Horace City Council Meeting

Monday, February 3, 2025, 2024 – 6:00 pm
Fire Hall Event Center, 413 Main Street, Horace, ND 58047

1. Call to Order

2. Declare Quorum | Pledge

3. Approve Regular Agenda

4. Approve Consent Agenda
   a. Vendor Invoices
   b. Pledge Reports
   c. Balance Sheet & Income Statement
   d. Checks Written in December 2024
   e. Water, Sewer, Storm, and Street Improvement District No. 2023-3 (You Betcha Drive)
      i. Progressive Estimate No. 6
   f. Cass County Multi-Hazard Mitigation Plan Adoption
   g. City of Horace/Cass County MOU Resolution (CR-17: 52nd Ave. S. to FM Diversion and CR-16: 81st St. S. to 57th St. S.) Turnover Date Establishment
   h. Fargo Sanitary Sewer Agreement – Amendment Update
   i. 2024 Audit Engagement Letter – Eide Bailly
   j. 2025 Billing Rates – Ohnstad Twichell
   k. Horace Lions Club – Gaming Site Authorization for Fun Night
      i. March 14th, 2025, at the Horace Senior Center
   l. Big Erv's – Special Events Permit
      i. March 14th, 2025, at the Horace Senior Center

5. Approve City Council Workshop Minutes from December 12, 2024

6. Approve City Council Meeting Minutes from January 6, 2025

7. Public Comment

8. Sheriff's Update | Craig Keller & Bryce Noonan, Cass County Sheriff's Office

9. Final Pavement Lifts & Misc City Street Patching (Various Locations - WSSS ID Nos. 2019-6 (Cub Creek First Addition), 2019-7 (Maple Lakes Estates Addition Ph I), & 2021-3 (Lakeview Addition) | Jim Dahlman, City Engineer
   a. Resolution Approving the Plans and Specifications
      i. Discussion & Action
   b. Resolution Directing the Engineer to Advertise for Bids
      i. Discussion & Action

10. TMA-CRP-8-999(060) PCN 24432 (CR17 Shared Use Path 81st to 76th) | Jim Dahlman, City Engineer
    a. Engineering Services Agreement
        i. Discussion & Action

11. Water, Sewer, Storm, and Street Improvement District No. 2025-4 (Deer Creek Estates Addition | Jim Dahlman, City Engineer
    a. Resolution Approving the Preliminary Engineering Report
        i. Discussion & Action
    b. Resolution Directing the Engineer to Prepare the Plans and Specifications
        i. Discussion & Action

12. Luther Avenue | Lukas Croaker, City Attorney
    a. Memorandum of Understanding (MOU)
        i. Discussion & Action

13. Water, Sewer, Storm, and Street Improvement District No. 2025-5 (Luther Avenue) | Jim Dahlman, City Engineer
    a. Resolution Creating the District
        i. Discussion & Action
    b. Resolution Directing the City Engineer to Prepare the Preliminary Engineering Report
        i. Discussion & Action

14. Engineering/Public Works Report | Jim Dahlman, City Engineer
    a. Consideration of Virtual Meetings

15. City Administrator Report | Brenton Holper, City Administrator

16. Portfolio Reports
    a. Mayor Trudeau
    b. Councilmember Veit
    c. Councilmember Burkland
    d. Councilmember Landstrom
    e. Councilmember Dwyer

17. Adjourn

The next City Council meeting is scheduled for Tuesday, February 18, 2025, at 6:00 pm

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6194	702 ABM Technology Group	3,978.80								
Feb										
AR1871896	01/01/25 Bkup, Security, Threat Prot	1,040.00			100		4151	317		1130
AR1871897	01/01/25 Contract Support	2,030.00			100		4151	310		1130
AR1871898	01/01/25 PC Bkup & recovery	60.00			100		4151	310		1130
AR1871789	01/01/25 Microsoft 365 - Jan 2025	848.80			100		4151	310		1130
	Total for Vendor:	3,978.80								
6210	10 ADVANCE GARAGE DOOR INC	192.00								
92391	01/09/25 Garage door openers new trucks	192.00			201		4152	421		1130
	Total for Vendor:	192.00								
	*** Claim from another period (12/24) ****									
6204	11 AE2S	2,868.50								
100089	01/07/25 Population Study	791.04			484		4319	310		1130
100089										
100089	01/07/25 Population Study	189.30			476		4319	310		1130
100089	01/07/25 Population Study	340.74			477		4319	310		1130
100089	01/07/25 Population Study	363.26			481		4319	310		1130
100089	01/07/25 Population Study	192.99			482		4319	310		1130
100089	01/07/25 Population Study	67.78			483		4319	310		1130
100089	07/01/25 Population Study	923.39			485		4319	310		1130
	Total for Vendor:	2,868.50								
	*** Claim from another period (12/24) ****									
6193	16 AMERICAN WELDING & GAS, INC.	487.14								
10554071	12/31/24 Welding Gases & cylinder	487.14			100		4151	332		1130
	*** Claim from another period (12/24) ****									
6211	16 AMERICAN WELDING & GAS, INC.	19.07								
10575324	12/31/24 Welding Gases & cylinder	19.07			100		4151	332		1130
	Total for Vendor:	506.21								
6191	29 BERT'S TRUCK EQUIPMENT	499.89								
102372	01/03/25 Cutting blades for Dodge	700.93			201		4151	383		1130
98218	08/15/24 Double Payment	-201.04			201		4151	382		1130
CI 39										

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6226	29 BERT'S TRUCK EQUIPMENT	342.62								
102499	01/16/25 Shoes for Dodge Plow	173.70			201		4151	382		1130
102502	01/16/25 Tie downs for tilt bed trailer	168.92			201		4151	382		1130
	Total for Vendor:	842.51								
	*** Claim from another period (12/24) ****									
6222	42 CASS COUNTY ELECTRIC	86.64								
1197555	01/10/25 106-172-5250 7951 Jacksway#10	86.64			100		4151	351		1130
6229	42 CASS COUNTY ELECTRIC	6,286.00								
Street lights										
1172924	01/07/25 106-071-3001	33.00			201		4151	351		1130
1172924	01/07/25 106-073-0000	165.00			201		4151	351		1130
1172924	01/07/25 106-173-7010	23.24			201		4151	351		1130
1172924	01/07/25 106-184-0000	209.00			201		4151	351		1130
1172924	01/07/25 106-191-0000	542.20			201		4151	351		1130
1172924	01/07/25 106-191-0001	126.70			201		4151	351		1130
1172924	01/07/25 106-194-0000	154.00			201		4151	351		1130
1172924	01/07/25 106-182-0270	54.84			201		4151	351		1130
1172924	01/07/25 106-202-4281	93.61			201		4151	351		1130
1172924	01/07/25 106-192-1271	67.24			201		4151	351		1130
1172924	01/07/25 106-192-1841	116.97			201		4151	351		1130
1172924	01/07/25 106-201-0090	147.49			201		4151	351		1130
1172924	01/07/25 106-083-0110	1,094.60			201		4151	351		1130
1172924	01/07/25 106-083-0391	30.71			201		4151	351		1130
1172924	01/07/25 106-203-0051	427.69			201		4151	351		1130
1172924	01/07/25 106-172-0060	778.35			201		4151	351		1130
1172924	01/07/25 106-083-2851	233.95			201		4151	351		1130
1172924	01/07/25 106-192-2411	145.27			201		4151	351		1130
1172924	01/07/25 106-192-3341	101.94			201		4151	351		1130
1172924	01/07/25 106-301-1070	134.31			201		4151	351		1130
1172924	01/07/25 106-173-2161	321.33			201		4151	351		1130
1172924	01/07/25 106-193-2151	57.65			201		4151	351		1130
1172924	01/07/25 106-191-6151	40.40			201		4151	351		1130
1172924	01/07/25 106-082-0311	219.41			201		4151	351		1130
1172924	01/07/25 106-191-0010	86.05			201		4151	351		1130
1172924	01/07/25 106-083-1331	295.69			201		4151	351		1130

