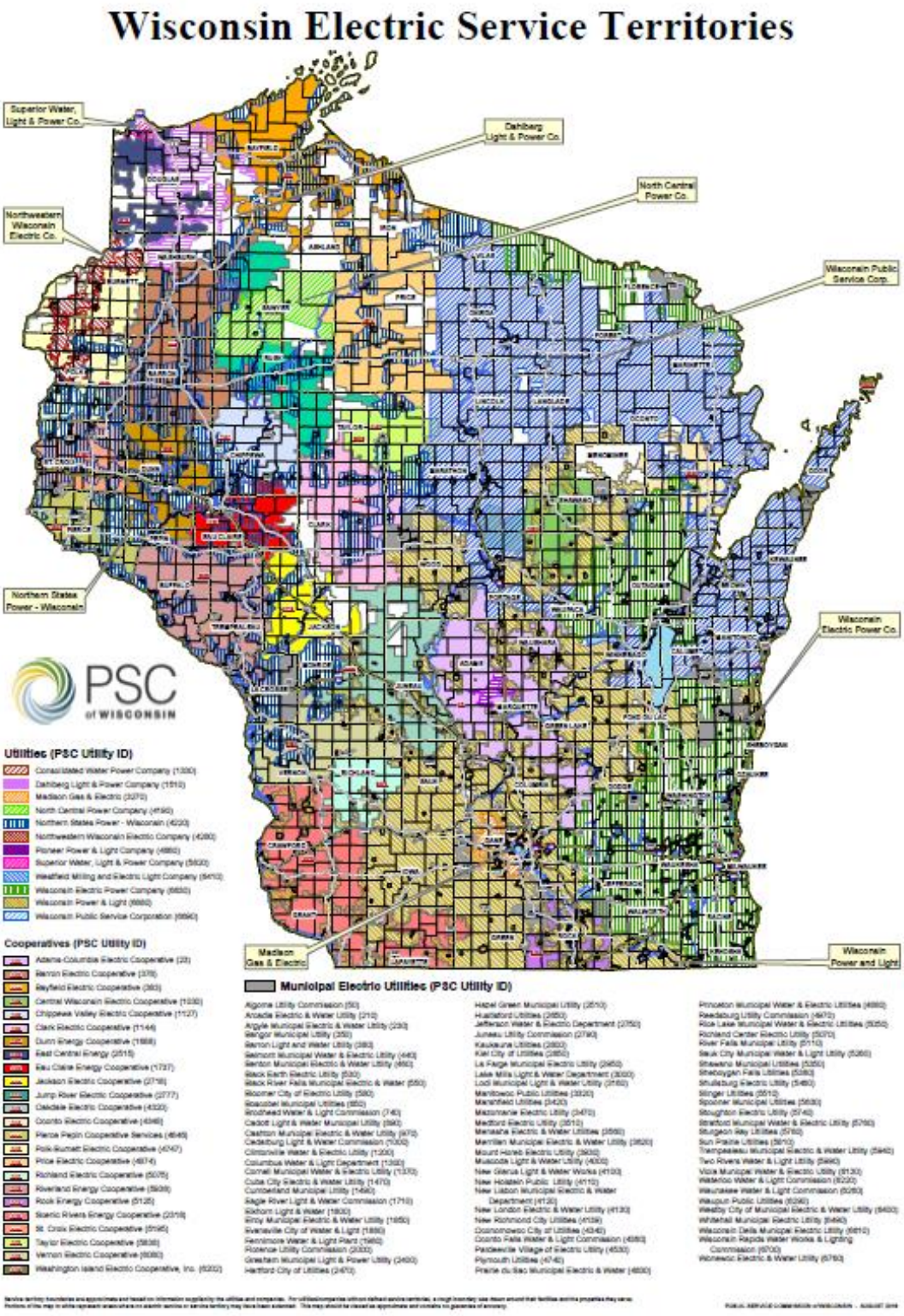
Thunderstorms with lightning are a possible cause of power failure. Fuel shortages can be caused by localized imbalances in supply. Labor strikes, severe cold weather or snowstorms also can cause a local shortage.

The water and sewage systems are most often a function of a municipal system and are usually found in more urbanized areas. Rural water is often provided by individual wells found on each property and sewage is managed by a septic system, also found on each individual property. Both municipal and individual systems are vulnerable to flooding, which can overwhelm the sewage systems and contaminate both municipal and private wells. Both types of systems are also vulnerable to electrical power loss because the electrical system powers the pumps and lift stations that move and treat the water and sewage.



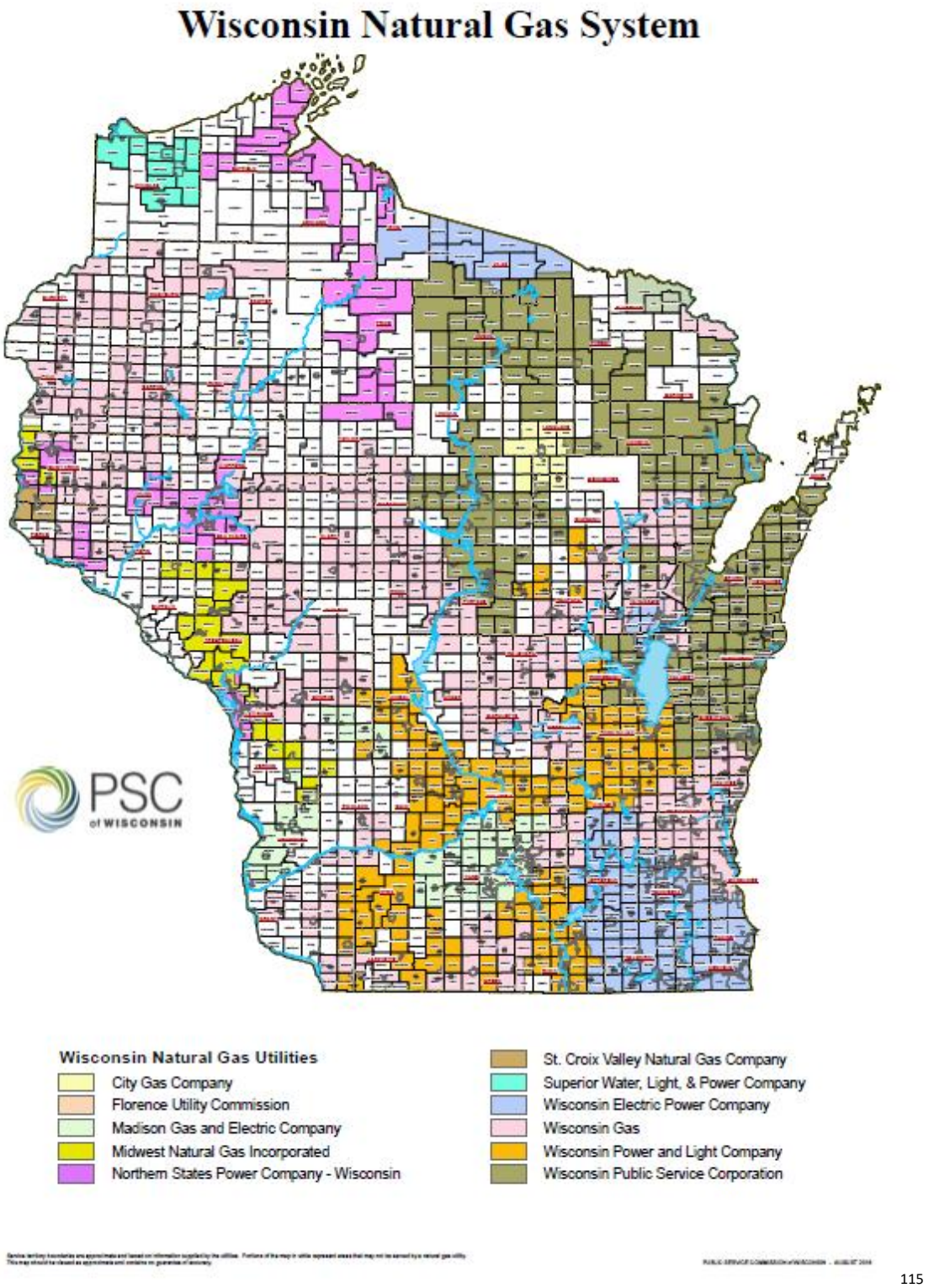

State of Wisconsin
Statewide Substations
Legend
Statewide Substations
Wisconsin Counties
Michigan
Great Lakes
Lake Superior
Lake Michigan


State of Wisconsin
Natural Gas Pipelines
Legend
Natural Gas Pipelines
Wisconsin Counties
Michigan
Great Lakes
Lake Superior
Lake Michigan



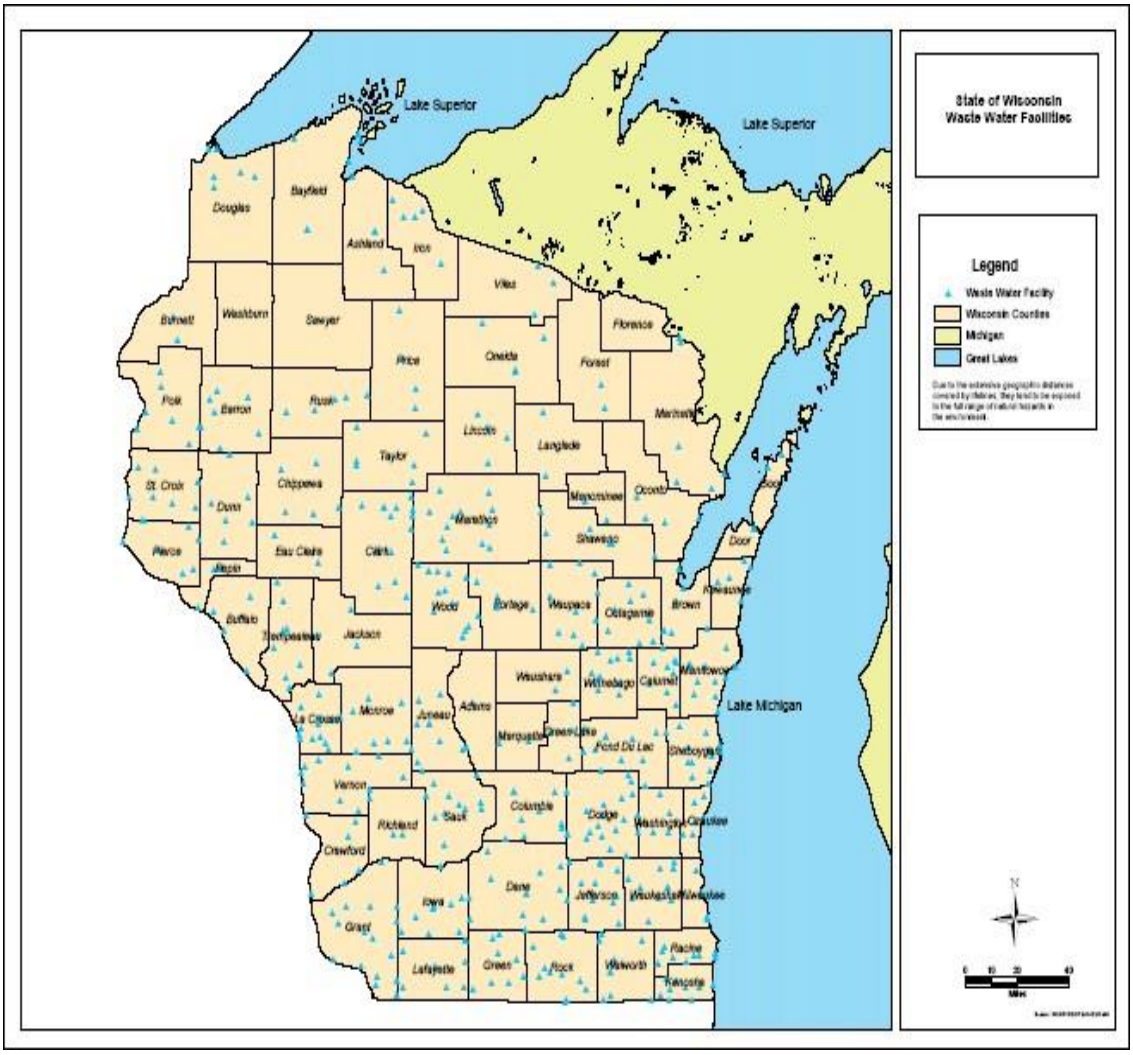
114

[114] https://psc.wi.gov/Pages/ForConsumers/Maps.aspx



115

[115] https://psc.wi.gov/PublishingImages/ForConsumers/Maps/NaturalGasMapMed.pdf



Wastewater

Frequency of Occurrence

Green County has several short power outages (i.e., lasting less than six hours) per year but does not have a history of extended power outages. The possibility always exists that a man-made or natural disaster could affect the power system for an extended period of time. Green County may also be subject to brown-outs (i.e., times when, because of high power demand, areas are purposefully turned off of the power grid) by the power companies that provide service.

The frequency of power outages in Monroe has declined since the power company cross-linked the city (now supplied from both directions) and in general, Green County has a moderate likelihood of utility failures with the potential for a low severity of effects if it does occur in the general population. Obviously, power outages can be life-threatening, especially if a person with special needs (e.g., the elderly, the young, those on special medical equipment) is involved. The workgroup therefore ranked the severity of effects on this group as moderate.

Vulnerability

Everything, particularly communications networks, are sensitive to electrical outages. People, especially populations with functional and access needs, in residential properties may not be able to safely live in

their homes because of inadequate heat, the inability to cook, etc. Businesses, including the utilities themselves, may lose money due to the inability to produce goods and services for which they can bill. Utilities may also be non-operational due to damaged infrastructure, which can be very expensive to replace and/or repair. Critical infrastructure such as hospitals, schools and governmental facilities may not be able to operate or may have to operate at a reduced capacity due to the loss of utility services. While utility failure often causes nuisance-level effects, increased use of technology means that such failures can also significantly disrupt businesses and community operations. For example, loss of internet can shut down normal operations by eliminating the ability to process credit cards or access records.

Livestock operations run on diesel and electricity interchangeably. Generally, farmers can get by for a few days if only one is lost; longer term, more issues will arise (e.g., may need to truck in water). Therefore, a long-term power outage may impact agricultural concerns because extreme temperatures reduce the volume of livestock products and products such as milk may not be able to be properly stored. Finally, transportation on roadways may become unsafe due to the loss of directional and street lights.

Beginning in 2009, Green County began participating with other counties in Wisconsin in a Long-Term Power Outage workshop and exercise series to identify risks and vulnerabilities for power outage situations. It is expected that the workshops will provide information that can be used to prepare for, respond to recover from and mitigate these incidents.