* ... Over spent expenditure

Claim/	Check	Invoice	Vendor #/Name/ #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
	1172924	01/07/25	106-174-2541	363.37			201		4151	351		1130
	1172924	01/07/25	106-182-1441	98.45			201		4151	351		1130
	1172924	01/07/25	Operation Roundup	0.30			201		4151	351		1130
	1172924	01/07/25	Franchise Fee	123.24			201		4151	351		1130
6230			42 CASS COUNTY ELECTRIC	997.55								
Storm water lift stations												
	1172938	01/07/25	106-071-3250	217.64			502		4151	353		1130
	1172938	01/07/25	106-074-5160	34.82			502		4151	353		1130
	1172938	01/07/25	106-184-0791	53.50			502		4151	353		1130
	1172938	01/07/25	106-191-2750	28.61			502		4151	353		1130
	1172938	01/07/25	106-191-7390	48.47			502		4151	353		1130
	1172938	12/05/24	106-182-0271	74.24			502		4151	353		1130
	1172938	01/07/25	106-192-0100	135.00			502		4151	353		1130
	1172938	01/07/25	106-201-0100	74.24			502		4151	353		1130
	1172938	01/07/25	106-171-0030	94.52			502		4151	353		1130
	1172938	01/07/25	106-172-0020	71.50			502		4151	353		1130
	1172938	01/07/25	106-083-0500	116.96			502		4151	353		1130
	1172938	01/07/25	106-082-1180	28.50			502		4151	353		1130
	1172938	01/07/25	Horace Franchise Fee	19.55			502		4151	353		1130
6231			42 CASS COUNTY ELECTRIC	2,065.00								
Sanitary sewer lift stations												
	1172940	01/07/25	106-184-0741	88.48			502		4151	351		1130
	1172940	01/07/25	106-191-0354	153.98			502		4151	351		1130
	1172940	01/07/25	106-191-2500	116.96			502		4151	351		1130
	1172940	01/07/25	106-194-2070	88.48			502		4151	351		1130
	1172940	01/07/25	106-202-0800	293.19			502		4151	351		1130
	1172940	01/07/25	106-183-1370	137.98			502		4151	351		1130
	1172940	01/07/25	106-202-4170	90.62			502		4151	351		1130
	1172940	12/05/24	106-192-1840	132.65			502		4151	351		1130
	1172940	01/07/25	106-172-0100	275.42			502		4151	351		1130
	1172940	01/07/25	106-203-0050	101.36			502		4151	351		1130
	1172940	01/07/25	106-083-1990	118.10			502		4151	351		1130
	1172940	01/07/25	106-301-2000	59.33			502		4151	351		1130
	1172940	01/07/25	106-176-1990	79.37			502		4151	351		1130
	1172940	01/07/25	106-053-0060	74.81			502		4151	351		1130

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
1172940	01/07/25 106-171-2600	96.11			502		4151	351		1130
1172940	01/07/25 106-183-1490	116.96			502		4151	351		1130
1172940	01/07/25 Franchise Fee	41.20			502		4151	351		1130
6232	42 CASS COUNTY ELECTRIC	695.07								
Irrigation										
1172942	01/07/25 106-074-0131	28.50			502		4151	353		1130
1172942	01/07/25 106-191-2510	162.53			501		4151	351		1130
1172942	01/07/25 106-202-0950	190.33			100		4151	351		1130
1172942	01/07/25 106-202-0970	169.00			100		4151	351		1130
1172942	01/07/25 106-071-3002	0.00			502		4151	353		1130
1172942	01/07/25 106-301-0460	61.73			502		4151	351		1130
1172942	01/07/25 106-173-2162	69.34			502		4151	351		1130
1172942	01/07/25 Horace Franchise Fee	13.64			100		4151	351		1130
	Total for Vendor:	10,130.26								
	*** Claim from another period (12/24) ****									
6190	48 CASS COUNTY FINANCE	17,032.34								
11515	12/31/24 Contract Policing - Dec 2024	17,032.34			100		4151	390		1130
6209	48 CASS COUNTY FINANCE	1,781.88								
Idoc web hosting/access/support - Horace Cost share										
INV011545	01/09/25 Document Preservation	1,781.88			100		4151	317		1130
	Total for Vendor:	18,814.22								
6208	53 CHAMBER OF COMMERCE FGO/MHD/WFGO	225.00								
351325	01/03/25 State of the Cities	225.00			100		4151	341		1130
	Total for Vendor:	225.00								
6216	55 CINTAS	244.38								
4217707872	01/14/25 Floor Mats - City Hall	244.38			100		4151	310		1130
	Total for Vendor:	244.38								
	*** Claim from another period (12/24) ****									
6214	374 CITY OF FARGO - UTILITY	17,742.00								
600024681	01/06/25 68 Deer Creek Pkwy	17,742.00			502		4152	453		1130
	Total for Vendor:	17,742.00								

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6206		687 Column Software PBC	213.56								
	01/10/25	Mtg Minutes	213.56			100		4151	360		1130
75FE36A0-0032											
		Total for Vendor:	213.56								
		*** Claim from another period (12/24) ****									
6207		62 CORE & MAIN	1,720.00								
	W224465 12/30/24	Commercial Water Meters	1,720.00			501		4152	421		1130
		Total for Vendor:	1,720.00								
		*** Claim from another period (12/24) ****									
6195		63 CORPORATE PAYMENT SYSTEMS	25,734.24								
	CC-91 12/03/24	fuel	23.10			201		2125			1130
Holiday Stations				CC Accounting: 201- - 4151-385							
	CC-91 12/03/24	fuel	1.92			231		2125			1130
Holiday Stations				CC Accounting: 231- - 4151-385							
	CC-91 12/03/24	fuel	5.78			501		2125			1130
Holiday Stations				CC Accounting: 501- - 4151-385							
	CC-91 12/03/24	fuel	5.78			502		2125			1130
Holiday Stations				CC Accounting: 502- - 4151-385							
	CC-91 12/13/24	Welder	10,688.85			100		2125			1130
AMERICAN WELDING & GAS, INC.				CC Accounting: 100- - 4153-641							
	CC-91 11/14/24	fuel	45.43			201		2125			1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385							
	CC-91 11/14/24	fuel	3.78			231		2125			1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385							
	CC-91 11/14/24	fuel	11.35			501		2125			1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385							
	CC-91 11/14/24	fuel	11.35			502		2125			1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385							
	CC-91 11/20/24	fuel	34.53			201		2125			1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385							
	CC-91 11/20/24	fuel	2.88			231		2125			1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385							
	CC-91 11/20/24	fuel	8.63			501		2125			1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385							
	CC-91 11/20/24	fuel	8.63			502		2125			1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385							

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 11/27/24 ice for lagoon test		5.58			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4152-431					
CC-91 11/25/24 fuel		43.29			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/25/24 fuel		3.61			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/25/24 fuel		10.83			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/25/24 fuel		10.83			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/19/24 tests		24.46			502 2125			1130
UPS Store			CC Accounting: 502- - 4152-431					
CC-91 11/20/24 Annual Conf Adam & Doug		412.00			100 2125			1130
ND RURAL WATER SYSTEMS ASSOC.			CC Accounting: 100- - 4151-341					
CC-91 11/26/24 Equip for service truck EOY		159.98			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4153-641					
CC-91 11/27/24 Mini lamps		3.10			201 2125			1130
NAPA			CC Accounting: 201- - 4152-421					
CC-91 11/27/24 Tools		1,527.12			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4153-641					
CC-91 11/27/24 tools for service truck		138.91			100 2125			1130
FLEET FARM			CC Accounting: 100- - 4153-641					
CC-91 12/02/24 Barbed wire		220.73			100 2125			1130
FLEET FARM			CC Accounting: 100- - 4153-641					
CC-91 12/02/24 Barbed wire		-220.73			100 2125			1130
FLEET FARM			CC Accounting: 100- - 4153-641					
CC-91 12/02/24 tool storage		138.11			100 2125			1130
HARBOR FREIGHT			CC Accounting: 100- - 4152-421					
CC-91 12/02/24 Karl's - Washer/dryer shops		1,534.99			100 2125			1130
Misc Credit Card Vendor			CC Accounting: 100- - 4153-641					
CC-91 12/02/24 Service truck set up		264.81			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4153-641					
CC-91 12/02/24 fuel		41.56			201 2125			1130
Holiday Stations			CC Accounting: 201- - 4151-385					
CC-91 12/02/24 fuel		3.46			231 2125			1130
Holiday Stations			CC Accounting: 231- - 4151-385					
CC-91 12/02/24 fuel		10.39			501 2125			1130
Holiday Stations			CC Accounting: 501- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 12/02/24 fuel		10.39			502 2125			1130
Holiday Stations			CC Accounting: 502- - 4151-385					
CC-91 12/04/24 sign bolts		24.60			100 2125			1130
MAC'S			CC Accounting: 100- - 4152-421					
CC-91 12/04/24 Socket holders		56.97			100 2125			1130
HARBOR FREIGHT			CC Accounting: 100- - 4152-421					
CC-91 12/04/24 Tool storage		56.98			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4152-421					
CC-91 12/06/24 Bobcat blades		82.98			201 2125			1130
SWANSTON EQUIPMENT			CC Accounting: 201- - 4151-382					
CC-91 12/06/24 hose for snowblower		87.96			201 2125			1130
NORTHERN ENGINE AND SUPPLY			CC Accounting: 201- - 4312-383					
CC-91 12/10/24 Winter gear-Doug		322.48			100 2125			1130
SCHEELS			CC Accounting: 100- - 4152-422					
CC-91 12/12/24 Lift Station Supplies		130.07			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4152-421					
CC-91 11/18/24 rental for lift for flags		611.32			100 2125			1130
UNITED RENTALS			CC Accounting: 100- - 4152-445					
CC-91 11/18/24 Work boots		195.00			100 2125			1130
RUNNINGS			CC Accounting: 100- - 4152-422					
CC-91 11/19/24 Fuel		20.24			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/19/24 Fuel		1.69			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/19/24 Fuel		5.06			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/19/24 Fuel		5.06			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/22/24 Fuel		20.46			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/22/24 Fuel		1.70			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/22/24 Fuel		5.11			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/22/24 Fuel		5.11			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/25/24 fuel		87.87			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 11/25/24 fuel		7.32			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/25/24 fuel		21.97			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/25/24 fuel		21.97			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/27/24 Tools/box service truck		326.86			100 2125			1130
HARBOR FREIGHT			CC Accounting: 100- - 4153-641					
CC-91 11/27/24 shop towels		42.61			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4152-421					
CC-91 11/27/24 tools service trucks		608.94			100 2125			1130
NORTHERN TOOL & EQUIPMENT			CC Accounting: 100- - 4153-641					
CC-91 12/03/24 fuel		42.93			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-91 12/03/24 fuel		3.58			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-91 12/03/24 fuel		10.74			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-91 12/03/24 fuel		10.74			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-91 12/06/24 fuel		15.18			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-91 12/06/24 fuel		1.26			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-91 12/06/24 fuel		3.79			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-91 12/06/24 fuel		3.79			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-91 12/06/24 fuel		41.78			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-91 12/06/24 fuel		3.48			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-91 12/06/24 fuel		10.45			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-91 12/06/24 fuel		10.45			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-91 11/20/24 fuel		43.98			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 11/20/24 fuel		3.66			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/20/24 fuel		10.99			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/20/24 fuel		10.99			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/22/24 fuel		53.35			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/22/24 fuel		4.44			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/22/24 fuel		13.34			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/22/24 fuel		13.34			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 12/04/24 fuel		62.32			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-91 12/04/24 fuel		5.19			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-91 12/04/24 fuel		15.58			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-91 12/04/24 fuel		15.58			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-91 11/17/24 Doodly doftware		69.00			100 2125			1130
Doodly			CC Accounting: 100- - 4151-317					
CC-91 11/25/24 adobe art		29.99			100 2125			1130
ADOBE			CC Accounting: 100- - 4151-317					
CC-91 11/26/24 decor for christmas party		38.97			100 2125			1130
FWMF Chamber of Commerce			CC Accounting: 100- - 4152-490					
CC-91 12/01/24 streaming mtgs		99.00			100 2125			1130
Boxcast Streaming			CC Accounting: 100- - 4151-317					
CC-91 12/02/24 League of Cities conf		100.00			100 2125			1130
ND LEAGUE OF CITIES			CC Accounting: 100- - 4151-341					
CC-91 12/02/24 VOIP		136.53			100 2125			1130
VOXTELESYS LLC			CC Accounting: 100- - 4151-356					
CC-91 12/02/24 refund-didnt go bad weather		-100.00			100 2125			1130
ND LEAGUE OF CITIES			CC Accounting: 100- - 4151-341					
CC-91 11/25/24 fuel		33.30			100 2125			1130
CASEYS GENERAL STORES			CC Accounting: 100- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice	Vendor #/Name/ Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 12/11/24	fuel	37.75			100 2125			1130
CASEYS GENERAL STORES			CC Accounting: 100- - 4151-385					
CC-91 11/14/24	fuel	50.50			100 2125			1130
CASEYS GENERAL STORES			CC Accounting: 100- - 4151-385					
CC-91 11/27/24	fuel	37.34			100 2125			1130
Circle K			CC Accounting: 100- - 4151-385					
CC-91 12/05/24	NDPLS - regis Joel as eng.	110.00			100 2125			1130
Misc Credit Card Vendor			CC Accounting: 100- - 4151-370					
CC-91 12/12/24	Service pickup	107.95			100 2125			1130
DAN'S SERVICE CENTER			CC Accounting: 100- - 4151-383					
CC-91 11/20/24	HD for camera security sys	179.99			100 2125			1130
AMAZON			CC Accounting: 100- - 4153-641					
CC-91 11/22/24	planner for Caleb	16.14			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-91 11/22/24	Return HP dock station	-59.99			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-490					
CC-91 11/22/24	Return HP dock station	-194.40			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-490					
CC-91 11/22/24	packaging	9.29			100 2125			1130
UPS Store			CC Accounting: 100- - 4152-410					
CC-91 11/22/24	beverages	41.77			100 2125			1130
COSTCO			CC Accounting: 100- - 4152-421					
CC-91 11/24/24	return pen	-19.99			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-91 11/24/24	notebook for Keith	9.73			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-91 11/24/24	office supplies	196.94			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-91 11/26/24	Bean Days website	28.00			210 2125			1130
WIX.COM			CC Accounting: 210- - 4151-317					
CC-91 12/01/24	Storage	113.28			100 2125			1130
RIVER ROCK PROPERTY			CC Accounting: 100- - 4151-310					
CC-91 12/03/24	paper supplies - CH & christma	433.60			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-91 12/06/24	Thumb drives	36.79			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-91 12/09/24	Phone case, protectors floor m	257.25			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct Object Proj	Cash Account
CC-91 12/09/24 Brochure holders		65.99			100 2125	1130
AMAZON				CC Accounting: 100- - 4152-421		
CC-91 12/09/24 Chair-Jesse		149.65			100 2125	1130
AMAZON				CC Accounting: 100- - 4152-421		
CC-91 12/10/24 Candle decor - party		50.38			100 2125	1130
AMAZON				CC Accounting: 100- - 4152-490		
CC-91 12/10/24 Coffee		39.99			100 2125	1130
AMAZON				CC Accounting: 100- - 4152-421		
CC-91 11/15/24 fuel		37.17			201 2125	1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385		
CC-91 11/15/24 fuel		3.10			231 2125	1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385		
CC-91 11/15/24 fuel		9.30			501 2125	1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385		
CC-91 11/15/24 fuel		9.30			502 2125	1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385		
CC-91 11/18/24 fuel		26.95			201 2125	1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385		
CC-91 11/18/24 fuel		2.24			231 2125	1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385		
CC-91 11/18/24 fuel		6.73			501 2125	1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385		
CC-91 11/18/24 fuel		6.73			502 2125	1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385		
CC-91 11/20/24 Return		-19.33			201 2125	1130
Auto Value (STURDEVANT'S)				CC Accounting: 201- - 4151-383		
CC-91 11/20/24 fuel		56.23			201 2125	1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385		
CC-91 11/20/24 fuel		4.68			231 2125	1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385		
CC-91 11/20/24 fuel		14.06			501 2125	1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385		
CC-91 11/20/24 fuel		14.06			502 2125	1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385		
CC-91 11/25/24 fuel		70.24			201 2125	1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385		
CC-91 11/25/24 fuel		5.85			231 2125	1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385		

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 11/25/24 fuel		17.56			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/25/24 fuel		17.56			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/25/24 fuel		41.00			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/25/24 fuel		3.41			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/25/24 fuel		10.25			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/25/24 fuel		10.25			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 11/26/24 Tools		985.19			100 2125			1130
HARBOR FREIGHT			CC Accounting: 100- - 4153-641					
CC-91 11/26/24 fuel		40.15			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/26/24 fuel		3.34			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/26/24 fuel		10.04			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/26/24 fuel		10.04			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 12/04/24 Shop office-files		222.53			100 2125			1130
WALMART			CC Accounting: 100- - 4152-410					
CC-91 12/04/24 Shop office		784.59			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4153-681					
CC-91 12/04/24 Shop Office		60.18			100 2125			1130
OFFICE DEPOT / OFFICE MAX			CC Accounting: 100- - 4152-410					
CC-91 12/04/24 fuel		37.34			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 12/04/24 fuel		3.11			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 12/04/24 fuel		9.33			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 12/04/24 fuel		9.33			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-91 12/10/24 Shop Office		51.88			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4153-681					