Hazard Mitigation Strategies

The goal of utility failure mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. The following are proposed hazard mitigation strategies:

- Investigate options for replacing/upgrading the generator at the City of Brodhead wastewater facility. City services and the EM site are located at the wastewater facility building. The generator is 20 years old and was only installed for wastewater backup.
- Explore options for a portable generator for the City of Brodhead sewer system.
- Explore options for a new generator for the Village of Browntown well house.
- Explore options for ensuring that new county buildings have generators.

Technological Hazards

Technological hazards are those that are man-made; they can be accident or purposeful. Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom. The Federal Bureau of Investigation (FBI) classifies terrorism in the United States as one of two types:

- Domestic Terrorism – Terrorist activities that focus on facilities or populations without foreign direction.
- International Terrorism – Terrorist activities that are foreign- based and/or sponsored by organizations or groups outside of the United States.

Physical Characteristics

The form and locations of many natural hazards are identifiable and, even in some cases, predictable. However, there is no defined geographic boundary for technological incidents. Based on previous events

it is presumed that critical facilities, critical services and large gatherings of people are at higher risk for terrorism. Terrorism cannot be forecast with any accuracy. This allows the potential for most, if not all, types of terrorist acts to occur anywhere and at any time.

The National Terrorism Advisory System, or NTAS, is used to communicate information about terrorist threats by providing timely, detailed information to the public, government agencies, first responders, airports and other transportation hubs and the private sector because the electrical system powers the pumps and lift stations that move and treat the water and sewage.

Frequency of Occurrence

There are regular occurrences of accidental incidents in Green County which are managed by the emergency system. No data exists to show that a community in Green County has experienced a terrorist act. The history of terrorism on United States soil includes the large-scale attacks of September 11, 2001 and the ensuing anthrax attacks; the 1995 bombing of the Murrah Federal Building in Oklahoma City; and earlier bombing of the World Trade Center in 1993.

Terrorism can strike not just large cities but in any community of any size. While no amount of planning and mitigation can completely remove the risk of terrorism, hazard mitigation and preparedness can help reduce the risk. Given the lack of information on observed historical damages, frequency of occurrence, intensity, and damage parameters, no estimate is available for the probability of a future occurrence of a terrorist event.

Vulnerability

Because there is no defined geographic hazard boundary, all people and property in Green County are potentially exposed to risk from damage from a technological incident. While an accident may not be preventable, it is well within the county's ability to lessen the likelihood and/or the potential effects of an incident. Response agencies in the county continue to improve their readiness to respond to a technological incident through participation in state and federal programs that provide training and equipment for agencies that would respond to a local accident or criminal/terrorist incident; and in exercises that help to improve agency coordination and test local response plans.

As part of the community risk analysis, emergency management coordinates with other public and private agencies to evaluate areas of concern (for accidents) and potential targets (for criminal/ terrorist acts) so that mitigation and preparedness resources can be geared to the highest concerns such as hazardous materials facilities, crude oil shipments, environmental complications from man-made changes such as from fracking, community festivals, etc. In general, Green County has a low likelihood of terrorism/intentional acts of violence and a high risk of damage, death or injury due to a loss.

Hazard Mitigation Strategy

The goal of utility failure mitigation activities is to reduce, in a cost-effective manner, the loss of lives and property due to these events. Green County has worked directly with the utility companies and emergency responders in formulating emergency management plans. During a fuel or power shortage, residents, schools, industry, and businesses will be asked to take measures to conserve fuel. If the fuel shortage reaches a critical stage, all non-essential facilities will be closed and contingency plans will be activated. Green County has developed the following mitigation strategies for terrorism/intentional acts of violence:

- Emergency Management should develop, enhance and implement education programs aimed at reducing the risk to citizens, public agencies, private property owners, businesses, and schools.
- Emergency Management will regularly review, update and continue to provide easily accessible hazard-related information.
- Emergency Management will work with potential businesses within the county to promote hazard mitigation education and awareness; and discuss ways to better integrate mitigation.

Chapter 4: County-Wide Mitigation Strategies

Similar to the local mitigation strategies identified in Chapter 4, county-wide strategies were developed by identifying community assets to protect rather than addressing specific hazards. The county-wide strategies of the 2022 Plan intend to reduce or avoid long-term vulnerabilities to the people, economy, infrastructure, and environment of Green County.

Although, several strategies identified in this chapter are ongoing from the previous plan, many of them have been updated or are new. The strategies work towards achieving the overall hazard mitigation goals of the plan.

Overall Hazard Mitigation Goals

The planning team evaluated and updated the previous goals of the plan. Whereas the previous plan's goals and corresponding strategies were developed to address each hazard, the plan developed hazard mitigation goals to reduce or avoid long-term vulnerabilities to the County's and local community's assets. In this manner, the updated goals address multiple hazards throughout the County to protect the function and character of Green County and local communities. The updated goals of the plan are listed below.

- Protect human lives, both today and for future generations.
- Protect human and environmental health.
- Protect Utilities, infrastructure, and critical facilitates, including police, fire, and EMS stations.
- Protect technological capabilities, data accessibility, and communication networks critical to social function.
- Help people protect themselves.
- Protect roads from washouts/landslides.
- Prevent future risk of hazards in highly vulnerable areas.
- Maximize the use of state and federal funds.
- Enhance public education about disaster response and expand public awareness of natural hazards.

Green County has also been working with community schools and faith based organizations on emergency planning efforts. Specific County Wide Mitigation Strategies can be found in Appendix E: Summary of Mitigation Strategies and Appendix F: Report on Previous Plan Mitigation Strategies.

Chapter 5: Plan Adoption and Implementation

Plan Adoption

This Plan must be adopted by the Green County Board as well as the incorporated areas (Cities and Villages) of Green County. Cities and villages must adopt the plan within a year of the County adoption in order to receive hazard mitigation grant funds. According to FEMA, townships do not have to formally adopt the Plan to be eligible to receive mitigation grants. Adoption of the Green County Multi-Hazard Mitigation Plan accomplishes the following:

- Confirms the commitment of community leaders and citizens to mitigate the effects of disasters.
- Provides a definitive guide for community leaders and officials of the County and local jurisdictions to initiate changes that will decrease damages incurred from disasters.
- Ensures the long-term continuity of mitigation policies and programs through changes in political leadership, County and municipal staff, and community decision makers.
- Provides confirmation to WEM and FEMA that the Plan's recommendations were assessed and approved by the governing authority of Green County.

Prior to the plan being adopted by the Green County Board and the cities and villages of Green County, it is reviewed by WEM to ensure compliance with the Disaster Mitigation Act of 2000. Once approved, WEM sent the Plan to FEMA Region V for their review and approval. FEMA and WEM determined the plan met requirements on (insert date). When both WEM and FEMA approved the Plan, it will be sent to the Green County cities and villages for their approval. The plan was adopted by the Green County Board on (insert).

Cities and villages that do not adopt the Plan cannot apply for mitigation grant funds unless they prepare, adopt, and submit a mitigation plan of their own. Adoption of the Plan gives the jurisdictions legal authority to implement mitigation strategies and to enact ordinances, policies, and programs with the goal of reducing disaster related losses. Townships do not have to formally adopt this Plan as the County may apply for mitigation grant funds on their behalf. Copies of the approval letters can be found in Appendix C: Approval and Adoption Letters

Plan Implementation

After County approval the Plan will be placed on the Green Co. Emergency Management website. Green County Emergency Management should take the lead on Plan implementation, which includes assurances that the Plan is referenced by future planning efforts and is used to provide guidance on political decisions, public expenditures and policy directives.

All jurisdictions included in this Plan will review and integrate this Plan into any future planning processes of their jurisdiction. This Plan and recommended hazard mitigation actions are used to inform future decisions of the participating jurisdictions in planning efforts including capital improvement plans, comprehensive plans, and comprehensive plan updates, long-range plans, and any plan that may review and make recommendations related to topics identified and discussed in this Plan.

Green County Emergency Management will work to prioritize mitigation projects and work with communities to secure financing for local mitigation strategies. Such efforts include preparation of state, federal, and non-profit grant funding opportunities.

County and local jurisdiction staff and elected officials will ensure that the recommended mitigation strategies are considered in budgets. In addition to grant opportunities discussed in this plan, as political will dictates, administrators and elected officials will contemplate the use of volunteer efforts, bonds, loans, fees, and taxes to finance high priority mitigation projects.

Plan Monitoring, Evaluation and Update

The Disaster Mitigation Act of 2000 requires the monitoring, evaluation and updating of the hazard mitigation plan every five years. This hazard mitigation plan is designed to be a "living" document and therefore will be reviewed and updated within five years from its approval date. The Green County Hazard Mitigation Plan Workgroup will provide leadership and guidance throughout the plan's life cycle (i.e., monitoring, evaluating, and updating). Updates will allow municipal leaders and the public to provide input into the process. The public will be notified of this opportunity via legal public notices.

The process for integrating hazard mitigation actions into other planning mechanisms will be led by the County Emergency Management Director. As the Emergency Management Director receives information between the five-year update periods (e.g., comprehensive or capital improvement plans) that might be included, it will be added to Appendix F: Inter-Revision Updates. Green County Emergency Management maintains responsibility and is the point of contact for all issues (e.g., monitoring, updating, and evaluating the effectiveness) regarding this plan. Municipalities can contact the county Emergency Management Director to add update local information at any time. Furthermore, the county Emergency Management Director will include in the Plan-of-Work activities program the distribution of an annual letter and media press release that reaches out to the plan's stakeholders (county offices, municipalities, the public, etc.). The communications will query if there are new elements for the mitigation plan as well as asking if there are any plans (new or updates) in which the mitigation plan can and/or will be used as a source plan. Comments will be received and discussed at an annual publicly-noticed open meeting of the county's Emergency Management committee. Note that after a disaster, the Emergency Management committee may also meet to discuss mitigation strategies that might be applicable. These same stakeholders will be invited to fully participate in the five-year plan update, which will be detailed in the updated plan documents and will fully conform to FEMA's requirements.

During the plan's lifecycle, the county and incorporated municipalities will consider the strategies listed as they annually prioritize "regular" maintenance projects, as they set their annual budgets, after a disaster period and as grants become available that might help off-set the costs of some of the strategies listed within the plan. The latter will be instigated by notice of these opportunities by the county Emergency Management Director. These projects will be reported in the annual letter to the county Emergency Management Director. The Director will keep and compile the inter-revision data for inclusion in the five-year update, which will be coordinated through county Emergency Management beginning at least 18 months prior to expiration and at which time they will report on their progress towards meeting the hazard mitigation goals. The update will bring together many of the same workgroup members as well as any new stakeholders (e.g., elected officials, businesses, academia, members of the public) who respond to the invitation to participate and have an interest in mitigation planning.

The plan participants also recognize this document as an important planning tool within the community

and will use this plan as a reference as they complete other related planning. The County Emergency Management Director, the Green County Land and Water Management and Planning and Zoning Departments will use this plan as they update the Green County Comprehensive Plan as well as community ordinances such as zoning, shoreland, floodplain, wetland, etc. and in other stand-alone plans such as those for park and recreation, sustainability, and farmland preservation and will refer to it as they are involved in the planning and other preparedness activities of their municipalities. Many of these plans are on a regular updating cycle and as they come up for renewal, Emergency Management will be notified and provide any relevant planning materials (from the hazard mitigation plan and any additional information received since the plan's approval). To date, the plans have not come up for review or have not been integrated. Municipalities with planning departments have also committed to referring to the mitigation plan in their zoning updates, flood and shoreland planning and in their comprehensive plans. After this plan has passed its reviews from Wisconsin Emergency Management (WEM) and the Federal Emergency Management Agency (FEMA) and is approved, the county Planning Department and the municipalities will receive a copy. They have committed to using and referring to the mitigation plan as they complete their regularly scheduled reviews and updates of the aforementioned plans. Green County Emergency Management will also refer to this plan in their emergency preparedness activities.

Appendixes

Appendix A: Municipal Hazard Preparedness & Mitigation Surveys
Appendix B: Hazard Mitigation Planning Team Meetings
Appendix C: Public Meetings and Input
Appendix D: Approval and Adoption Letters
Appendix E: Summary of Mitigation Strategies
Appendix F: Report on Previous Plan Mitigation Strategies

Appendix A: Municipal Survey Results

From: Tanna Mckeon <>
Sent: Monday, May 9, 2022 9:32 AM
To: Drake Daily <Administrator@newglarusvillage.com>; Emily Zarling <browntown.clerk@tds.net>; Jay Noble <jaynoble4974@gmail.com>; Kim Blumer <kblumer.albanywi@gmail.com>; Leaora Miller <l.miller@vi.monticello.wi.us>; Linda Kuhlman <clerk@brooklynwi.gov>; Mark Bruner <president@brooklynwi.gov>; Nikolai Wahl <cityclerk@cityofbrodheadwi.us>; Village of Albany Clerk <villageclerk@albanywi.org>; Village of Monticello Clerk/Treasurer <monticello.clerk@gmail.com>; Abel Schultz <asalbanytownboard@yahoo.com>; Allen Schneider <diamond_53520@yahoo.com>; Amy McCullough <jeffersontcc@tds.net>; Amy McCullough <amccullough3@yahoo.com>; Anna Anderson <sylvesterchair@outlook.com>; Billie Reynolds <bjr21@yahoo.com>; Brandi Harris <adamstownclerk@gmail.com>; Chris Gallagher <clerk@brooklynwisconsin.org>; Dan Holland <djholland44@yahoo.com>; Daniel Truttman <chairman@townofyork.org>; Dawn Sass <clerk@townofexeter.com>; Dean Houlberg <dhalbanytownboard@gmail.com>; Deb Cline <tsgrove.clerk@gmail.com>; Deb Cline <Deb.cline@kuhn.com>; Duane Zimmerman <duanecarlzimm@yahoo.com>; Harvey Mandel <hmandel@greencountywi.org>; Jessica L Schlumpf <clerk-treasurer@townofyork.org>; 'Jim Rutledge ' <townofclarno@tds.net>; John Wright <clerk@townofnewglarus.com>; Joni-Waelchli-Buehl <townclerk@townofmtpleasantwi.com>; Karen Signer <cadiz.clerk@gmail.com>; Kathy Pennington <pennington.townofbrooklyn@gmail.com>; Ken Christen <kristen@tds.net>; Ken Goodman <kengoodman2002@yahoo.com>; Kimber Blum <clerktownof@tds.net>; Lauren Meinert <laurenmeinert54@gmail.com>; Nannette Hilliard <nhilliard@tds.net>; Pat Faessler <tsgrove.chairman@gmail.com>; Peggy Murphy <townofmonroe@tds.net>; Sandra K. McManus <clerktreasurer@townofdecatur.com>; Ted Fahey <clerk@townofexeter.com>; Ryan Camron <rcamron@greencountywi.org>; Allan Gerber <agerber@cityofmonroe.org>; 'Chris Narveson ' <cnarveson@greencountywi.org>; Ed Hoff <Ehoff@brodheadwl.com>; 'Joe Cockroft ' <pwdirector@newglarusvillage.com>; 'Kevin Komprood ' <monticellowaterutil@tds.net>; Leif Spilde <spilde@brooklynwi.gov>; Lonnie Gill <publicworks@albanywi.org>; 'gziegler@villageofbelleville.com' <gziegler@villageofbelleville.com>; Village of Belleville Clerk <rmcgee@villageofbelleville.com>; Village of Belleville Adminstrator <jodell@villageofbelleville.com>; Dale Yurs <dyurs@villageofbelleville.com>; Don Silvernale <dsilvernale@villageofbelleville.com>; Arianna Voegeli <avoegeli@greencountywi.org>
Cc: Melissa Waller (melissa@pre-emergency.com) <melissa@pre-emergency.com>; Gary Ziegler <gziegler@greensheriff.com>
Subject: County Wide Mitigation Plan Survey

Every 5 years this office is required to update the County Wide Hazard Mitigation Plan, which I am in the process of doing now. A committee representing many municipalities in Green County has been formed to support and assist with this update. I was also awarded a FEMA grant to hire a contractor, Melissa Waller with Pre-Emergency Planning to work on this.