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 12/10/24	Shop Office	151.93			100 2125			1130
OFFICE DEPOT / OFFICE MAX			CC Accounting: 100-	-	4152-410			
CC-91 12/12/24	repair snowblower	293.46			100 2125			1130
SCHEELS			CC Accounting: 100-	-	4151-382			
CC-91 11/14/24	fuel	21.37			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201-	-	4151-385			
CC-91 11/14/24	fuel	1.78			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231-	-	4151-385			
CC-91 11/14/24	fuel	5.34			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501-	-	4151-385			
CC-91 11/14/24	fuel	5.34			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502-	-	4151-385			
CC-91 11/18/24	Boots & gloves	157.98			100 2125			1130
RUNNINGS			CC Accounting: 100-	-	4152-422			
CC-91 11/27/24	fuel	14.16			201 2125			1130
Circle K			CC Accounting: 201-	-	4151-385			
CC-91 11/27/24	fuel	1.18			231 2125			1130
Circle K			CC Accounting: 231-	-	4151-385			
CC-91 11/27/24	fuel	3.54			501 2125			1130
Circle K			CC Accounting: 501-	-	4151-385			
CC-91 11/27/24	fuel	3.54			502 2125			1130
Circle K			CC Accounting: 502-	-	4151-385			
CC-91 11/15/24	Sheywest-tree	215.00			231 2125			1130
Misc Credit Card Vendor			CC Accounting: 231-	-	4152-421			
CC-91 11/16/24	Ad software	29.00			100 2125			1130
ADcreative.ai app			CC Accounting: 100-	-	4151-317			
CC-91 11/18/24	Return Halloween items	-39.99			207 2125			1130
AMAZON			CC Accounting: 207-	-	4152-461			
CC-91 11/18/24	Return Halloween items	-49.89			207 2125			1130
AMAZON			CC Accounting: 207-	-	4152-461			
CC-91 11/22/24	Holly Days posters	10.16			208 2125			1130
Short Printer			CC Accounting: 208-	-	4152-461			
CC-91 11/30/24	carwash	19.95			201 2125			1130
Silver Star Car Wash			CC Accounting: 201-	-	4151-381			
CC-91 12/04/24	Holly Days Stickers	100.00			208 2125			1130
Sticker Mule			CC Accounting: 208-	-	4152-461			
CC-91 12/05/24	Holly Days Ad	3.90			208 2125			1130
Facebook - Advert.			CC Accounting: 208-	-	4152-461			

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-91 12/05/24	Holly Days Ad	5.43			208 2125			1130
Facebook - Advert.			CC Accounting: 208- - 4152-461					
CC-91 12/10/24	PIO training	100.00			100 2125			1130
North Dakota Public Information Officer			CC Accounting: 100- - 4152-441					
CC-91 12/10/24	Holly Days supplies	273.20			208 2125			1130
AMAZON			CC Accounting: 208- - 4152-461					
CC-91 12/01/24	Meat	212.68			100 2125			1130
COSTCO			CC Accounting: 100- - 4152-445					
CC-91 11/21/24	Fuel	43.01			100 2125			1130
CASEYS GENERAL STORES			CC Accounting: 100- - 4151-385					
CC-91 11/27/24	Code Books	961.65			100 2125			1130
INTERNATIONAL CODE COUNCIL			CC Accounting: 100- - 4152-441					
CC-91 12/02/24	cognito forms	99.00			100 2125			1130
Cognito Enterprise Forms			CC Accounting: 100- - 4151-317					
CC-91 11/22/24	fuel	35.17			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-91 11/22/24	fuel	2.93			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-91 11/22/24	fuel	8.80			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-91 11/22/24	fuel	8.80			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
	Total for Vendor:	25,734.24						
6228	560 First International Insurance	822.00						
NDIRF Coverage								
511836 01/16/25	NDIRF Increase umbrella-1.7m	225.00			100 4151	320		1130
514951 01/21/25	NDIRF ins - plow truck	597.00			100 4151	320		1130
	Total for Vendor:	822.00						
6223	101 HAWKINS INC	10.00						
6960523 01/15/25	water treatement chemicals	10.00		Adam	501 4152	432		1130
	Total for Vendor:	10.00						

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
		*** Claim from another period (12/24) ****									
6189		286 HOFER SIGNS	235.00								
	26550	12/30/24 DEF for shops	235.00			201	4152		423		1130
6227		286 HOFER SIGNS	200.00								
	26593	01/20/25 Vehicle Decals	200.00			201	4152		421		1130
		Total for Vendor:	435.00								
		*** Claim from another period (12/24) ****									
6188		569 Mama Ducks Cleaning Service	962.22								
	3302	12/01/24 City Hall Cleaning-Nov 24	962.22			100	4151		310		1130
		Total for Vendor:	962.22								
		*** Claim from another period (12/24) ****									
6215		365 MIDWEST INSPECTION SERVICES	400.00								
	2252	01/14/25 Building Code Support	400.00		2	100	4151		314		1130
		Total for Vendor:	400.00								
		*** Claim from another period (12/24) ****									
6212		154 MIDWEST PEST CONTROL	110.00								
	193139	11/07/24 ND Regular Rodents	110.00			100	4151		310		1130
		Total for Vendor:	110.00								
6205		304 NORTHERN TOOL & EQUIPMENT	279.00								
	54562544	01/08/25 IBG Stand	279.00			100	4152		421		1130
		Total for Vendor:	279.00								
		*** Claim from another period (12/24) ****									
6220		181 OHNSTAD TWICHELL PC	15,942.66								
	200577	12/21/24 St Benedict's Sewer Agreement	78.00			100	4151		312		1130
	200579	12/21/24 2022-11 Cub Creek 2	117.50			484	4319		312		1130
	200580	12/21/24 2022-12 Rivers Edge 2nd	150.50			485	4319		312		1130
	200581	12/21/24 2022-13 Altemberg Acres 2nd	70.50			486	4319		312		1130
	200583	12/21/24 2022-4 Wall Ave west	129.00			477	4319		312		1130
	200584	12/21/24 General	6,528.00			100	4151		312		1130
	200585	12/21/24 Nuisances 2024	280.50			100	4151		312		1130
	200586	12/21/24 Plat Sunset Valley	981.00			100	4151		312		1130
	200587	12/21/24 Cable Franchise	235.92			100	4151		312		1130
	200588	12/21/24 Plat Suncrest 1st Addition	3,545.84			100	4151		312		1130
	200589	12/21/24 Rezone Suncrest 1st Addition	245.16			100	4151		312		1130
	200590	12/21/24 Plat Horace energy Park	522.56			100	4151		312		1130

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
	200591 12/21/24	Rezone Horace Energy park	51.68			100		4151	312		1130
	200592 12/21/24	Development workshops	552.00			100		4151	312		1130
	200593 12/21/24	Plat Oak Valley Addition	80.00			100		4151	312		1130
	200594 12/21/24	Rezone Oak Valley Addition	195.00			100		4151	312		1130
	200595 12/21/24	Plat Stanley 2nd Resubdivision	720.00			100		4151	312		1130
	200597 12/21/24	Media Guidelines	552.00			100		4151	312		1130
	200598 12/21/24	Plat West Creek Addition	696.00			100		4151	312		1130
	200596 12/21/24	2025-1	94.00			410		4319	312		1130
	200599 12/21/24	2025-2	117.50			411		4319	312		1130
		Total for Vendor:	15,942.66								
		*** Claim from another period (12/24) ****									
6192		182 ONE CALL CONCEPTS	75.85								
	4124181 12/31/24	Locates	75.85		Adam	501		4151	310		1130
		Total for Vendor:	75.85								
6213		691 QUADIENT Leasing USA, INC.	418.47								
	Q1662359 01/02/25	Postage Meter Lease	418.47			100		4151	332		1130
		Total for Vendor:	418.47								
6197		201 RDO EQUIPMENT	2,175.32								
	W3128054 01/08/25	1000 hr Service Grader	2,175.32			201		4151	382		1130
		Total for Vendor:	2,175.32								
6225		227 SWANSTON EQUIPMENT	180.36								
	P09335 01/16/25	Stand for Angle Sweeper	180.36			201		4151	382		1130
		Total for Vendor:	180.36								
		*** Claim from another period (12/24) ****									
6198		242 TRUNORTH DYNAMICS	100.00								
	11/19/24	Njevity togo Remote desktop	100.00			100		4151	310		1130
PS-INV117086											
		Total for Vendor:	100.00								
		*** Claim from another period (12/24) ****									
6199		253 VERIZON	670.58								
	6102622742 01/02/25	Cellular Service 12-24	670.58			100		4151	356		1130