This plan has been in effect for many years now and the County of Green and all municipalities have signed on to this plan. Having this plan in place and completing the required updates allows us to apply for mitigation grants.

Attached is a letter further explaining this grant and a survey that we need to you complete and return to Pre-Emergency Planning. This may have been sent to several people in your municipality, such as the Town Chair & Clerk, Village/City Administrators, Clerks & Mayors, etc. Only one survey per municipality is needed, so please get together during a monthly meeting and complete the survey. (*The exception to this is Green Co. IT dept., as it involves cybersecurity*). Your participation in this survey is very important and an integral piece of this plan.

If you have any questions, please contact me. Thank you for your time and attention to this.

Tanna McKeon, Director
State of WI Certified Emergency Manager
608-328-9416
https:www.greencountyem.com
follow GCEM on Facebook

Green County
Emergency Management
PO Box 473
2827 6th Street
Monroe, WI 53566

www.greencountyem.com &
follow us on Facebook

Tanna McKeon, Director
State of WI Certified Emergency Mgr.

608-328-9416 Fax: 608-328-9414
Email: tmckeon@greensheriff.com

May 9, 2022

Attention: All Towns, Village, Cities and Public Works in Green County

Green County, like the rest of the State of Wisconsin, is vulnerable to a variety of disasters. Wisconsin has incurred disaster-related damages totaling $3 billion in the last three decades but future losses can be reduced through mitigation activities. A recent study by the Multi-hazard Mitigation Council shows that each dollar spent on mitigation saves society an average of four dollars.

Mitigation actions reduce or eliminate the long-term risk to human life and property from hazards. These preventative actions can be as simple as elevating a furnace in a basement that sometimes has water on the floor. Mitigation can also have a comprehensive approach such as relocating buildings out of the floodplain or strengthening critical facilities to prevent wind damage and provide stronger shelter.

In an effort to better prepare Green County to manage its vulnerability to disaster, Green County Emergency Management applied for and received a FEMA grant to update the County-Wide All-Hazard Mitigation Plan currently in effect. FEMA requires these plans to be updated every 5 years. This goal of this grant is to complete an update for an approvable plan, which will serve as a roadmap that outlines potential cost-effective hazard mitigation activities, some of which might be available for future grant funding. Pre-Emergency Planning has been hired as the contractor to assist with updating the plan. The plan is designed to look at the risks and vulnerabilities that the county faces from natural disaster and to highlight mitigation strategies that might reduce future losses to life and property. **As part of this planning process, I am asking for your assistance and participation updating this plan.**

The first step is asking that you please place an item on your **next** municipal meeting agenda **to complete the enclosed survey**. This very short survey will help us to identify the concerns that you have in your municipality and to capture ideas that you have for making your community safer and more disaster resistant. Please return your completed surveys to Melissa Waller at melissa@pre-emergency.com as soon as possible but **no later than July 1, 2022**.

After receiving your surveys, the information will be incorporated into the draft plan, which is being guided by a workgroup of interested agencies and public members. After the workgroup has a final draft, we will be sending copies of the plan to each of you for final review and adoption. It is important to note two things:

Adoption of this plan will not cost your community anything. You will not be committing to completing any of the projects listed; instead, it is a list of ideas/projects that can be accomplished should the funding and will to complete them become available. **If you do not adopt this plan, your community *will not be eligible to apply for* and receive mitigation project funding in the future.** By having this plan in place many municipalities and Green County has received thousands of dollars in grant funding for mitigation projects.

Let me thank you in advance for the assistance that you are providing. This small investment of your time will help make our community a safer, healthier and more disaster-resistant community for years to come.

Sincerely,

Tanna McKeon

Tanna McKeon, Green County Emergency Management Director

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought			2012		
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow				1996	
Wildfire					X
Windstorm/ Tornado				X	
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill	X				
Cybersecurity	X				
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			X		
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow				X	
Wildfire					X
Windstorm/ Tornado			X		
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill			X		
Cybersecurity	X				
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? ROADS, TOWN HALL, TOWN GARAGE, BRIDGES

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? NO PROBABLY NOT INTERESTED

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)					X
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters? NOTHING CURRENTLY

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? NO

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: TOWN OF JORDAN

Name/Title of Person Completing the Survey: BILLIE REYNOLDS, TOWN CLERK

Date Survey was Completed: MAY 12, 2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow		X			
Wildfire					X
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought				X	
Dust Storm					X
Earthquake				X	
Flood	X				
Lakeshore Erosion					X
Landslide/ Debris Flow	X				
Wildfire				X	
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill		X			
Cybersecurity	X				
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?
   Yes, roads

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? **Roads**

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? **No, but most homes have basements.**

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas	X				
Enhancing the function of natural features (streams, wetlands)	X				
Protecting historical and cultural landmarks			X		
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters? **Emergency services, streambank improvement, debris removal**

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? **None**

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Mount Pleasant

Name/Title of Person Completing the Survey: Joni Waelchli-Buehl clerk

Date Survey was Completed: 06/30/2022

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   - o NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought				X	
Dust Storm					X
Earthquake					X
Flood					X
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado			X		
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill					X
Cybersecurity					X
Other:					X

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			X		
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado			X		
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill					X
Cybersecurity				X	
Other:					X

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

No.

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

   Power poles & lines.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

   No; no.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property			X		
Protecting critical facilities (hospitals, fire stations, etc.)			X		
Preventing development in hazard areas			X		
Enhancing the function of natural features (streams, wetlands)	X				
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities		X			
Strengthening emergency services		X			

7. What ideas do you have for your community to mitigate natural disasters?

   None

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

   No.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of York Board

Name/Title of Person Completing the Survey: Jessica L. Schlumpf / Clerk-Treasurer

Date Survey was Completed: 6/14/2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?

   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood		X			
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					
Dust Storm					
Earthquake					
Flood				X	
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

   Roads -- some washouts on roads (blacktop & gravel)

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

   Roads

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

   No – not interested at this time

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

   None at this time

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

   None at this time

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Spring Grove

Name/Title of Person Completing the Survey: Town Board Members, Deb Cline, Clerk

Date Survey was Completed: Tuesday, June 21, 2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?

   ● NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill					
Cybersecurity					
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

   NO

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? ?

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? No / yes

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? NO

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Sylvester Township

Name/Title of Person Completing the Survey: Anna Anderson / Town Chair

Date Survey was Completed: 06/09/22

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   X NO (If NO, skip to Question 2)
   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought				X	
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire				X	
Windstorm/ Tornado			X		
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill				X	
Cybersecurity					X
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?
   No

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

   Road and bridges.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?
   No. It wouldn't be feasible in a rural community.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (hospitals, fire stations, etc.)					X
Preventing development in hazard areas					X
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services		X			

7. What ideas do you have for your community to mitigate natural disasters?

   Continue to work with our local Green County emergency response team.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

   No.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Adams

Name/Title of Person Completing the Survey: Brandi Harris | Clerk

Date Survey was Completed: 6/13/2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought			2012		
Dust Storm					X
Earthquake					X
Flood		2017			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado					X
Winter Storm/ Ice Storm			2010		
Hazardous Materials Spill					X
Cybersecurity					X
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought				X	
Dust Storm					X
Earthquake					X
Flood				X	
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado				X	
Winter Storm/ Ice Storm				X	
Hazardous Materials Spill				X	
Cybersecurity				X	
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?
   NO

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?
Water and Sewer Facilities, Village Hall(Police Department, Public Works, EMS, Fire Department), Public Works Shop (All Village Equipment is Keep) Roadways and Sign's.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?
NO

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property			X		
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)			X		
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?
The Village is finishing work on a new shop for Public Works.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Village of Albany / Public Works

Name/Title of Person Completing the Survey: Lonnie W. Gill / Superintendent of Public Works

Date Survey was Completed: June 9, 2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought		x			
Dust Storm					x
Earthquake					x
Flood		x			
Lakeshore Erosion					x
Landslide/ Debris Flow					x
Wildfire					x
Windstorm/ Tornado		x			
Winter Storm/ Ice Storm		x			
Hazardous Materials Spill			x		
Cybersecurity					x
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought		x			
Dust Storm					x
Earthquake					x
Flood		x			
Lakeshore Erosion					x
Landslide/ Debris Flow					x
Wildfire					x
Windstorm/ Tornado		x			
Winter Storm/ Ice Storm		x			
Hazardous Materials Spill			x		
Cybersecurity			x		
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

   Homes in low areas from extremely high ground water

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

   We use the library for the trailer park, but not adequate shelters.

   Yes we would be interested.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	x				
Protecting critical facilities (hospitals, fire stations, etc.)	x				
Preventing development in hazard areas		x			
Enhancing the function of natural features (streams, wetlands)		x			
Protecting historical and cultural landmarks		x			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	x				
Protecting and reducing damage to utilities	x				
Strengthening emergency services	x				

7. What ideas do you have for your community to mitigate natural disasters?

   None that I am aware of.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

   Not that I am aware of.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Brodhead Public Works

Name/Title of Person Completing the Survey: Richard Vogel / Public Works Director

Date Survey was Completed: August 1. 2022

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought			X		
Dust Storm				X	
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill				X	
Cybersecurity	X				
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought		X			
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire			X		
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill			X		
Cybersecurity		X			
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?
   The Town of Brooklyn has experienced flooding issues on roads and bridges causing us to repair these items. We have also experienced power outages.

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? The Town of Brooklyn believes our roads, bridges and utilities are vulnerable during a disaster; primarily during a weather related event.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? No. The Town of Brooklyn is a rural area and because we are spread out, residents rely on their own tornado shelter. Should anyone be in the Town Hall during a tornado, we do not have a basement so they will huddle in the interior hallway away from windows. We would welcome dialogue and funds for protecting the Town Hall and people in the Town Hall during a tornado.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property			X		
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)			X		
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters? The Town of Brooklyn relies on existing weather warning systems and news apps on phones to keep residents informed.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? No

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Brooklyn Town Board

Name/Title of Person Completing the Survey: Kathy Pennington, Chairperson

Date Survey was Completed: June 16, 2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought		X			
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill		X			
Cybersecurity					X
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought		X			
Dust Storm					X
Earthquake					X
Flood	X				
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire				X	
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill				X	
Cybersecurity				X	
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

We have had flood damage to roads a number of times since the Pecatonia river runs thru us. Along with flood midigation on Dill road.

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

All of our buildings are at risk.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

No we don't, but the Recycling center is under ground on three sides so it could function as one. However we are to spread out so it's not feasible.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property			X		
Protecting critical facilities (hospitals, fire stations, etc.)		X			
Preventing development in hazard areas			X		
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

Take 'global warming" seriously. The heat is making all weather events far more intense.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

No new building are slated, no money for this type of work, all money we can spare go to doing roads. Over 50 per cent of our roads are paser rating 2 or 3.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Cadiz

Name/Title of Person Completing the Survey: Lance Fredricks 1st Supervisor

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought			X		
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill					X
Cybersecurity					X
Other: COVID 19	X				

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			X		
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado			X		
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill				X	
Cybersecurity				X	
Other: COVID-19	X				

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

   2017 washouts

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

Roads, bridges, powerlines, aquifer

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

shelter

No + no

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

Stream bank improvements, storm water management, ditching, shouldering, larger culverts, more siren locations

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

Possible Town Garage but no location yet

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of New Glarus

Name/Title of Person Completing the Survey: Town Board

Date Survey was Completed: 6/8/2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm					
Hazardous Materials Spill					
Cybersecurity					
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					
Dust Storm					
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire				X	
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill			X		
Cybersecurity	X				
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? GSB Data Center, Cellular Towers, Sheriffs Dept Building, Pleasant View Nursing Home, Historic Court House,

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas	X				
Enhancing the function of natural features (streams, wetlands)			X		
Protecting historical and cultural landmarks			X		
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters? Planning and contingency plans are important. Natural disasters will happen and for the most part is not preventable but having planning's and processes in place will help mitigate the risks.

   Cybersecurity attacks are increasing and having tabletop exercises and plans in place from a Countywide perspective would increase our responsiveness when this happens.

   Making sure that each community can leverage each other or the County in the event of a natural disaster or cyber event to bring services and operations back online quickly with a reduced risk will benefit all.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   - o NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought	✓				
Dust Storm					✓
Earthquake					✓
Flood			✓		
Lakeshore Erosion					✓
Landslide/ Debris Flow					✓
Wildfire					✓
Windstorm/ Tornado		✓			
Winter Storm/ Ice Storm		✓			
Hazardous Materials Spill					✓
Cybersecurity					✓
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			✓		
Dust Storm					✓
Earthquake					✓
Flood			✓		
Lakeshore Erosion					✓
Landslide/ Debris Flow					✓
Wildfire					✓
Windstorm/ Tornado			✓		
Winter Storm/ Ice Storm			✓		
Hazardous Materials Spill					✓
Cybersecurity					✓
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

No

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? Roads – flooding, wash outs

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

No, No

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property			✓		
Protecting critical facilities (hospitals, fire stations, etc.)	✓				
Preventing development in hazard areas			✓		
Enhancing the function of natural features (streams, wetlands)			✓		
Protecting historical and cultural landmarks		✓			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses			✓		
Protecting and reducing damage to utilities	✓				
Strengthening emergency services	✓				

7. What ideas do you have for your community to mitigate natural disasters?

None

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?

None

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Town of Jefferson

Name/Title of Person Completing the Survey: Amy McCullough / Clerk / Treasurer

Date Survey was Completed: 5/11/22 at a regular town board meeting

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   - ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought		X			
Dust Storm				X	
Earthquake					X
Flood				X	
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado				X	
Winter Storm/ Ice Storm	X				
Hazardous Materials Spill					X
Cybersecurity					X
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			X		
Dust Storm					X
Earthquake					X
Flood			X		
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill			X		
Cybersecurity		X			
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

   YES

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? BRIDGES AND CREEKS DURING FLOOD EVENTS

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? NO SHELTERS, YES IF FUNDS AVAILABLE

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas	X				
Enhancing the function of natural features (streams, wetlands)	X				
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? COUNTY "N" INDUSTRIAL PARK

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: CITY OF MONROE PUBLIC WORKS

Name/Title of Person Completing the Survey: ALAN GERBER / DPW

Date Survey was Completed: 6-16-22

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   - o NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought	Yes	No	No	Yes	
Dust Storm	No	No	No	No	
Earthquake	No	No	No	No	
Flood	Yes	Yes	Yes	Yes	
Lakeshore Erosion	Yes	Yes	Yes	Yes	
Landslide/ Debris Flow	No	No	No	No	
Wildfire	No	No	No	No	
Windstorm/ Tornado	No	Yes	Yes	Yes	
Winter Storm/ Ice Storm	Yes	Yes	Yes	Yes	
Hazardous Materials Spill	Yes	Yes	Yes	Not Sure	
Cybersecurity	No				
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought	No				
Dust Storm	N/A				
Earthquake	N/A				
Flood	Yes				
Lakeshore Erosion	No				
Landslide/ Debris Flow	N/A				
Wildfire	N/A				
Windstorm/ Tornado	No				
Winter Storm/ Ice Storm	Yes				
Hazardous Materials Spill	No				
Cybersecurity	N/A				
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Very little, during flood events affects utilities as well as ice storms + wind storms.

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?
Overhead powerlines as well as basement sewage backups from flooding.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?
~~No, yes~~ Yes, basement of new Village Hall at 238 N. Main St.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		✓			
Protecting critical facilities (hospitals, fire stations, etc.)	✓				
Preventing development in hazard areas		✓			
Enhancing the function of natural features (streams, wetlands)			✓		
Protecting historical and cultural landmarks		✓			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		✓			
Protecting and reducing damage to utilities	✓				
Strengthening emergency services		✓			

7. What ideas do you have for your community to mitigate natural disasters?
communities working together for large disaster events.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?
Yes, we are building a new Village DPW shop at this time. 406 N. Main St.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Village of Monticello

Name/Title of Person Completing the Survey: Kevin Komprood DPW

Date Survey was Completed: 7-29-2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					
Dust Storm					
Earthquake					
Flood					
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado					
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill					
Cybersecurity					
Other:					

We do not keep records of the above. We likely experienced a winter storm/ice storm. Stormwater has cause some flooding.

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					
Dust Storm					
Earthquake					
Flood				X	
Lakeshore Erosion					
Landslide/ Debris Flow					
Wildfire					
Windstorm/ Tornado				X	
Winter Storm/ Ice Storm			X		
Hazardous Materials Spill					
Cybersecurity			X		
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)?

Please complete both sides of the form

Yes, there have been times power lines have been damaged by fallen trees or ice. Some flooding/stormwater management have spurred road reconstruction projects to upgrade stormwater management infrastructure.

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

Non-buried power lines' The Village only has one water storage facility at this time; the mobile home park is vulnerable to a tornado. Stormwater management continues to be a priority.

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

No. I think there would be support, particularly near the mobile home park, if funded.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas			X		
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

The construction of a second water tower would create redundancy in the system and make the community more resilient to a disaster. We continue to install additional stormwater infrastructure during road reconstruction projects.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?
A new school is slated to be built in the Southwestern quadrant of the Village. The Village is in the preliminary design/planning phases of a new water tower. Funding is the most critical piece of ensuring that project continues. A new subdivision may materialize within the next 5 years on the East side of the Village.

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Village of New Glarus

Name/Title of Person Completing the Survey: Drake Daily/ Village Administrator

Date Survey was Completed: 6/29/2022

Return Survey to Melissa Waller by July 1, 2022 via email at Melissa@pre-emergency.com

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?
   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					X
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire		X			
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill			X		
Cybersecurity		X			
Other:					X

2. For which of the following disasters do you think your community is at risk? (Check the appropriate box for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought					X
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion				X	
Landslide/ Debris Flow					X
Wildfire			X		
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill		X			
Cybersecurity	X				
Other:					X

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)

Wastewater collection system Flooding. Snow removal roads, storm water ponds flooding,

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster?

Wastewater collection system, storm water ponds (flooding).

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it?

No, we don't feel the need for one.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters?

The Village of Brooklyn is working with the property owners around the Douglas Street Pond to address pond flooding. Because of the defined number of Village residents surrounding the pond and the nature of the flooding potential, the Village will work with residents to develop a local association to seek out solutions specific for the body of water and identify means to promulgate these solutions.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location?
Brooklyn Commons (subdivision 24 houses). Brooklyn Business Park 2nd phase 40 acres. Both are in Dane County but right on the county line.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

Municipality/Department Completing the survey: Village of Brooklyn Emergency Management

Name/Title of Person Completing the Survey: Leif Spilde/ DPW Emergency Management Director

Date Survey was Completed: May 9th 2022

Please complete both sides of the form

GREEN COUNTY HAZARDS PREPAREDNESS & MITIGATION QUESTIONNAIRE

1. In the past five years, has your community experienced a disaster such as a severe windstorm, flood, wildfire, hazardous materials incident/spill, etc.?

   ○ NO (If NO, skip to Question 2)

   If YES, which of these natural disasters occurred? (Please check all that apply)

Event	When event last occurred:				
	Within past year	1-5 years ago	5-15 years ago	More than 15 years ago	Never
Drought					X
Dust Storm					X
Earthquake					X
Flood		X			
Lakeshore Erosion					X
Landslide/ Debris Flow					X
Wildfire					X
Windstorm/ Tornado		X			
Winter Storm/ Ice Storm		X	X	X	
Hazardous Materials Spill					
Cybersecurity					X
Other:					

2. For which of the following disasters do you think your community is at risk? (Check the appropriate b for each hazard)

Event	Extremely Concerned	Very Concerned	Concerned	Somewhat Concerned	Not Concerned
Drought			X		
Dust Storm				X	
Earthquake					X
Flood	X				
Lakeshore Erosion				X	
Landslide/ Debris Flow					X
Wildfire				X	
Windstorm/ Tornado	X				
Winter Storm/ Ice Storm		X			
Hazardous Materials Spill		X			
Cybersecurity	X				
Other:					

3. Has your community had damage to facilities or infrastructure (e.g., roads, public buildings, utilities)? Flooding – Dam, Fire Station, Former Police Station, Wastewater Treatment Plant, Several Village Parks. Wind Storm – Library Park Gazebo, Major Loss of Trees

Please complete both sides of the form

4. What facilities or infrastructure in your community do you think are especially vulnerable to damage during a disaster? Wastewater Treatment Plant, Dam, Highway 69 Bridge, Remy Road Bridge, Community Park Pedestrian Bridge, Car Bridge into Community Park, Community Park, Sugar River Park, Schools, Medical Clinic

5. Does your community currently have tornado shelters? If yes, how many and where? If no, would your community be interested in establishing a tornado if funds become available and the community supports it? The Village of Belleville does not currently have any tornado shelters. The Village of Belleville would be interested in building tornado shelter(s) of funding was available.

6. How important do you think each of the following projects are in mitigating (i.e., lessening the impacts of) a natural disaster in your community?

Project	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing the function of natural features (streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Promoting cooperation among public agencies, citizens, non-profit organizations and businesses	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services	X				

7. What ideas do you have for your community to mitigate natural disasters? Construct a combination earthen and sheet pile levee on the south side of the Sugar River from approximately the Badger State Trail to the treatment plant facility to protect the facilities and residents within the Sugar River floodplain limits in the southeast corner if the Village. Development projects will be reviewed to meet the current ordinances in order to minimize stormwater effects from developments. Evaluate back up power for Village and critical private facilities. Educate public regarding severe weather. Although the Village does not have many mobile homes, they must work with the owners to assist them in securing their homes and educate them what to do in the event of severe storms.

8. Do you have any community building projects (e.g., subdivisions, office/industrial parks, roads) slated to be built in the near future? If so, what is the project called and what is its location? New developments in the northwest and northeast sections of the Village.

USE EXTRA PAGES TO EXPLAIN PROJECTS IF NEEDED

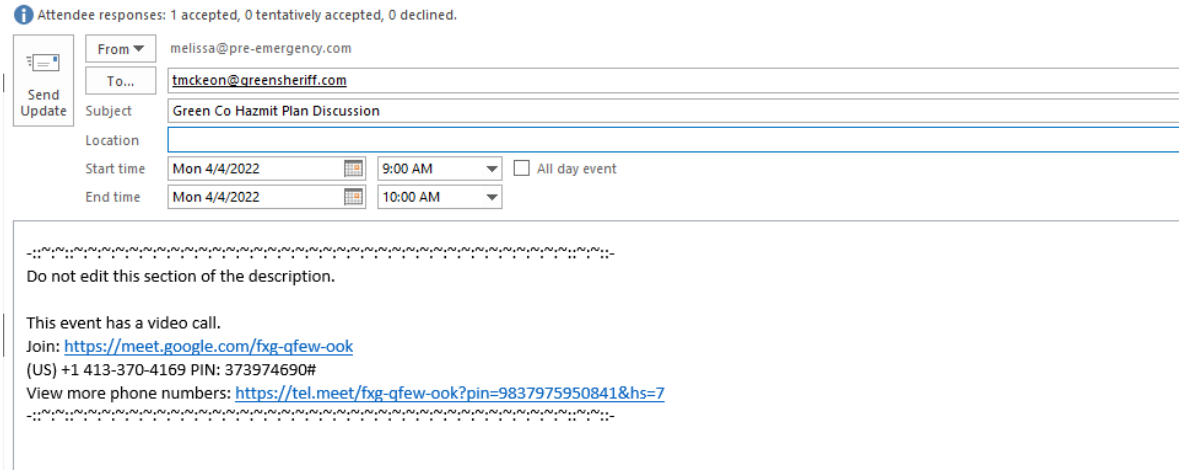
Municipality/Department Completing the survey: Village of Belleville

Name/Title of Person Completing the Survey: Gary J. Ziegler, Emergency Management Committee Chair

Date Survey was Completed: 7/8/22

Please complete both sides of the form

Appendix B: Hazard Mitigation Planning Team Meetings



Attendee responses: 1 accepted, 0 tentatively accepted, 0 declined.

Send Update

From melissa@pre-emergency.com

To... tmckeon@greensheriff.com

Subject Green Co Hazmit Plan Discussion

Location

Start time Mon 4/4/2022 9:00 AM All day event

End time Mon 4/4/2022 10:00 AM

Do not edit this section of the description.

This event has a video call.
Join: https://meet.google.com/fxg-qfew-ook
(US) +1 413-370-4169 PIN: 373974690#
View more phone numbers: https://tel.meet/fxg-qfew-ook?pin=9837975950841&hs=7

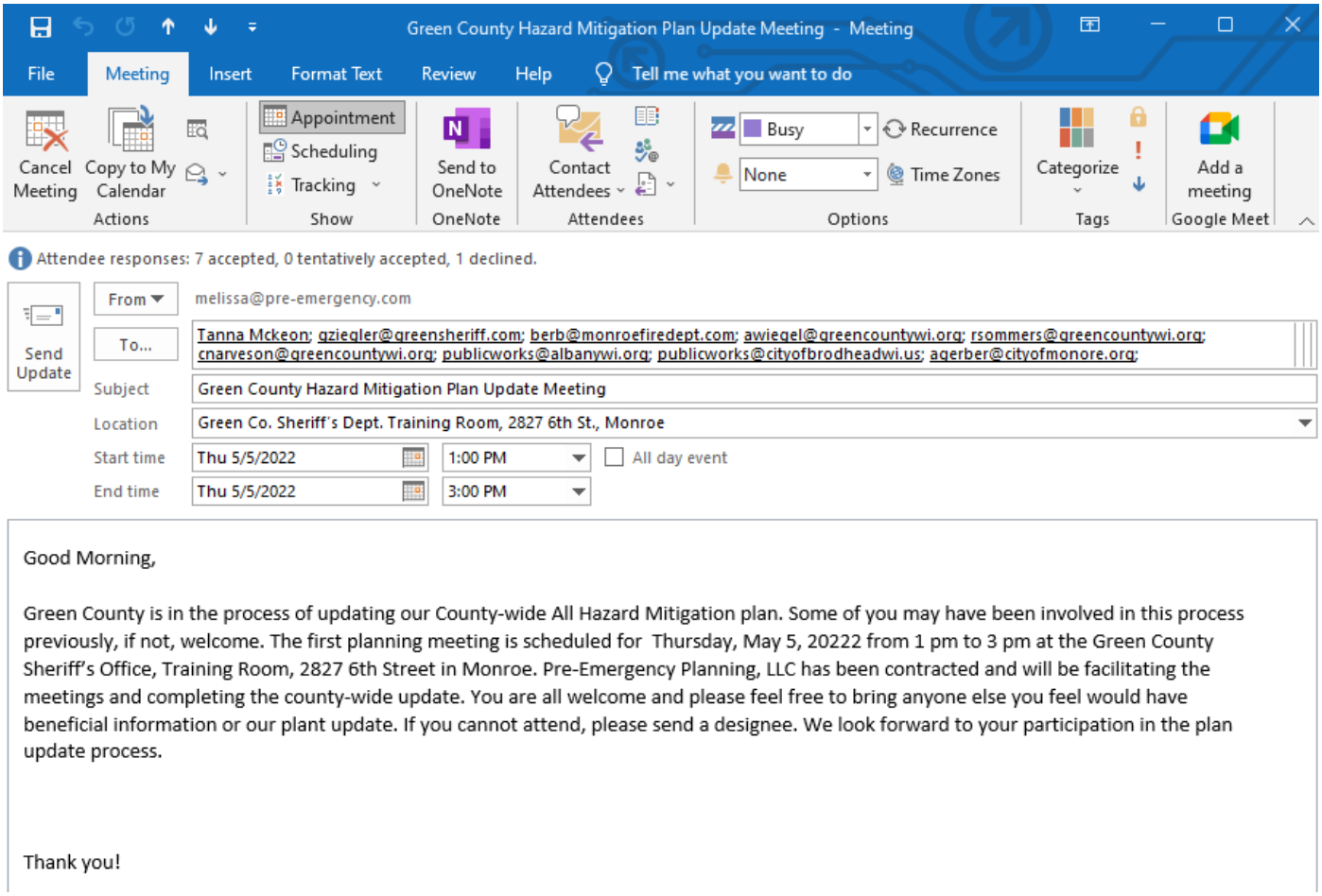
PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Virtual Planning Meeting