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6201		253 VERIZON	23.12								
	6102622742	01/02/25 Cellular Service 1-25	23.12			100		4151	356		1130
		Total for Vendor:	693.70								
6217	E	257 WASTE MANAGEMENT Corp Servs Inc	47,161.66								
	01/06/25	3-59728-23007 Residential Serv	47,161.66			503		4152	451		1130
6782608-05109											
6218	E	257 WASTE MANAGEMENT Corp Servs Inc	228.00								
	01/06/25	32-19707-33003 Cardboard Recyc	228.00			503		4152	451		1130
6783761-0510-5											
6219	E	257 WASTE MANAGEMENT Corp Servs Inc	269.89								
8 yard Dumpster at City Shop											
	01/06/25	8 yd Dumpster - City Shop	269.89			503		4152	451		1130
6782817-0510-6											
		Total for Vendor:	47,659.55								
		*** Claim from another period (12/24) ****									
6202		261 XCEL ENERGY	879.60								
	01/02/24	Nat Gas	175.92			100		4151	350		1130
909203468											
	01/02/24	Nat Gas	263.88			201		4151	350		1130
909203468											
	01/02/24	Nat Gas	219.90			501		4151	350		1130
909203468											
	01/02/24	Nat Gas	219.90*			502		4151	350		1130
909203468											
6203		261 XCEL ENERGY	29.32								
	01/02/25	Nat Gas	5.86			100		4151	350		1130
909203468											
	01/02/25	Nat Gas	8.80			201		4151	350		1130
909203468											
	01/02/25	Nat Gas	7.33			501		4151	350		1130
909203468											
	01/02/25	Nat Gas	7.33*			502		4151	350		1130
909203468											
		Total for Vendor:	908.92								

# of Claims	41	Total:	154,384.73	# of Vendors	28
Total Electronic Claims			47,659.55		
Total Non-Electronic Claims			106725.18		

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
		*** Claim from another period (12/24) ****									
6238	49	CASS RURAL WATER USERS	13,418.61								
12650	01/25/25	8501 Memory Lane	30.00			501	4152		452		1130
22447	01/25/25	Vault	13,388.61			501	4152		452		1130
		Total for Vendor:	13,418.61								
6258	51	CENTURY LINK	174.37								
	01/25/25	Telephone 701-282-4292	102.03			100	4151		356		1130
333952443											
	01/28/25	Telephone 701-492-6232	72.34			100	4151		356		1130
333605994											
		Total for Vendor:	174.37								
		*** Claim from another period (12/24) ****									
6252	525	Christianson Companies, Inc.	133,643.85								
Fitup #2	01/15/25	Council Chambers Fitup #2	133,643.85			403	4319		681		1130
		Total for Vendor:	133,643.85								
6260	55	CINTAS	244.38								
4219211104	01/28/25	Floor Mats - City Hall	244.38			100	4151		310		1130
		Total for Vendor:	244.38								
6254	63	CORPORATE PAYMENT SYSTEMS	6,886.25								
CC-93	01/06/25	Items for new restroom-shops	425.70			100	2125				1130
MENARDS - FARGO				CC Accounting: 100-	-	4151-384					
CC-93	01/03/25	pins for snow blower	589.67			201	2125				1130
General Equipment & Supplies, Inc.				CC Accounting: 201-	-	4151-382					
CC-93	01/07/25	Hitch for serice tuck	363.80			201	2125				1130
NORTHERN TOOL & EQUIPMENT				CC Accounting: 201-	-	4152-421					
CC-93	01/07/25	Explorer 3	13.00			100	2125				1130
Circle K				CC Accounting: 100-	-	4151-381					
CC-93	01/09/25	Vehicle wash	15.00			201	2125				1130
FASTLANE CAR WASH				CC Accounting: 201-	-	4151-381					
CC-93	01/13/25	Repair skid steer blower	37.36			201	2125				1130
SWANSTON EQUIPMENT				CC Accounting: 201-	-	4151-381					
CC-93	01/13/25	Hydralic hoses	100.26			201	2125				1130
NORTHERN ENGINE AND SUPPLY				CC Accounting: 201-	-	4151-383					
CC-93	01/13/25	supplies - oil & paper	257.93			100	2125				1130
FLEET FARM				CC Accounting: 100-	-	4152-421					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct Object Proj	Cash Account
CC-93 01/13/25 fuel		55.36			201 2125	1130
Circle K			CC Accounting: 201- - 4151-385			
CC-93 01/13/25 fuel		4.61			231 2125	1130
Circle K			CC Accounting: 231- - 4151-385			
CC-93 01/13/25 fuel		13.84			501 2125	1130
Circle K			CC Accounting: 501- - 4151-385			
CC-93 01/13/25 fuel		13.84			502 2125	1130
Circle K			CC Accounting: 502- - 4151-385			
CC-93 01/13/25 fuel		90.33			201 2125	1130
Circle K			CC Accounting: 201- - 4151-385			
CC-93 01/13/25 fuel		7.52			231 2125	1130
Circle K			CC Accounting: 231- - 4151-385			
CC-93 01/13/25 fuel		22.58			501 2125	1130
Circle K			CC Accounting: 501- - 4151-385			
CC-93 01/13/25 fuel		22.58			502 2125	1130
Circle K			CC Accounting: 502- - 4151-385			
CC-93 01/08/25 fuel		12.16			201 2125	1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385			
CC-93 01/08/25 fuel		1.01			231 2125	1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385			
CC-93 01/08/25 fuel		3.04			501 2125	1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385			
CC-93 01/08/25 fuel		3.04			502 2125	1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385			
CC-93 01/10/25 fuel		40.19			201 2125	1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385			
CC-93 01/10/25 fuel		3.35			231 2125	1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385			
CC-93 01/10/25 fuel		10.05			501 2125	1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385			
CC-93 01/10/25 fuel		10.05			502 2125	1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385			
CC-93 01/12/25 fuel		52.30			201 2125	1130
Circle K			CC Accounting: 201- - 4151-385			
CC-93 01/12/25 fuel		4.35			231 2125	1130
Circle K			CC Accounting: 231- - 4151-385			
CC-93 01/12/25 fuel		13.07			501 2125	1130
Circle K			CC Accounting: 501- - 4151-385			

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct Object Proj	Cash Account
CC-93 01/12/25	fuel	13.07			502 2125	1130
Circle K			CC Accounting: 502- - 4151-385			
CC-93 01/13/25	fuel	57.84			201 2125	1130
Circle K			CC Accounting: 201- - 4151-385			
CC-93 01/13/25	fuel	4.82			231 2125	1130
Circle K			CC Accounting: 231- - 4151-385			
CC-93 01/13/25	fuel	14.46			501 2125	1130
Circle K			CC Accounting: 501- - 4151-385			
CC-93 01/13/25	fuel	14.46			502 2125	1130
Circle K			CC Accounting: 502- - 4151-385			
CC-93 01/14/25	Car Wash	67.00			201 2125	1130
Misc Credit Card Vendor			CC Accounting: 201- - 4151-381			
CC-93 01/10/25	fuel	19.89			201 2125	1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385			
CC-93 01/10/25	fuel	1.66			231 2125	1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385			
CC-93 01/10/25	fuel	4.98			501 2125	1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385			
CC-93 01/10/25	fuel	4.98			502 2125	1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385			
CC-93 01/01/25	Stream Mtgs	99.00			100 2125	1130
Boxcast Streaming			CC Accounting: 100- - 4151-317			
CC-93 01/01/25	Forms software	99.00			100 2125	1130
Cognito Enterprise Forms			CC Accounting: 100- - 4151-317			
CC-93 01/02/25	VOIP	136.61			100 2125	1130
VOXTELESYS LLC			CC Accounting: 100- - 4151-356			
CC-93 01/07/25	Extra meeting refund rental	-200.00			100 2125	1130
Southern Valley Fire & Rescue			CC Accounting: 100- - 4151-319			
CC-93 01/09/25	Web domain name 3yrs	150.48			100 2125	1130
Misc Credit Card Vendor			CC Accounting: 100- - 4151-317			
CC-93 01/02/25	items for RR in shops	174.70			100 2125	1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445			
CC-93 01/03/25	Return non-used items	-22.66			100 2125	1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445			
CC-93 01/03/25	fuel	24.94			201 2125	1130
Circle K			CC Accounting: 201- - 4151-385			
CC-93 01/03/25	fuel	2.08			231 2125	1130
Circle K			CC Accounting: 231- - 4151-385			