Date: Monday, April 4, 2022
Time: 9:00 am – 10:00 am
Attendees:
Tanna Mckeon, Green County Emergency Management
Melissa Waller, PEP

Planning Meeting Discussion Items

I. Welcome and Introductions
II. Project Overview
III. Timeline/Benchmarks
IV. Planning Team Development
V. Future Conferences and activities
VI. Questions/Comments
VII. Adjournment


Green County Hazard Mitigation Plan Update Meeting - Meeting
File
Meeting
Insert
Format Text
Review
Help
Tell me what you want to do
Cancel Meeting
Copy to My Calendar
Actions
Appointment
Scheduling
Tracking
Show
Send to OneNote
OneNote
Contact Attendees
Attendees
Busy
Recurrence
None
Time Zones
Options
Categorize
Tags
Add a meeting
Google Meet
Attendee responses: 7 accepted, 0 tentatively accepted, 1 declined.
Send Update
From
melissa@pre-emergency.com
To...
Tanna Mckeon; gziegler@greensheriff.com; berb@monroefiredept.com; awiegel@greencountywi.org; rsommers@greencountywi.org; cnarveson@greencountywi.org; publicworks@albanywi.org; publicworks@cityofbrodheadwi.us; agerber@cityofmonore.org;
Subject
Green County Hazard Mitigation Plan Update Meeting
Location
Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe
Start time
Thu 5/5/2022
1:00 PM
All day event
End time
Thu 5/5/2022
3:00 PM
Good Morning,
Green County is in the process of updating our County-wide All Hazard Mitigation plan. Some of you may have been involved in this process previously, if not, welcome. The first planning meeting is scheduled for Thursday, May 5, 20222 from 1 pm to 3 pm at the Green County Sheriff's Office, Training Room, 2827 6th Street in Monroe. Pre-Emergency Planning, LLC has been contracted and will be facilitating the meetings and completing the county-wide update. You are all welcome and please feel free to bring anyone else you feel would have beneficial information or our plant update. If you cannot attend, please send a designee. We look forward to your participation in the plan update process.
Thank you!

PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Thursday, May 5, 2022
Time: 1:00 pm – 3:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

	Name	Department/Agency Name
1.	Melissa McCollar	Pre-Emergency Planning
2.	Tanna McKeon	Green Co. E m Directo
3.	Gary Ziegler	Green County EM
4.	Chris Narveson	Green Cty Highway
5.	Alan Gerber	City of Monroe
6.	Rich Vogel	City of Brodhead
7.	Leif Spilde	Village of Brooklyn
8.	Rob Sommers	County Treasurer/Land Records
9.	Drake Daily	Village of New Glarus
10.		
11.		
12.		
13.		
14.		

1

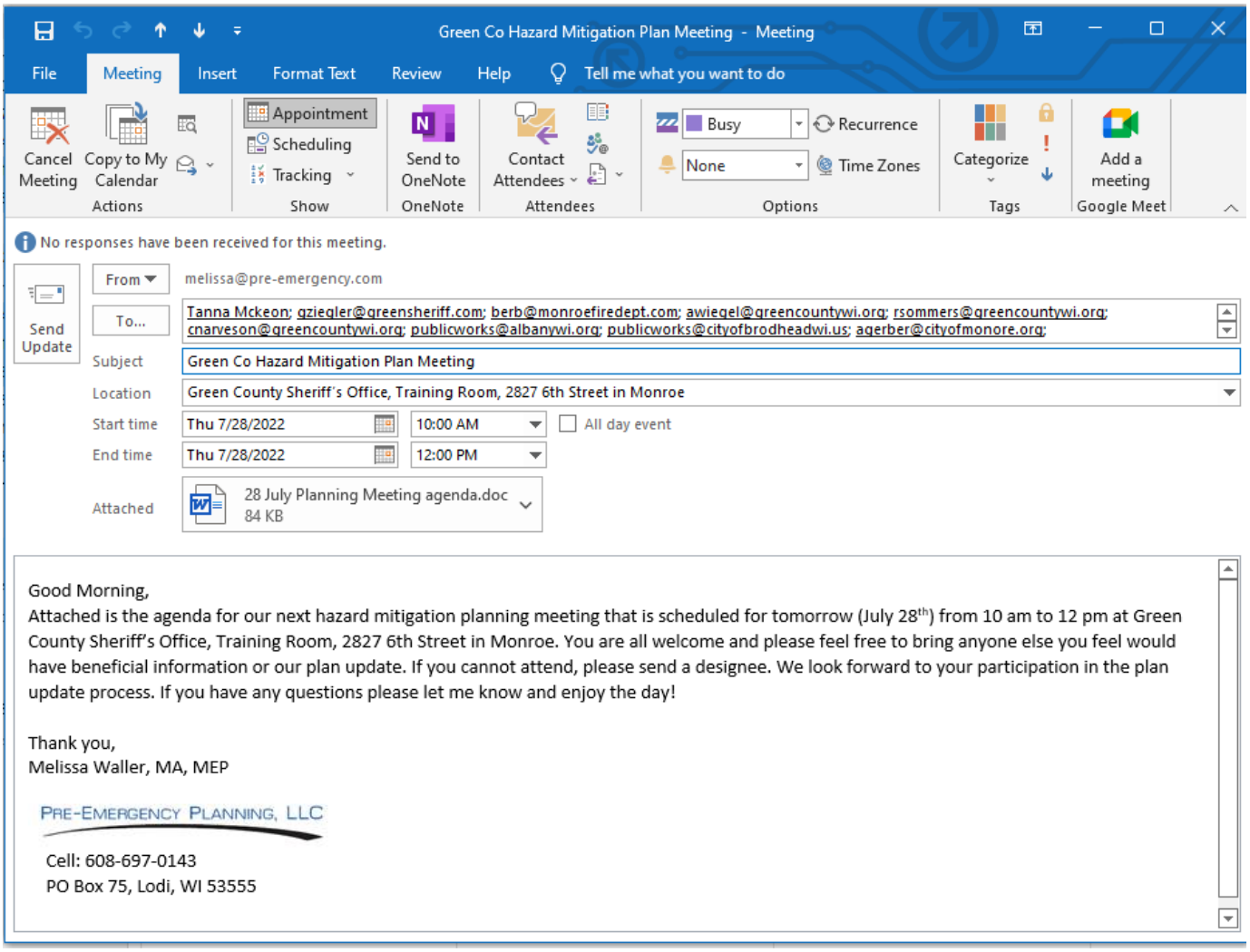
PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Thursday, May 5, 2022
Time: 1:00 pm – 3:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

Planning Meeting Discussion Items

I. Welcome and Introductions
II. Project Overview
    a. Hazard Mitigation Planning Update Process
III. Hazard Preparedness and Mitigation Survey
    a. Define survey distribution/timeline for response
IV. Review previous Mitigation Strategies
    a. Update status/timeline
V. Future Conferences and activities
    a. June 2, 2022 from 1-3 pm planning team
    b. July 28, 2022 from 10 am -12 pm planning team
    c. August 2022 – target to hold public input meetings
VI. Questions/Comments
VII. Adjournment


Green Co Hazard Mitigation Plan Meeting - Meeting
File
Meeting
Insert
Format Text
Review
Help
Tell me what you want to do
Cancel Meeting
Copy to My Calendar
Actions
Appointment
Scheduling
Tracking
Show
Send to OneNote
OneNote
Contact Attendees
Attendees
Busy
Recurrence
None
Time Zones
Options
Categorize
Tags
Add a meeting
Google Meet
No responses have been received for this meeting.
Send Update
From
melissa@pre-emergency.com
To...
Tanna Mckeon; qziegler@greensheriff.com; berb@monroefiredept.com; awiegel@greencountywi.org; rsommers@greencountywi.org; cnarveson@greencountywi.org; publicworks@albanywi.org; publicworks@cityofbrodheadwi.us; agerber@cityofmonore.org;
Subject
Green Co Hazard Mitigation Plan Meeting
Location
Green County Sheriff's Office, Training Room, 2827 6th Street in Monroe
Start time
Thu 7/28/2022
10:00 AM
All day event
End time
Thu 7/28/2022
12:00 PM
Attached
28 July Planning Meeting agenda.doc
84 KB
Good Morning,
Attached is the agenda for our next hazard mitigation planning meeting that is scheduled for tomorrow (July 28th) from 10 am to 12 pm at Green County Sheriff's Office, Training Room, 2827 6th Street in Monroe. You are all welcome and please feel free to bring anyone else you feel would have beneficial information or our plan update. If you cannot attend, please send a designee. We look forward to your participation in the plan update process. If you have any questions please let me know and enjoy the day!
Thank you,
Melissa Waller, MA, MEP
PRE-EMERGENCY PLANNING, LLC
Cell: 608-697-0143
PO Box 75, Lodi, WI 53555

PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Thursday, July 28, 2022
Time: 10:00 am – 12:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

	Name	Department/Agency Name
1.	Tanna McKeon	Green Co. Emerg Mgmt
2.	Grant Ziegler	GCEM
3.	Melissa Weiler	PEP
4.	Chris Narveson	Green County Hwy
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		

1

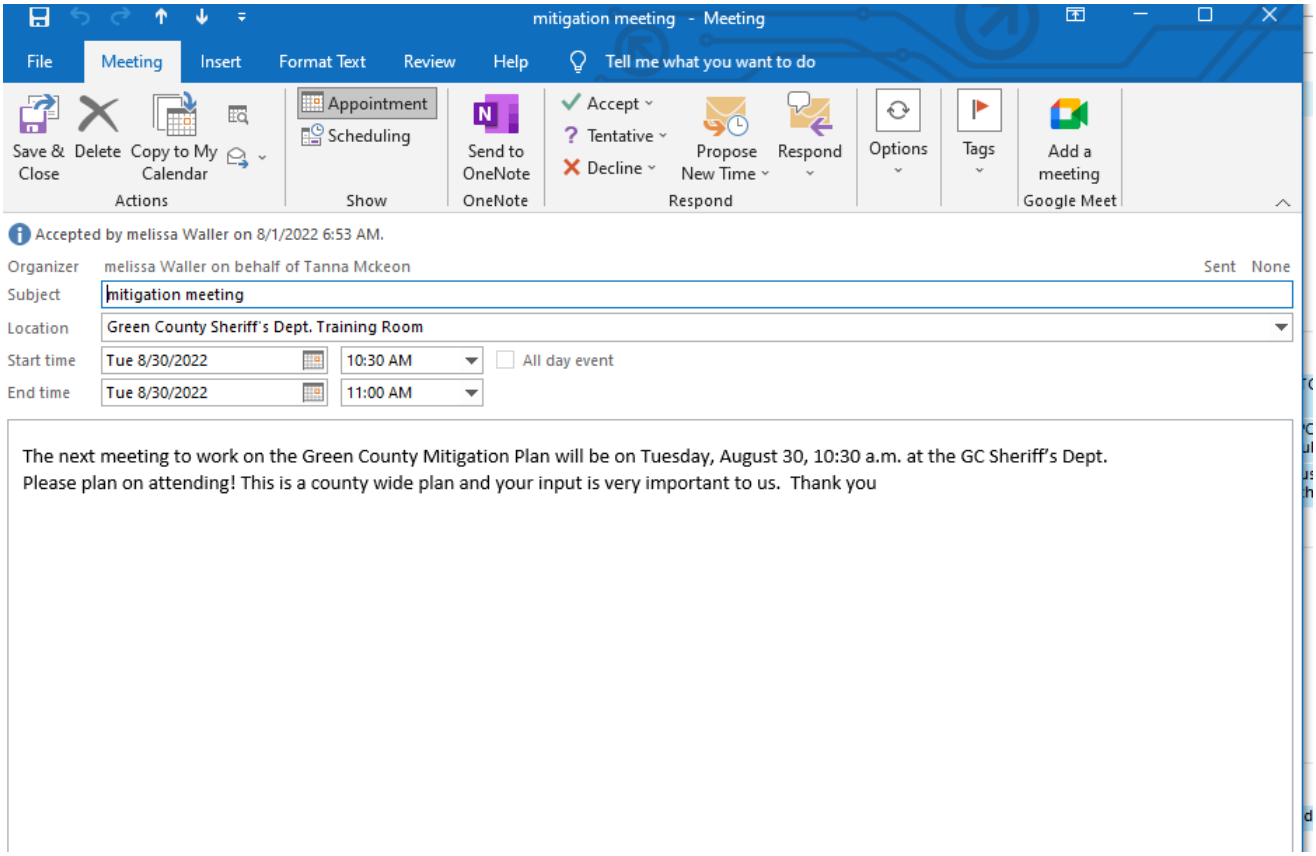
PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Thursday, July 28, 2022
Time: 10:00 am – 12:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

Planning Meeting Discussion Items

I. Welcome and Introductions
II. Project Status Update
III. Review Hazard Preparedness and Mitigation Survey Outcomes
IV. Review Grant/Program Funded Projects
    a. Update/Status
V. Future Conferences and activities
    a. August 2022 – hold final plan review prior to public meetings
    b. September 2022 – target to hold public input meetings
VI. Questions/Comments
VII. Adjournment


mitigation meeting - Meeting
File
Meeting
Insert
Format Text
Review
Help
Tell me what you want to do
Save & Close
Delete
Copy to My Calendar
Actions
Appointment
Scheduling
Show
Send to OneNote
OneNote
Accept
Tentative
Decline
Propose New Time
Respond
Respond
Options
Tags
Add a meeting
Google Meet
Accepted by melissa Waller on 8/1/2022 6:53 AM.
Organizer
melissa Waller on behalf of Tanna Mckeon
Sent
None
Subject
mitigation meeting
Location
Green County Sheriff's Dept. Training Room
Start time
Tue 8/30/2022
10:30 AM
All day event
End time
Tue 8/30/2022
11:00 AM
The next meeting to work on the Green County Mitigation Plan will be on Tuesday, August 30, 10:30 a.m. at the GC Sheriff's Dept.
Please plan on attending! This is a county wide plan and your input is very important to us. Thank you

PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Tuesday, August 30, 2022
Time: 10:00 am – 12:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

	Name	Department/Agency Name
1.	Melissa Waller	Pre Emergency Planning
2.	Tanna McKeon	Green Co. Emerg. Mgmt.
3.	Drake Daily	Village of New Glarus
4.	ALAN GERBER	CITY OF MONROE PUBLIC WORKS
5.	Lyle Spilde	Village of Brooklyn
6.	Rich Vogel	City of Brodhead
7.	Rob Sommers	Green Co. Land Records
8.	Chris Narveson	Green Co Hwy
9.	GARY ZIEGLER	EMERGENCY MANAGEMENT
10.		
11.		
12.		
13.		
14.		

1

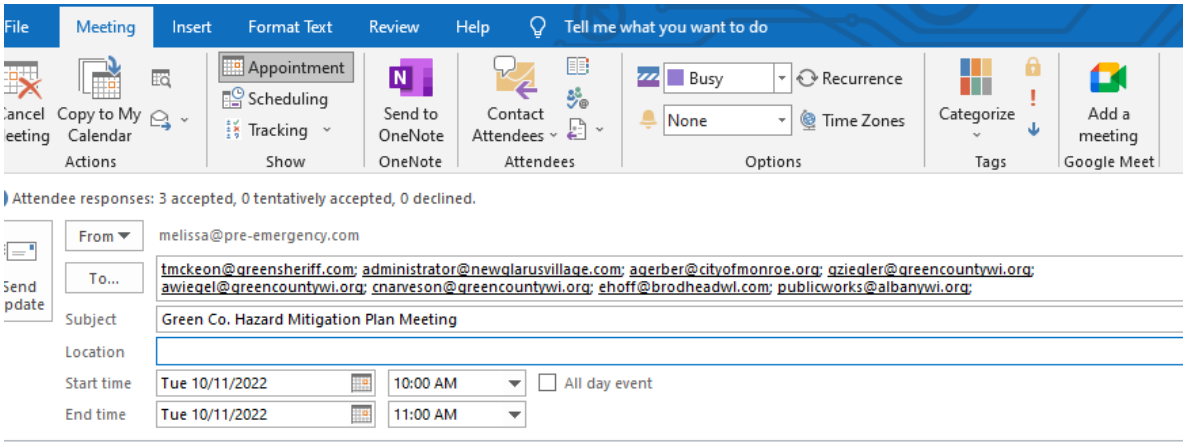
PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Tuesday, August 30, 2022
Time: 10:00 am – 12:00 pm
Location: Green Co. Sheriff's Dept. Training Room, 2827 6th St., Monroe

Planning Meeting Discussion Items

I. Welcome and Introductions
II. Project Status Update
III. Review Public Input Process
    a. Notice
    b. PowerPoint
IV. Future Conferences and activities
    a. Public Input Meeting: September 28, 2022
        i. Monroe 1-3 pm location TBD
        ii. New Glarus 4-6 pm location TBD
    b. Planning Team Meeting to review any public input and final draft of plan: TBD
V. Questions/Comments
VI. Adjournment



oin with Google Meet: https://meet.google.com/ghq-hbah-ydd
US) +1 475-221-6304 PIN: 821641882#
More phone numbers: https://tel.meet/ghq-hbah-ydd?pin=8515266828880&hs=7

Please do not edit this section.

PRE-EMERGENCY PLANNING, LLC

Green County Hazard Mitigation Plan Update
Planning Meeting

Date: Tuesday, October 11, 2022
Time: 10:00 am – 11:00 am
Location: Virtual

Planning Meeting Discussion Items

I. Welcome and Introductions
II. Update public input meetings
III. Review/finalize draft plan
IV. Discuss next steps
V. Questions/Comments
VI. Adjournment

Appendix C: Public Meetings/Input

Green County believes in the importance of gathering public input from interested parties in the community. To achieve this goal, the Emergency Management Office took every opportunity available to use various methods to publicize the opportunity for people to participate in the planning process and to gather input from interested parties.

One of the main ways people were made aware of the plan was the publication of a brochure (following) that was widely distributed in the public buildings around the community. The brochure was also provided to all municipalities within Green County for public distribution. The purpose of this brochure was to provide a general overview of the mitigation planning process, the impetus for planning and the scope of the final result.

GOVERNMENTAL & PUBLIC INPUT

Planning creates a way to solicit and consider input from diverse interests. Successful community mitigation begins with a commitment from government officials throughout the county.

Involving stakeholders is essential to building community-wide support for the plan. In addition to emergency managers, the planning process involves other government agencies (e.g., zoning, floodplain management, public works, community and economic development), businesses, civic groups, environmental groups and schools. Vital information provided by these groups helps insure that the plan is workable within the framework of the community's priorities.

ADOPTION OF THE PLAN

Local units of government participating in a multi-jurisdictional planning process must adopt the final plan for the municipality to be eligible for future mitigation funds including grants available through FEMA. **Local units (i.e., towns, villages, cities) that do not participate would be ineligible to receive such funds** until such time that they meet these requirements and adopt a plan.

HISTORY

Since 1993 more than 400 disasters have occurred in the United States, affecting communities in all 50 states, costing the country over **$500 million dollars per WEEK and killing over 24,000 people**.

MITIGATION PLANNING FACTS

► A recent study by the Multi-hazard Mitigation Council shows that each dollar spent on mitigation saves society an average of four dollars.

► The rigorous building standards adopted by 20,000 communities across the country are saving the nation more than $1.1 billion a year in prevented flood damages.

► Hazard mitigation plans and projects reduce overall risks to the population and structures while also reducing reliance on funding from actual disaster declarations.

► Since 1993 more than 400 disasters have occurred in the United States, affecting communities in all 50 states, costing the country over **$500 million dollars per WEEK and killing over 24,000 people**.

NOTES: _____

_____

_____

Pre-Disaster Mitigation Planning

Creating Safe,

Sustainable

Communities

What is Hazard Mitigation?

Hazard mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards.

Floods, ice storms, tornadoes and forest/wild fires – these are all functions of the natural environment and only become hazardous when they threaten our "built" environment with destruction. These hazards will occur one day. When this happens, the results can be appreciably different from past outcomes if our community takes action today.

Risk Reduction

The goal of risk reduction is to reduce the risk to life and property, which includes existing structures and future construction, in the pre- and post-disaster environments. This is achieved through regulations, local ordinances, land use and building practices and mitigation projects that reduce or eliminate long-term risk from hazards and their effects.

Why Develop A Plan?

Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repeated damage. The planning process is as important as the plan itself. It creates a framework for risk-based decision-making to reduce damages to lives, property and the economy from future disasters.

State, tribal and local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act of 2000, provides the legal basis for state, local and tribal governments to undertake a risk-based approach to reducing risks from natural hazards through mitigation planning.

Like many other people, the residents of Merkel, Texas didn't think much about flooding. Besides, it had not flooded in Merkel for 45 years. It wasn't until the heavy rains in the summer of 2007 that residents realized flooding can hit anyone, at any time. After the flooding finally subsided, officials knew they had to do something: mitigate.

Required Information

- Flood maps
- Identification of potential hazards
- History of occurrences
- Hazard impact projections
- Location of critical facilities
- Identification of high-risk facilities (schools, fire station, nursing homes, etc.)
- Location of repetitive loss structures
- Development & prioritization of mitigation projects
- Other materials as identified

Hazard Mitigation Planning Process

1. Organize Resources- From the start, communities should focus the resources needed for a successful mitigation planning process. Essential steps include identifying and organizing interested members of the community, particularly those with the technical expertise required during the planning process.

2. Assess Risks- Communities next need to identify the characteristics and potential consequences of natural hazards. It is important to understand how much of the community can be affected by specific hazards and what the likely impacts would be for important community assets.

3. Develop a Mitigation Plan- Armed with an understanding of the risks posed by natural hazards, communities need to determine what their priorities should be and then look at possible ways to avoid or minimize the undesired effects. The result is a natural hazard mitigation plan and strategy for implementation.

4. Implement the Plan & Monitor Progress- Communities can bring the plan to life in a variety of ways ranging from implementing specific mitigation projects to changes in the day-to-day operation of the local government. To ensure the success of an on-going program, it is critical that the plan remains effective. Thus, it is important to conduct periodic evaluations and make revisions as needed.

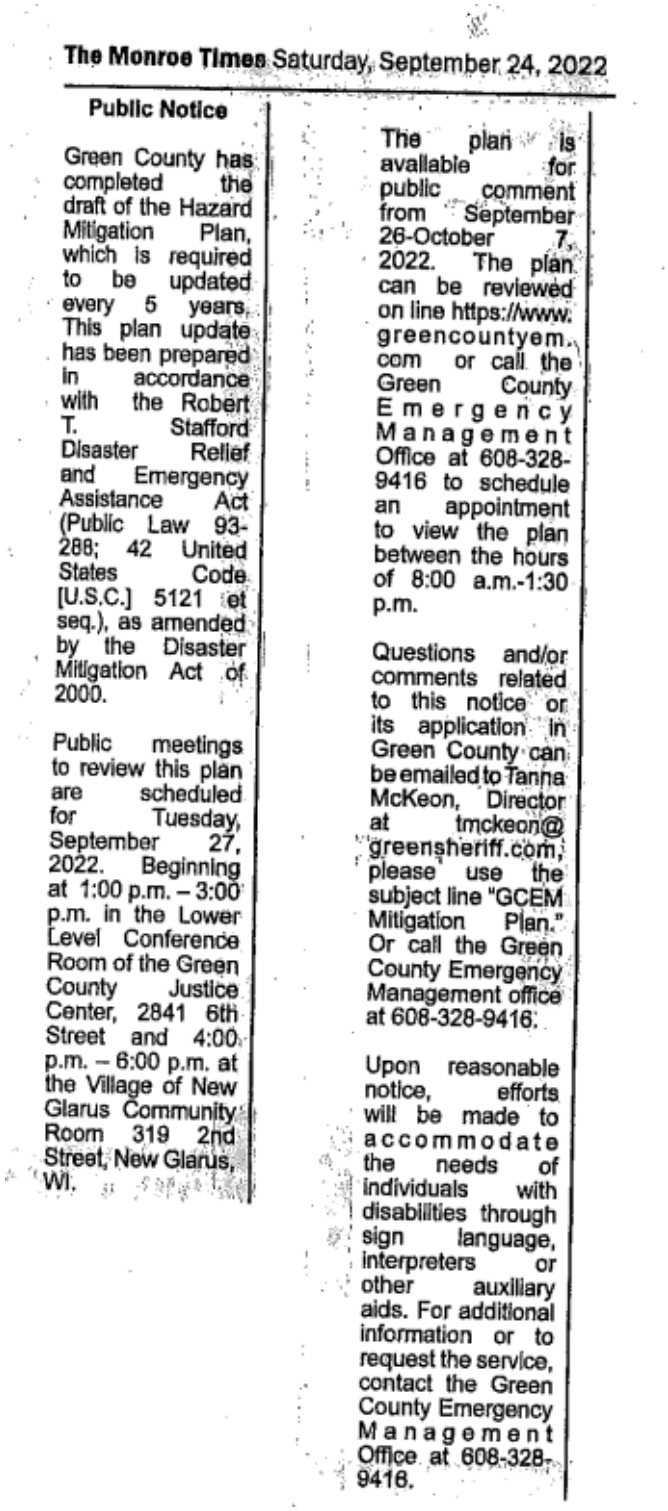
The following email was also sent out to all of the Towns, municipalities, Department of Public Works, county board chair and 1st, 2nd chairs to solicit feedback on the draft plan.

From: Tanna Mckeon <tmckeon@greencountywi.org>
Sent: Thursday, September 29, 2022 7:50 AM
To: Town of Jordan Chair <laurenmeinert54@gmail.com>; Town of Clarno Chair <tracymartinsigner@gmail.com>; Town of Washington Clerk <clerktownof@tds.net>; Town of Adams Clerk <adamstownclerk@gmail.com>; Town of Monroe Clerk/Treasurer <townofmonroe@tds.net>; Town of Albany Chair <asalbanytownboard@yahoo.com>; Town of Exeter Chair <clerk@townofexeter.com>; Town of Monroe Chair <duanecarlzimm@yahoo.com>; Town of Clarno Clerk <townofclarno@tds.net>; Town of Adams Chair <djholland44@yahoo.com>; Town of Jefferson Chair <hmandel@greencountywi.org>; Town of Washington Chair <nannettehilliard@gmaiil.com>; Town of Mt. Pleasant Chair <kristen@tds.net>; Town of York Clerk Treasurer <clerk-treasurer@townofyork.org>; Chris Narveson <cnarveson@townofnewglaruswi.gov>; Town of Jordan Clerk <bjr21@yahoo.com>; Town of Cadiz Clerk <cadiz.clerk@gmail.com>; Town of Albany Clerk <dhalbanytownboard@gmail.com>; Town of Cadiz Chair <kengoodman2002@yahoo.com>; Town of Sylvester Chair <sylvesterchair@outlook.com>; Clerk Treasurer <clerk@townofnewglaruswi.gov>; Town of York Chair <chairman@townofyork.org>; Town of Brooklyn Chair <pennington.townofbrooklyn@gmail.com>; Town of Decatur Clerk/Treasurer <clerktreasurer@townofdecatur.com>; Town of Brooklyn Clerk <clerk@brooklynwisconsin.org>; Town of Spring Grove Chair <tsgrove.chairman@gmail.com>; Town of Jefferson Clerk/treasurer <jeffersontcc@tds.net>; Allen Schneider <diamond_53520@yahoo.com>; Town of Mt. Pleasant Town Clerk <townclerk@townofmtpleasantwi.com>; Town of Spring Grove Clerk <deb.cline@kuhn.com>; Village of Albany President <kblumer.albanywi@gmail.com>; Village of Albany Clerk <villageclerk@albanywi.org>; Village of New Glarus Administrator <administrator@newglarusvillage.com>; City of Brodhead Mayor <cjones@cityofbrodheadwi.us>; Village of Monticello President <l.miller@vi.monticello.wi.us>; Village of Belleville Clerk <rmcgee@villageofbelleville.com>; Village of Monticello Clerk/Treasurer <monticello.clerk@gmail.com>; Village of Belleville Adminstrator <jodell@villageofbelleville.com>; City of Brodhead Clerk <cityclerk@cityofbrodheadwi.us>; Village of Browntown President <jaynoble4974@gmail.com>; Village of Belleville President <dyurs@villageofbelleville.com>; City of Monroe Administrator <dlothspeich@cityofmonroe.org>; City of Monroe Mayor <mayor@cityofmonroe.org>; Nadine <president@brooklynwi.gov>; Village of Browntown Clerk/Treasurer <browntown.clerk@tds.net>; City of Monroe Clerk/Treasurer <brindy@cityofmonroe.org>; Village of New Glarus President <rtruttmann@newglarusvillage.com>; Clerk Strause <clerk@brooklynwi.gov>; Rich Vogel <publicworks@cityofbrodheadwi.us>; Allan Gerber <agerber@cityofmonroe.org>; Leif Spilde <spilde@brooklynwi.gov>; Brandon Hendrickson <bhendrickson@greencountywi.org>; Albany Public works <publicworks@albanywi.org>; Chris Narveson <cnarveson@greencountywi.org>; Dan Silvernale <dsilvernale@villageofbelleville.com>; Joe Cockroft <pwdirector@newglarusvillage.com>; Ed Hoff <ehoff@brodheadwl.com>; Kyle Klopfenstein <kklopfenstein@cityofmonroe.org>; Kevin Komprood <monticellowaterutil@tds.net>; Jerry Guth <jguth@greencountywi.org>; Kristi Leonard <kleonard@greencountywi.org>; Jody Hoesly <jhoesly@greencountywi.org>; Thomas Moczynski <moczynskit@greensheriff.com>; Jeff Skatrud <skatrudj@greensheriff.com>; Richard Thoman <rthoman@greencountywi.org>; Joe Snow <jsnow@greencountywi.org>; Mark Gundlach <mgundlach@greencountywi.org>; Isaiah Carlson <icarlson@greencountywi.org>; Dave Tschudy <dtschudy@greencountywi.org>

Green County Emergency Management has completed the draft of the Hazard Mitigation Plan update, which is required every 5 years. We are required to have this plan in place, along with acceptance by the towns, villages and cities in order to apply for mitigation grants. After FEMA approves the plan I will then be contacted the towns, villages, cities and the county board to accept and approve the plan. At this time we taking public comments on the plan until October 7. This is a large plan and it would be easier to view or download it from GCEM's website at tttps://www.greencountyem.com. The link is on the homepage.