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-93 01/03/25	fuel	6.24			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-93 01/03/25	fuel	6.24			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-93 01/11/25	Code Training	375.00			100 2125			1130
INTERNATIONAL CODE COUNCIL			CC Accounting: 100- - 4152-441					
CC-93 01/04/25	Jace- Training	752.50			100 2125			1130
ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE			CC Accounting: 100- - 4152-441					
CC-93 01/01/25	City Hall Storage	113.28			100 2125			1130
RIVER ROCK PROPERTY			CC Accounting: 100- - 4151-310					
CC-93 01/02/25	coffee	39.98			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-93 01/07/25	Notebook	15.83			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-93 01/09/25	Hanging files	25.99			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-93 01/12/25	Hanging files and tape	75.07			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-93 01/13/25	Adobe cloud	64.49			100 2125			1130
ADOBE			CC Accounting: 100- - 4151-317					
CC-93 01/02/25	Return unused	-128.11			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
CC-93 01/03/25	Return unused	-68.64			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
CC-93 01/03/25	fuel	47.29			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-93 01/03/25	fuel	3.94			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-93 01/03/25	fuel	11.82			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-93 01/03/25	fuel	11.82			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-93 01/06/25	fuel	41.13			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-93 01/06/25	fuel	3.43			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-93 01/06/25	fuel	10.29			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-93 01/06/25 fuel		10.29			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-93 01/08/25 Supplies		59.42			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-421					
CC-93 01/06/25 2025 membership-Matt		160.00			100 2125			1130
Government Finance Officers Assoc. (GFUA			CC Accounting: 100- - 4151-370					
CC-93 01/06/25 Matt-2025 membership		264.00			100 2125			1130
SHRM (Society for Human Resource Mgmt)			CC Accounting: 100- - 4151-370					
CC-93 01/13/25 Matt-Cert. testing		316.25			100 2125			1130
SHRM (Society for Human Resource Mgmt)			CC Accounting: 100- - 4152-441					
CC-93 01/13/25 Matt-Cert. testing		47.19			201 2125			1130
SHRM (Society for Human Resource Mgmt)			CC Accounting: 201- - 4152-441					
CC-93 01/13/25 Matt-Cert. testing		65.78			501 2125			1130
SHRM (Society for Human Resource Mgmt)			CC Accounting: 501- - 4152-441					
CC-93 01/13/25 Matt-Cert. testing		65.78			502 2125			1130
SHRM (Society for Human Resource Mgmt)			CC Accounting: 502- - 4152-441					
CC-93 01/05/25 Facebook posts		40.64			100 2125			1130
Facebook - Advert.			CC Accounting: 100- - 4152-461					
CC-93 01/06/25 annual for X (Twitter)		229.00			100 2125			1130
Misc Credit Card Vendor			CC Accounting: 100- - 4151-317					
CC-93 01/01/25 Job listing		232.79			100 2125			1130
INDEED JOBS			CC Accounting: 100- - 4151-317					
CC-93 01/09/25 Code Training		600.00			100 2125			1130
INTERNATIONAL CODE COUNCIL			CC Accounting: 100- - 4152-441					
CC-93 01/11/25 refund 1 day training		-200.00			100 2125			1130
INTERNATIONAL CODE COUNCIL			CC Accounting: 100- - 4152-441					
CC-93 01/13/25 fuel		69.15			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-93 01/13/25 fuel		5.76			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-93 01/13/25 fuel		17.29			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-93 01/13/25 fuel		17.29			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-93 01/13/25 fuel		44.72			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-93 01/13/25 fuel		3.72			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
		CC-93 01/13/25 fuel	11.18			501 2125			1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385					
		CC-93 01/13/25 fuel	11.18			502 2125			1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385					
		CC-93 01/07/25 training	303.85			100 2125			1130
CASS RURAL WATER USERS				CC Accounting: 100- - 4152-441					
		CC-93 01/12/25 Supplies	196.05			100 2125			1130
FLEET FARM				CC Accounting: 100- - 4152-421					
		CC-93 01/10/25 fuel	54.03			100 2125			1130
Circle K				CC Accounting: 100- - 4151-385					
		*** Claim from another period (12/24) ****							
6255	63	CORPORATE PAYMENT SYSTEMS	13,489.83						
		CC-92 12/25/24 Fuel	24.22			201 2125			1130
Circle K				CC Accounting: 201- - 4151-385					
		CC-92 12/25/24 Fuel	2.02			231 2125			1130
Circle K				CC Accounting: 231- - 4151-385					
		CC-92 12/25/24 Fuel	6.05			501 2125			1130
Circle K				CC Accounting: 501- - 4151-385					
		CC-92 12/25/24 Fuel	6.05			502 2125			1130
Circle K				CC Accounting: 502- - 4151-385					
		CC-92 12/17/24 Radio - Service Truck	3,450.36			100 2125			1130
MIDSTATES WIRELESS				CC Accounting: 100- - 4153-641					
		CC-92 12/18/24 Concrete mixer-shops	83.67			100 2125			1130
FARGO RENTALL				CC Accounting: 100- - 4152-445					
		CC-92 12/17/24 Supplies	186.44			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-421					
		CC-92 12/18/24 fuel	45.37			201 2125			1130
Circle K				CC Accounting: 201- - 4151-385					
		CC-92 12/18/24 fuel	3.78			231 2125			1130
Circle K				CC Accounting: 231- - 4151-385					
		CC-92 12/18/24 fuel	11.35			501 2125			1130
Circle K				CC Accounting: 501- - 4151-385					
		CC-92 12/18/24 fuel	11.35			502 2125			1130
Circle K				CC Accounting: 502- - 4151-385					
		CC-92 12/19/24 fuel	49.86			201 2125			1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385					
		CC-92 12/19/24 fuel	4.15			231 2125			1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-92 12/19/24 fuel		12.46			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/19/24 fuel		12.46			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/23/24 fuel		43.30			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-92 12/23/24 fuel		3.61			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-92 12/23/24 fuel		10.83			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-92 12/23/24 fuel		10.83			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-92 12/26/24 fuel		94.73			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/26/24 fuel		7.89			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/26/24 fuel		23.69			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/26/24 fuel		23.69			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/30/24 fuel		22.22			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-92 12/30/24 fuel		1.85			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-92 12/30/24 fuel		5.55			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-92 12/30/24 fuel		5.55			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-92 12/31/24 PEX		7.24			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4151-384					
CC-92 12/31/24 Recycle signs		58.66			100 2125			1130
MAC'S			CC Accounting: 100- - 4152-445					
CC-92 12/13/24 Repair F150		177.60			201 2125			1130
Luther Family Ford			CC Accounting: 201- - 4151-383					
CC-92 12/18/24 Fuel		39.26			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/18/24 Fuel		3.27			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-92 12/18/24 Fuel		9.81			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/18/24 Fuel		9.81			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/19/24 fuel		61.28			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/19/24 fuel		5.10			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/19/24 fuel		15.32			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/19/24 fuel		15.32			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/20/24 fuel		74.06			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/20/24 fuel		6.17			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/20/24 fuel		18.51			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/20/24 fuel		18.51			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/26/24 fuel		57.44			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/26/24 fuel		4.78			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/26/24 fuel		14.36			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/26/24 fuel		14.36			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/30/24 fuel		63.26			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/30/24 fuel		5.27			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/30/24 fuel		15.82			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/30/24 fuel		15.82			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/17/24 Doodly software		69.00			100 2125			1130
Doodly			CC Accounting: 100- - 4151-317					