Or you can all the office at 608-328-9416 to schedule an appointment to view the plan between the hours of 8:00 a.m. – 1:30 p.m. Comments can be emailed to tmckeon@greensheriff.com, please use the subject line "GCEM Mitigation Plan" or call the office. Thank you for taking the time to review this.

The following public notice was placed in The Monroe Times[116] to advertise the public input meetings.



The Monroe Times Saturday, September 24, 2022

Public Notice

Green County has completed the draft of the Hazard Mitigation Plan, which is required to be updated every 5 years. This plan update has been prepared in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288; 42 United States Code [U.S.C.] 5121 et seq.), as amended by the Disaster Mitigation Act of 2000.

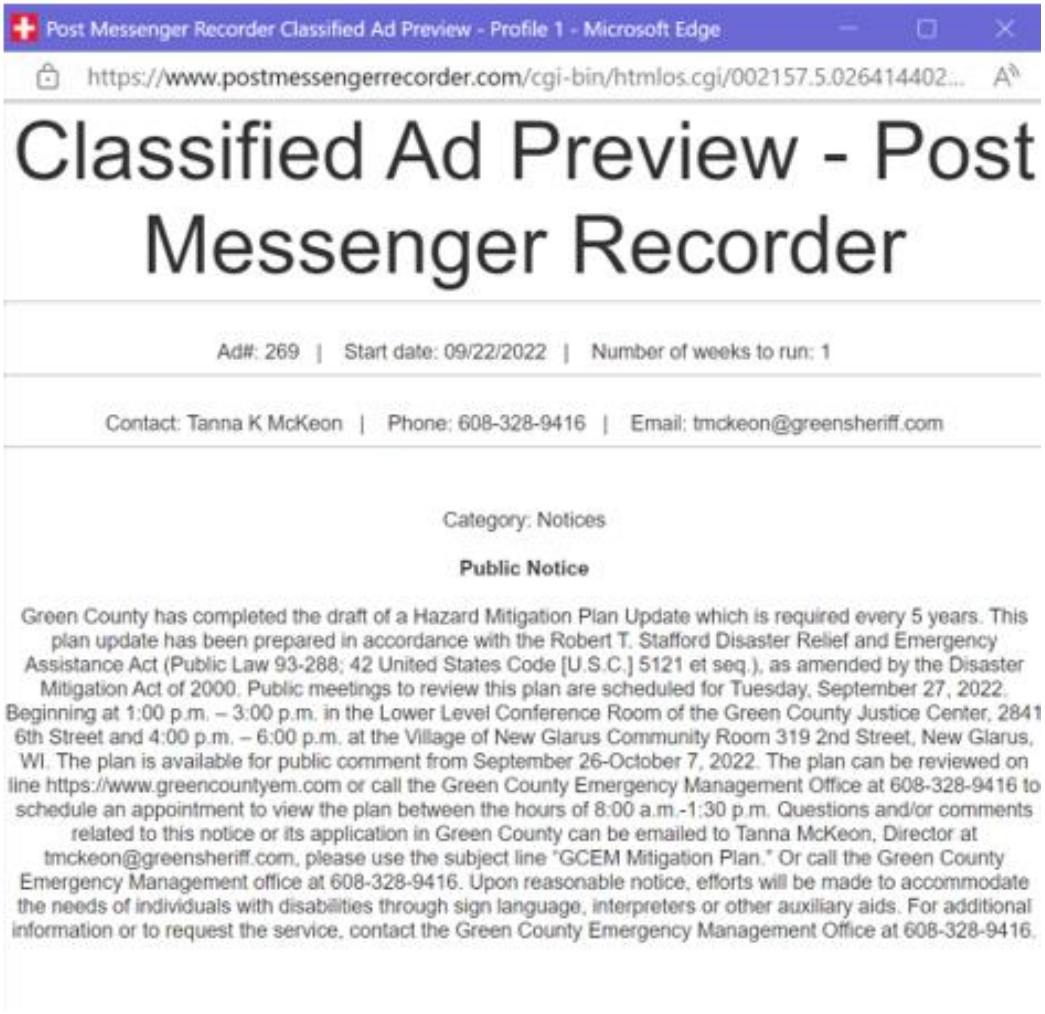
Public meetings to review this plan are scheduled for Tuesday, September 27, 2022. Beginning at 1:00 p.m. – 3:00 p.m. in the Lower Level Conference Room of the Green County Justice Center, 2841 6th Street and 4:00 p.m. – 6:00 p.m. at the Village of New Glarus Community Room 319 2nd Street, New Glarus, WI.

The plan is available for public comment from September 26-October 7, 2022. The plan can be reviewed on line https://www.greencountyem.com or call the Green County Emergency Management Office at 608-328-9416 to schedule an appointment to view the plan between the hours of 8:00 a.m.-1:30 p.m.

Questions and/or comments related to this notice or its application in Green County can be emailed to Tanna McKeon, Director at tmckeon@greensheriff.com, please use the subject line "GCEM Mitigation Plan." Or call the Green County Emergency Management office at 608-328-9416.

Upon reasonable notice, efforts will be made to accommodate the needs of individuals with disabilities through sign language, interpreters or other auxiliary aids. For additional information or to request the service, contact the Green County Emergency Management Office at 608-328-9416.

[116] https://themonroetimes.com/local-news/countys-hazard-mitigation-plan-available-for-review/



Post Messenger Recorder Classified Ad Preview - Profile 1 - Microsoft Edge

https://www.postmessengerrecorder.com/cgi-bin/htmlos.cgi/002157.5.026414402...

Classified Ad Preview - Post Messenger Recorder

Ad#: 269 | Start date: 09/22/2022 | Number of weeks to run: 1

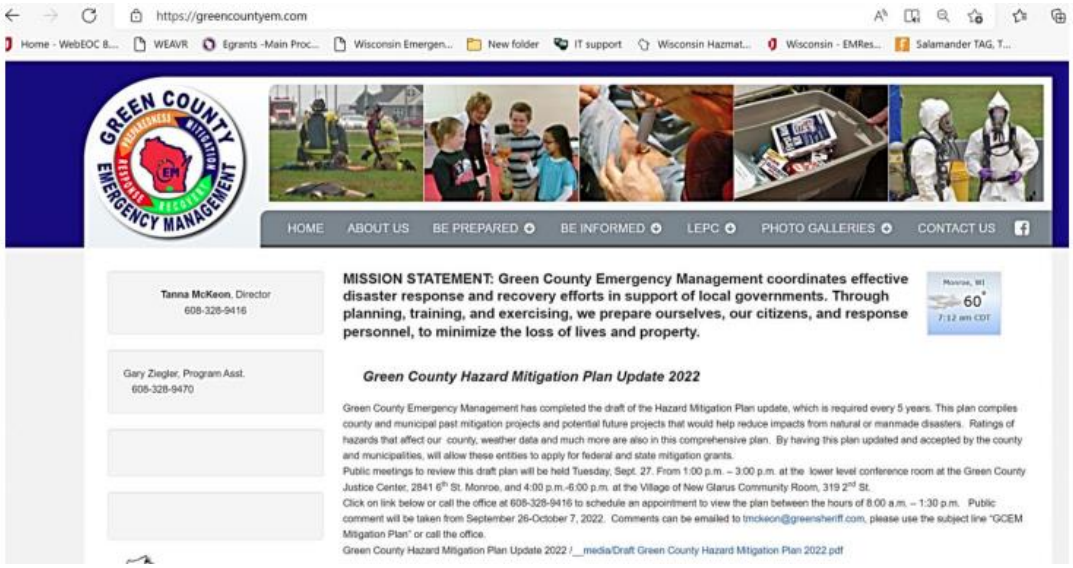
Contact: Tanna K McKeon | Phone: 608-328-9416 | Email: tmckeon@greensheriff.com

Category: Notices

Public Notice

Green County has completed the draft of a Hazard Mitigation Plan Update which is required every 5 years. This plan update has been prepared in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288; 42 United States Code [U.S.C.] 5121 et seq.), as amended by the Disaster Mitigation Act of 2000. Public meetings to review this plan are scheduled for Tuesday, September 27, 2022. Beginning at 1:00 p.m. – 3:00 p.m. in the Lower Level Conference Room of the Green County Justice Center, 2841 6th Street and 4:00 p.m. – 6:00 p.m. at the Village of New Glarus Community Room 319 2nd Street, New Glarus, WI. The plan is available for public comment from September 26-October 7, 2022. The plan can be reviewed on line https://www.greencountyem.com or call the Green County Emergency Management Office at 608-328-9416 to schedule an appointment to view the plan between the hours of 8:00 a.m.-1:30 p.m. Questions and/or comments related to this notice or its application in Green County can be emailed to Tanna McKeon, Director at tmckeon@greensheriff.com, please use the subject line "GCEM Mitigation Plan." Or call the Green County Emergency Management office at 608-328-9416. Upon reasonable notice, efforts will be made to accommodate the needs of individuals with disabilities through sign language, interpreters or other auxiliary aids. For additional information or to request the service, contact the Green County Emergency Management Office at 608-328-9416.

The following was posted on the Green County Emergency Management website to solicit public input and feedback on the draft plan:



https://greencountyem.com

HOME | ABOUT US | BE PREPARED | BE INFORMED | LEPC | PHOTO GALLERIES | CONTACT US

Tanna McKeon, Director
608-328-9416

Gary Ziegler, Program Asst.
608-328-9470

MISSION STATEMENT: Green County Emergency Management coordinates effective disaster response and recovery efforts in support of local governments. Through planning, training, and exercising, we prepare ourselves, our citizens, and response personnel, to minimize the loss of lives and property.

Green County Hazard Mitigation Plan Update 2022

Green County Emergency Management has completed the draft of the Hazard Mitigation Plan update, which is required every 5 years. This plan compiles county and municipal past mitigation projects and potential future projects that would help reduce impacts from natural or manmade disasters. Ratings of hazards that affect our county, weather data and much more are also in this comprehensive plan. By having this plan updated and accepted by the county and municipalities, will allow these entities to apply for federal and state mitigation grants.

Public meetings to review this draft plan will be held Tuesday, Sept. 27. From 1:00 p.m. – 3:00 p.m. at the lower level conference room at the Green County Justice Center, 2841 6th St. Monroe, and 4:00 p.m.-6:00 p.m. at the Village of New Glarus Community Room, 319 2nd St.

Click on link below or call the office at 608-328-9416 to schedule an appointment to view the plan between the hours of 8:00 a.m. – 1:30 p.m. Public comment will be taken from September 26-October 7, 2022. Comments can be emailed to tmckeon@greensheriff.com, please use the subject line "GCEM Mitigation Plan" or call the office.

Green County Hazard Mitigation Plan Update 2022 /__media/Draft Green County Hazard Mitigation Plan 2022.pdf

One person attended the public input meeting held in Monroe (see sign in sheet below). There were no attendees at the New Glarus public input meeting. There were not suggested updates to the plan.

PRE-EMERGENCY PLANNING, LLC

Green County Disaster Mitigation Plan Public Input Meeting

Date: Tuesday, September 27, 2022
Time: 1:00 p.m. – 3:00 p.m.
Location: Green County Justice Center, 2841 6th Street, Monroe, WI

	Name (Printed)	Signature
1.	Chris Narveson	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

1

Appendix D: Approval and Adoption Letters

Appendix E: Summary of Mitigation Strategies

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
All Hazards	Continue to promote the increased use of National Oceanic and Atmospheric Administration (NOAA) weather radios.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CIBrodhead and Monroe; VI Albany, Belleville,Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn,Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan,Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	The county conducts give-away contests on Facebook and during community events; these activities will continue. In 2021 weather radios were given away at tornado spotting classes.
	RACES to provide repeaters at community locations (through Public Health grant 10 years ago) to support redundant communications	Unknown	EM Dept.	Ongoing	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Requires purchase of new equipment
	Add road sensor to Highway 69 overpass during upgrade	Unknown	WI DOT	2018	High	Green County	This is DOT property, their decision and responsibility.
	*Continue to add/update Emergency Management Department links on the existing county and local web sites (e.g., ARC, Homeland Security/FEMA/NFIP, WEM) especially focusing on preparedness bulletins. Publicize the websites to show the community what is available.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	The county currently does not put warnings online since there is no 24/7 staffing to do it. They do put preparedness materials online.
	Initiate or expand use of Nixle for public safety alerts	Covered by Dept. annual budget	Green Co. SO, Brodhead PD, Brooklyn, Public Health Green Co. EM	Ongoing	Medium	Green County and all municipalities	Continuing to encourage citizens to register for Nixle.
	Consider the addition of another water tower to support fire suppression.	Unknown	VI New Glarus	2024	Medium	VI New Glarus	The renovation of the existing water tower was complete in 2022. The addition of a 2nd water tower to enhance fire suppression capabilities will be complete in 2024.
	Update 911 to NextGen9-1-1 to enhance capabilities to transmit, receive, process, transfer, dispatch, use, and store both voice and data associated with a 9-1-1 call.	Unknown	Green Co. SO & WEM	2030	Medium	Green Co. and all municipalities	The Department of Military Affairs' Office of Emergency Communications (OEC) is responsible for the creation, operation, maintenance, and oversight of a statewide ESInet that interconnects all public safety answering points in the state to begin the implementation of NG9-1-1.

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
Drought and Dust Storms	County should be prepared to provide information to farmers during times of drought.	Covered by Dept. annual budget	UW-Ext. and USDA	As needed	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	DNR gives assistance and permits for stream pumping for farms. This mitigation measure is ongoing.
	Inform residents on water conservation	Covered by Dept. annual budget	UW-Ext. and USDA	Ongoing	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	This mitigation measure is ongoing.
	Inform farmers on purchasing crop insurance.	Covered by Dept. annual budget	UW-Ext. and USDA	Ongoing	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Materials available and provided in Public Service Announcements. This mitigation measure is ongoing.
Fog	Assist motorists in the fog by notifying and warning of the risks.	Costs vary	Law Enforcement	Ongoing	Very Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Specifics may include: • Fog area warnings (released by the NWS and broadcast by local media) – provided via Nixle • School delays, which are determined by individual school districts and released to local media • Road warnings/flashers in areas with higher than average risk. Public works and law enforcement at the state, county and local level will continue to monitor and place warnings as identified

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
Wildfire	Continue to provide outreach efforts to homeowners on protecting homes and structures from wildfires.	Costs vary	Local Fire Departments	Ongoing	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually during Fire Safety Week in Sept. or Oct.
	Provide ample training for volunteer fire fighters for larger fires.	Costs vary	Local Fire Departments and EM Dept.	Ongoing	Low	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Look to regularly schedule training every 2-3 years. DNR training conducted in March 2016 in Blanchardville
Flooding and Dam Failure	*Review and update links on the EM Dept. website as necessary for flood preparedness material.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New	This is conducted on an annual basis.
	*All municipalities maintain association with the National Flood Insurance Program (NFIP)	Covered by Dept. annual budget		Ongoing	High	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	This is conducted on an annual basis.
	Investigate a possible road elevation project for County Highway EE near Pratt Road.	Covered by Dept. annual budget	County Highway	2024	Medium	VI Monticello andTN Mount Pleasant	This roadway is regularly coveredby water as the area is a wide, flatfloodplain that takes some time to drain. There has been dicussion on this activity but no action at this time.
	Investigate a possible retaining wall along the Sugar River in VI Albany to prevent erosion.	Covered by Dept. annual budget	VI Albany	2024	High	Green County, VI Albany	Make handicap-accessible fortourists/tubers
	Explore options to re-size and repair the stormwater pond in CI Brodhead.	As funding available	Land Use and Zoning and CI Brodhead	2025	High	Green County, CI Brodhead	Pond (built 20 years ago) is undersized, especially as community grows. Engineers have developed plans but it has not occurred at this time.

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
Flooding and Dam Failure	Investigate addition of approximately10 ponds for CI Monroe.	$500K	Land Use and Zoning and CI Monroe	2025	High	Green County, CI Monroe	Needed to meet DNR regulationsfor suspended solids. 2-3 ponds have been completed, additional are planned for.
	*Explore options for buyouts/ elevations, such as TN Cadiz, unincorporated Martin Town: homes on the bank of the Pecatonica River on Martin Town Road	Covered by Dept. annual budget	Land Use and Zoning and EM Dept.	2025	High	Green County, TN Cadiz	Currently working on buyout of Martin Town Road home
	Explore options for reducing flooding from the Pecatonica River.	Covered by Dept. annual budget	Land Use andZoning, Browntown, TN Cadiz	2025	High	Green County, VI Browntown, TN Cadiz	County Highway M in VI Browntown, Babler Rd. in TN Cadiz
	*Provide information to citizens about the purchase of flood insurance.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville,	Information available on the website. This is an ongoing mitigation measure.
	Explore options for making earthen dam between the west side of Decatur Lake from the dam to the head gates more robust.	Covered by Dept. annual budget		2025	Medium		Earthen dam is deteriorating; city is maintaining but it is a concern. Downstream are campgrounds and a field. The cost of this is prohibiting actions.
Severe Temperatures	Continue public informational campaigns about severe weather on the website and during Winter and Heat Awareness Weeks.	Covered by Dept. annual budget	EM Dept. and Health	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed in annual campaigns in fall and spring. This mitigation measure is ongoing.
	Monitor impact of climate change tocommunities.	Covered by Dept. annual budget	EM Dept. andHealth	Ongoing	Medium	Green County	This mitigation measure is ongoing.
Storms: Hail	Make hail storm safety materials available on the website and during severe weather week.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually as needed.

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
Storms: Lightning	Make lightning safety materials available on the website and during severe weather week.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually as needed.
Storms: Thunderstorm	Make thunderstorm safety materials available on the website and during severe weather week.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually as needed.
	Provide county mobile command postto municipalities as needed and when possible, for use during events.	Covered by Dept. annual budget	EM Dept. and Law enforcement	Ongoing	Medium	Green County, CI Monroe, CI Brodhead	The command post is available for use by any municipality or first response agency.
Storms: Tornadoes and High Winds	Consider a shelter at Cardinal Estates (100+ trailers).	$10,000	CI Brodhead	2025	Low	CI Brodhead	As funding becomes available
	Consider shelters for mobile home parks and municipalities.	Unknown	CI Monroe	2025	Medium -High	CI Monroe	As funding becomes available
	Update early warning sirens	Unknown	CI Monroe	2027-2030	Medium	CI Monroe	The city has added 1-2 new sirens but needs to upgrade several existing sirens. Plans are to add one at 27th Street and 20th Ave and one near the Badger State Ethanol and to replace all non-rotating sirens.
	Promote tornado awareness, including safety measures.	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually during Tornado Awareness Week in April. Information will be included on the website for homes, schools, and business safety measures. TN York hit with 100 mph derecho spring 2015. 2014: four tornadoes hit CI Brodhead, TN York, and others.
Storms: Winter	Promote winter hazards awareness, including home and travel safety measures (including website.)	Covered by Dept. annual budget	EM Dept.	Ongoing	Medium	Green County; CI Brodhead and Monroe; VI Albany, Belleville, Brooklyn, Browntown, Monticello, and New Glarus; and TN Adams, Albany, Brooklyn, Cadiz, Clarno, Decatur, Exeter, Jefferson, Jordan, Monroe, Mount Pleasant, New Glarus, Spring Grove, Sylvester, Washington, and York	Completed annually during Winter Weather Awareness Week in November.

Summary of Mitigation Strategies							
Hazard Type	**Mitigation Measures**	**Costs of Project**	**Responsible Management**	**Project Timetable**	**Project Priority**	**Community(ies) Benefitting**	**Comments**
Utility Failure	Investigate options for replacing/upgrading the generator at CI Brodhead wastewater facility. Consider the addition of a generator for PD and City Hall.	Covered by Dept. annual budget	CI Brodhead	2023	High	CI Brodhead	City services/EM site is located at the wastewater facility building. The generator is 20 years old and was only installed for wastewater backup. The city is in the process of getting a generator the police department and city hall. Anticipated to be complete in 2023.
Cybersecurity/ Technological Hazards	Continue to promote cybersecurity awareness and provide resources to cyber security and response. Encourage municipalities to obtain cyber-attack insurance.	Covered by Dept. annual budget	Green County	Ongoing	Medium	Green County	The County has formed a cyber incident response team to is to provide a structured and systematic incident response process for all information security incidents that affect any of Green County's information technology ("IT") systems, network, or data, including Green County's data held or IT services provided by third-party vendors or other service providers. New Glarus has cyber attack insurance and has a two factor authentication for remote access to enhance security.

Mitigation priorities are based on time, fiscal ability, impact/consequence and risk as illustrated on the community surveys and planning team discussions. The priorities for Green County mitigation efforts have not changed since the previous plan update. However, there has been additional considerations for cybersecurity identified as a medium priority within this plan update. Cybersecurity is coupled with cyber redundancies within this plan, illustrating the desire to include additional redundancies in technology mitigation strategies (i.e., notification and warning, public safety, etc.) Cybersecurity was not something evaluated in the previous plan and should continue to be prioritized in future hazard mitigation analysis.

ARC = American Red Cross CI = City
CO HWY Dept. = County Highway Department
DNR = Department of Natural Resources
DPW = Department of Public Works
EM Dept. = Green County Emergency Management Department
EOC = Emergency Operations Center
FEMA = Federal Emergency Management Agency
FSA = Farm Service Agency
LID = Green County Land Information Department
LTPO = Long-Term Power Outage
LWCD = Green County Land and Water Conservation Department
PH = Public Health Department
P&Z = Green County Planning & Zoning Department
NOAA = National Oceanic and Atmospheric Administration
SO = Sheriff's Office
TN = Township
UW Ext = University of Wisconsin – Green County University of Wisconsin Extension Office
VI = Village
* Designates an element that supports the NFIP

Appendix F: Report on Previous Plan Mitigation Strategies

Hazard	Implementation Actions/Strategies	Update*
All Hazards	Upgrade area early warning sirens. The city has added 1-2 new sirens but needs to upgrade several existing sirens. Plans are to add one at 27th street and 20th avenue, one near Badger State Ethanol and to replace all of the existing non- rotating sirens over the next 5 to 7 years.	As of 2022 all Green Co. municipalities have updated sirens.
	Replace 911 system. TDS does not support the current system. The System is an Airbus Vesta Next Generation 911 system which will process all 911 land and wireless calls originating in Green County, except for the City of Brodhead, which will continue to take 911 land line calls in the 897-phone exchange area. The City of Monroe will continue to operate a remote 911 answering position, which is a satellite position of the overall 911 system, at their police department so Monroe PD can dispatch 911 calls within their city. They will also serve as a backup 911 call taking and dispatch location in the event the county 911 center has problems. The system is fully Next Generation capable; meaning it will fully integrate with the anticipated future build out of the digital geo-based 911 Emergency Services Network being explored by the State of Wisconsin.	The new 911 system was operational in December of 2021.
	Explore upgrading towers and repeaters. Old equipment.	As of 2022 towers and repeaters have been upgraded throughout Green Co.
	Initiate or expand use of social media for public safety alerts and informational campaigns.	Throughout the pandemic response social media has become a more regular way to share information from county and local agencies and departments. A majority of law enforcement, county and municipalities have an active social media account.
	Explore a “reverse 911” automatic system.	The county utilizes Nixle to serve as a community notification system, this includes NWS weather warnings.
	Continue to validate emergency response and recovery plans and procedures on an annual basis.	VI of Brooklyn conducts an annual tabletop exercise and includes village partners.
Flooding & Dam Failure	Upgrade the flood gauge on theSugar River in Albany	GCEM and the Army Corp of Engineers provided funding for the equipment and it was installed in 2016.
	Conduct roadside ditch improvementalong County Highway E to reduce flooding in the City of Brodhead. Adda stormwater collection system pumping to the Sugar River	This was completed in 2016.
	Investigate opportunities to improve culverts along County Highway T and Town Center Road in the Sugar River floodplain. Consider the option and the cost to raise the road elevation approximately 18” for 3,000.’	Culverts were installed and the ditches were widened on County Hwy T. This was completed in 2018.
	Repair retaining wall on east side of the Mill Race in CI Brodhead to reduce washouts.	This was completed.
	Village of Monticello had issues with flooding at their Village Hall.	Village hall was moved to reduce flooding risk. Additionally, a new Public Works building is being built.
	Consider development of additional retention ponds .	Town of New Glarus developed a retention pond in 2022 off of Durst Road.
Severe Temperatures	Make Browntown Village Hall available for use during the day as a temperature (cooling/warming) center.	This was completed and offered to the community as a resource, it was not utilized when open and available.

Hazard	Implementation Actions/Strategies	Update*
Storms: Lightning	Investigate possible options for server backup relocation and/or new generator procurement in conjunction with construction of new county government center. Server backups are currently in the basement, which is damp. The existing generator is too small to meet needs during an outage.	A new natural gas generator has been installed at the Sheriff's Office and generators were installed with the construction of the government services building.
Storms: Thunderstorms	Provide storm warnings to event boards. Agencies and municipalities post their events to NWS.	NWS works with county and local agencies and departments to provide detailed weather forecasts and notifications of weather watches or warnings for community events.
	Provide advice to event boardsseeking assistance regarding weather safety.	Green County EM works with agencies/departments or community organization to support special event planning and weather safety upon request.
Storms: Tornadoes and High Winds	Provide information (via website link or outreach letter) to mobile home park owners and park/campground operators about providing permanent storm shelters in the parks. Provide information of tornado risk based on NWS-provided risk bands.	This has been completed.
	Put storm shelter at Willows Manufactured Home Park (TN Cadiz).	This was completed in 2017.
	Put in employee shelter at Badger State Ethanol.	The shelter was purchased by Badger State Ethanol to provide shelter for employees and has been completed.
Utility Failure	Explore options for a portable generator for the CI Brodhead sewer system.	This was completed.
	Explore options for a new generator for the VI Browntown well house.	This was completed.
	Explore options for ensuring that new buildings or renovated buildings have generators	New Glarus Police Department was renovated and a generator was installed.
	Consider including redundancies in utility services.	VI New Glarus completed a new electric substation in 2022 in coordination with Alliant Energy to provide redundancy in electric services.

*Note that strategies will be carried forward into the next plan update unless noted.

VILLAGE OF NEW GLARUS
RESOLUTION 23-13

RESOLUTION FOR WAGE INCREASES FOR LINE FOREMAN, JOURNEY LINEWORKER, AND WATER OPERATOR

WHEREAS, the Village has determined it is necessary to make a wage adjustment for the positions of Line Foreman, Journey Lineworker, and Water Operator to remain competitive in the job market; and

WHEREAS, the Finance/Personnel Committee met on March 29, 2023 and April 18, 2023 and recommended the proposed wage increases for all three positions.

NOW THEREFORE, THE VILLAGE BOARD of the VILLAGE OF NEW GLARUS, GREEN COUNTY, WISCONSIN does hereby resolve to increase the hourly wage of the Line Foreman from $40.05/hour to $45.00/hour, increase the hourly wage of the Journey Lineworker from $38.96/hour to range of $37.00/hour to $44.00/hour, and increase the hourly wage of the Water Operator from $31.06/hour to $33.65/hour. Said wage increases shall be effective on May 29, 2023.

Adopted this 3rd day of May, 2023.

PRESENTED: 5/3/2023
ADOPTED: _____

_____
Roger J. Truttmann, President

_____
Kelsey Jenson, Village Clerk/Treasurer