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-92 12/20/24	Extra meeting rm rental	200.00			100 2125			1130
Southern Valley Fire & Rescue			CC Accounting: 100- - 4151-319					
CC-92 12/25/24	Adobe art	29.99			100 2125			1130
ADOBE			CC Accounting: 100- - 4151-317					
CC-92 12/13/24	fuel	14.02			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-92 12/13/24	fuel	1.17			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-92 12/13/24	fuel	3.51			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-92 12/13/24	fuel	3.51			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-92 12/17/24	fuel	42.38			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/17/24	fuel	3.53			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/17/24	fuel	10.59			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/17/24	fuel	10.59			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/26/24	fuel	46.41			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
CC-92 12/26/24	fuel	3.87			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/26/24	fuel	11.60			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/26/24	fuel	11.60			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/27/24	fuel	18.81			201 2125			1130
Circle K			CC Accounting: 201- - 4151-385					
CC-92 12/27/24	fuel	1.57			231 2125			1130
Circle K			CC Accounting: 231- - 4151-385					
CC-92 12/27/24	fuel	4.71			501 2125			1130
Circle K			CC Accounting: 501- - 4151-385					
CC-92 12/27/24	fuel	4.71			502 2125			1130
Circle K			CC Accounting: 502- - 4151-385					
CC-92 12/30/24	fuel	33.74			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-92 12/30/24	fuel	2.81			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
CC-92 12/30/24	fuel	8.43			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
CC-92 12/30/24	fuel	8.43			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
CC-92 12/17/24	Jace-Training	305.00			100 2125			1130
APA (American Planning Assoc)			CC Accounting: 100- - 4152-441					
CC-92 12/20/24	JOb Ad	295.00			100 2125			1130
APA (American Planning Assoc)			CC Accounting: 100- - 4151-319					
CC-92 12/20/24	JOb Ad-MN	25.00			100 2125			1130
APA (American Planning Assoc)			CC Accounting: 100- - 4151-319					
CC-92 12/27/24	Ret lunch-AMY	79.15			100 2125			1130
Headquarters			CC Accounting: 100- - 4151-344					
CC-92 12/16/24	fuel	41.87			100 2125			1130
Circle K			CC Accounting: 100- - 4151-385					
CC-92 12/13/24	Papert Supplies	92.18			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-92 12/13/24	Adobe Cloud	64.49			100 2125			1130
ADOBE			CC Accounting: 100- - 4151-317					
CC-92 12/13/24	Auto storage-new truck	11.99			201 2125			1130
AMAZON			CC Accounting: 201- - 4152-421					
CC-92 12/13/24	Supplies-Christmas party	284.13			100 2125			1130
COSTCO			CC Accounting: 100- - 4152-445					
CC-92 12/15/24	Return chair mat	-59.86			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-92 12/16/24	chair mats	140.80			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-92 12/18/24	Axis Locks	29.00			100 2125			1130
UNIFI			CC Accounting: 100- - 4151-317					
CC-92 12/19/24	notebooks	11.39			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-92 12/20/24	Return wrong chair mat	-59.86			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
CC-92 12/20/24	replacement stamps	18.56			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-410					
CC-92 12/20/24	Paper	99.95			100 2125			1130
COSTCO			CC Accounting: 100- - 4152-410					

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
	CC-92 12/27/24 return wrong chair mat	-59.86			100 2125			1130
AMAZON			CC Accounting: 100- - 4152-421					
	CC-92 12/29/24 Bean Days Website	28.00			100 2125			1130
WIX.COM			CC Accounting: 100- - 4151-317					
	CC-92 12/12/24 Shop Suppl;ies	159.09			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-421					
	CC-92 12/13/24 fuel	37.41			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
	CC-92 12/13/24 fuel	3.11			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
	CC-92 12/13/24 fuel	9.35			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
	CC-92 12/13/24 fuel	9.35			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
	CC-92 12/16/24 Equipment for plumbing shops	628.45			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
	CC-92 12/17/24 Equipment for plumbing shops	74.96			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
	CC-92 12/17/24 Return unused Eq for plumbing	-119.39			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
	CC-92 12/18/24 fuel	47.80			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
	CC-92 12/18/24 fuel	3.98			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
	CC-92 12/18/24 fuel	11.95			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
	CC-92 12/18/24 fuel	11.95			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					
	CC-92 12/23/24 Equipment for washer install	206.58			100 2125			1130
MENARDS - FARGO			CC Accounting: 100- - 4152-445					
	CC-92 12/23/24 fuel	32.81			201 2125			1130
CASEYS GENERAL STORES			CC Accounting: 201- - 4151-385					
	CC-92 12/23/24 fuel	2.73			231 2125			1130
CASEYS GENERAL STORES			CC Accounting: 231- - 4151-385					
	CC-92 12/23/24 fuel	8.20			501 2125			1130
CASEYS GENERAL STORES			CC Accounting: 501- - 4151-385					
	CC-92 12/23/24 fuel	8.20			502 2125			1130
CASEYS GENERAL STORES			CC Accounting: 502- - 4151-385					

* ... Over spent expenditure

Claim/ Check / Invoice #/Inv Date/Description	Vendor #/Name/	Document $/ Line $	Disc $	PO #	Fund Org Acct	Object	Proj	Cash Account
CC-92 12/26/24 Supplies		13.74			100 2125			1130
MAC'S				CC Accounting: 100- - 4152-421				
CC-92 12/26/24 Update shops		451.29			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/26/24 Patch		84.76			201 2125			1130
Bierschbach Equipment & Supply				CC Accounting: 201- - 4152-421				
CC-92 12/27/24 Patch		296.66			201 2125			1130
Bierschbach Equipment & Supply				CC Accounting: 201- - 4152-421				
CC-92 12/27/24 fuel		34.05			201 2125			1130
CASEYS GENERAL STORES				CC Accounting: 201- - 4151-385				
CC-92 12/27/24 fuel		2.84			231 2125			1130
CASEYS GENERAL STORES				CC Accounting: 231- - 4151-385				
CC-92 12/27/24 fuel		8.52			501 2125			1130
CASEYS GENERAL STORES				CC Accounting: 501- - 4151-385				
CC-92 12/27/24 fuel		8.52			502 2125			1130
CASEYS GENERAL STORES				CC Accounting: 502- - 4151-385				
CC-92 12/28/24 Patch		-211.90			201 2125			1130
Bierschbach Equipment & Supply				CC Accounting: 201- - 4152-421				
CC-92 12/30/24 Wall Panel & molding		136.89			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/30/24 Elbow		7.68			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/31/24 Bathroom		923.00			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/31/24 longboy		56.99			100 2125			1130
ACME TOOLS-FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/31/24 Return unused-Bathroom		-85.89			100 2125			1130
MENARDS - FARGO				CC Accounting: 100- - 4152-445				
CC-92 12/12/24 Home 2 suites Bismarck		326.70			100 2125			1130
Misc Credit Card Vendor				CC Accounting: 100- - 4151-341				
CC-92 12/13/24 Holly Days Posters		85.98			208 2125			1130
OFFICE DEPOT / OFFICE MAX				CC Accounting: 208- - 4152-461				
CC-92 12/13/24 Apple Cider-Holly Days		33.84			208 2125			1130
SAM'S CLUB				CC Accounting: 208- - 4152-461				
CC-92 12/13/24 supplies-Holly Days		138.07			208 2125			1130
WALMART				CC Accounting: 208- - 4152-461				
CC-92 12/13/24 fuel		47.30			100 2125			1130
CASEYS GENERAL STORES				CC Accounting: 100- - 4151-385				

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
	CC-92 12/13/24 Supplies Holly Days	43.18			208		2125			1130
Misc Credit Card Vendor			CC Accounting: 208-	-	4152-461					
	CC-92 12/14/24 Supplies Holly Days	154.92			208		2125			1130
WALMART			CC Accounting: 208-	-	4152-461					
	CC-92 12/16/24 Ad sofrtware	29.00			100		2125			1130
ADcreative.ai app			CC Accounting: 100-	-	4151-317					
	CC-92 12/30/24 Car washes	19.95			201		2125			1130
Silver Star Car Wash			CC Accounting: 201-	-	4151-381					
	CC-92 12/13/24 Empl Christmas party	166.00			100		2125			1130
BIG ERV'S BAR & GRILLE			CC Accounting: 100-	-	4151-344					
	CC-92 12/13/24 Empl Christmas party	740.80			100		2125			1130
BIG ERV'S BAR & GRILLE			CC Accounting: 100-	-	4151-344					
	CC-92 12/25/24 Job Listings	500.01			100		2125			1130
INDEED JOBS			CC Accounting: 100-	-	4151-319					
	CC-92 12/31/24 2025 membership	910.00			100		2125			1130
INTERNATIONAL CITY/COUNCIL MGMT ASSOC: I			CC Accounting: 100-	-	4151-370					
	CC-92 12/14/24 fuel	40.50			201		2125			1130
Circle K			CC Accounting: 201-	-	4151-385					
	CC-92 12/14/24 fuel	3.37			231		2125			1130
Circle K			CC Accounting: 231-	-	4151-385					
	CC-92 12/14/24 fuel	10.13			501		2125			1130
Circle K			CC Accounting: 501-	-	4151-385					
	CC-92 12/14/24 fuel	10.13			502		2125			1130
Circle K			CC Accounting: 502-	-	4151-385					
	CC-92 12/31/24 Code Training	600.00			100		2125			1130
INTERNATIONAL CODE COUNCIL			CC Accounting: 100-	-	4152-441					
	Total for Vendor:	20,376.08								
6257	457 DRN READITECH	481.97								
	2737600 01/01/25 Managed Services	214.50			100		4151	317		1130
	2737600 01/01/25 Telephone & Internet	267.47			100		4151	356		1130
	Total for Vendor:	481.97								
6251	81 ENGRAPHIX CORP	40.91								
	A5377 01/28/25 nameplates for new officials	40.91			100		4152	410		1130
	Total for Vendor:	40.91								

* ... Over spent expenditure

Claim/ Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6242	88 FASTENAL	65.88								
NDFAR31183	01/24/25 Misc Bolts, Washers & nits	65.88		Doug	201		4152	421		1130
NDFAR305874										
	Total for Vendor:	65.88								
6239	559 General Equipment & Supplies,	1,855.67								
SO0294862-	01/21/25 Parts for Pusher	2,533.45			201		4151	382		1130
RP0016880-	01/21/25 Return wrong parts	-677.78			201		4151	382		1130
	Total for Vendor:	1,855.67								
6234	105 HORACE PARK DISTRICT	5,278.22								
January 2025 10% share of state aid										
10%St Aid	01/23/25 Rev. Share/State Aid	5,278.22			100		4154	770		1130
	*** Claim from another period (12/24) ****									
6236	105 HORACE PARK DISTRICT	1,777.65								
Park District Specials Received from County - Pass Through										
Meadowlark	01/15/25 X527 2020-1 Meadowlark Par	1,587.18			303		3633			1130
Principal										
Meadowlark	01/15/25 X527 2020-1 Meadowlark Par	190.47			303		3633			1130
Interest & Penalty										
Terra Grdn	01/15/25 X528 2020-2 Terra Gardens	0.00			304		3633			1130
Principal										
Terra Grdn	01/15/25 X528 2020-2 Terra Gardens	0.00			304		3633			1130
Interest & Penalty										
6237	105 HORACE PARK DISTRICT	60,286.06								
Park District Specials Received from County - Pass Through										
Meadowlark	01/15/25 X527 2020-1 Meadowlark Par	45,931.16			303		3633			1130
Principal										
Meadowlark	01/15/25 X527 2020-1 Meadowlark Par	0.00			303		3633			1130
Interest & Penalty										
Terra Grdn	01/15/25 X528 2020-2 Terra Gardens	14,354.90			304		3633			1130
Principal										
Terra Grdn	01/15/25 X528 2020-2 Terra Gardens	0.00			304		3633			1130
Interest & Penalty										
	Total for Vendor:	67,341.93								

* ... Over spent expenditure

Claim/	Check	Vendor #/Name/ Invoice #/Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6244		690 Joel Luing	170.00								
	01/25/25	Per diem - Training	170.00			100		4151	344		1130
		Total for Vendor:	170.00								
6241		343 LARSON WELDING & MACHINE CO,	840.00								
	822241 04/27/25	straighten frog on plow	840.00			201		4151	382		1130
		Total for Vendor:	840.00								
6248		145 MARCO TECHNOLOGIES LLC	143.15								
	544890718 01/17/25	Copier Lease & Overage	143.15			100		4151	332		1130
		*** Claim from another period (12/24) ****									
6253		145 MARCO TECHNOLOGIES LLC	349.93								
	544890718 01/17/25	Copier Lease & Overage	349.93			100		4151	332		1130
		Total for Vendor:	493.08								
6247		91 METRO COG	3,879.69								
	1046 01/21/25	Horace 2025 Dues	3,879.69			100		4151	370		1130
		Total for Vendor:	3,879.69								
6250		634 METZ COMPANY, INC	125.00								
	21518 01/21/25	Weld Sign Base	125.00			100		4151	381		1130
		Total for Vendor:	125.00								
6243		458 MIDSTATES WIRELESS	1,130.66								
	206004026- 01/24/25	Radio in new plowtruck	1,130.66			201		4151	310		1130
		Total for Vendor:	1,130.66								
		*** Claim from another period (12/24) ****									
6245		161 ND DEPT OF TRANSPORTATION	6,571.80								
	2502995 01/16/25	Shared Use Path	6,571.80			220		4319	681		1130
		Total for Vendor:	6,571.80								
6246		304 NORTHERN TOOL & EQUIPMENT	90.00								
	80993917 01/17/25	1/2" NPT	90.00			502		4151	381		1130
		Total for Vendor:	90.00								

* ... Over spent expenditure

Claim/ Invoice	Check	Vendor #/Name/ Inv Date/Description	Document $/ Line $	Disc $	PO #	Fund	Org	Acct	Object	Proj	Cash Account
6249	E	682 Quadient Finance USA, Inc.	850.00								
	01/12/25	Postage	266.13			100		4152	411		1130
011225											
	01/12/25	Postage	23.29			230		4152	411		1130
011225											
	01/12/25	Postage	11.65			231		4152	411		1130
011225											
	01/12/25	Postage	186.32			501		4152	411		1130
011225											
	01/12/25	Postage	123.08			502		4152	411		1130
011225											
	01/12/25	Postage	239.53			503		4152	411		1130
011225											
		Total for Vendor:	850.00								
6235		375 Southern Valley Fire & Rescue	5,278.22								
January 2025 10% share of state aid											
	10%St Aid 01/23/25	Rev. Share/State Aid	5,278.22			100		4154	770		1130
6259		375 Southern Valley Fire & Rescue	2,400.00								
Monthly rental fire hall (6 meetings @$200) per agreement											
	1016 01/28/25	Monthly Fire Hall Rent Jan 25	1,200.00			100		4151	319		1130
	1017 01/28/25	Monthly Fire Hall Rent Feb 25	1,200.00			100		4151	319		1130
		Total for Vendor:	7,678.22								
6256		227 SWANSTON EQUIPMENT	156.68								
	P09635 01/29/25	Repl. handle	156.68			201		4151	382		1130
		Total for Vendor:	156.68								
6240		734 Western Excavation LLC	19,455.00								
	Horace-2 01/27/25	Find Water leak Nelson Dr	19,455.00*			220		4151	310		1130
		Total for Vendor:	19,455.00								
		# of Claims 27	Total:	279,083.78	# of Vendors 21						
		Total Electronic Claims		850.00							
		Total Non-Electronic Claims		278233.78							

Pledge Report

As of: 1/27/2025

Prepared for: **City of Horace**

	1/27/2025	12/27/2024	Variance
NonInterest Bearing Balances	-	-	-
FDIC Insurance	250,000.00	250,000.00	
Uninsured NonInterest Bearing*	-	-	-
Interest Bearing Balances	5,679,066.34	5,662,143.12	16,923.22
FDIC Insurance	250,000.00	250,000.00	
Uninsured Interest Bearing*	5,429,066.34	5,412,143.12	16,923.22
***Total Uninsured Deposits**	5,429,066.34	5,412,143.12	16,923.22
X 110%	5,971,972.97	5,953,357.43	18,615.54
Pledged Securities (Market Value)	6,812,734.99	6,949,303.39	(136,568.40)
Pledge Changes in Process			
Pledge Excess (Shortage)	840,762.02	995,945.96	(155,183.94)

Thank you for banking with Starion Bank! If you have any questions on this pledge report, please email financialoperations@starionbank.com.

Receipt# / Safekeeping Location	CUSIP / ASC 320	Description / Maturity / Prerefund	Pool/Type / Coupon	Moody / S&P	Original Face / Pledged Percent	Pledged: Original Face	Pledged: Par	Pledged: Book Value	Pledged: Market Value
BND: BANK OF NORTH DAKOTA	3132XGJS6 AFS	FR WN2072 10/01/30	WN2072 1.21		1,500,000.00 100.00%	1,500,000.00	1,500,000.00	1,497,470.80	1,239,540.00
BND: BANK OF NORTH DAKOTA	3137H2XY5 AFS	FHR 5154 DV 02/25/33	 2.50		1,900,000.00 100.00%	1,900,000.00	1,398,819.03	1,456,708.82	1,248,781.70
BND: BANK OF NORTH DAKOTA	3138ERXB1 AFS	FNMA 20YR 11/01/36	AL9673 4.00		1,650,000.00 100.00%	1,650,000.00	332,369.32	351,049.36	315,358.66
BND: BANK OF NORTH DAKOTA	3140X53T8 AFS	FNMA 20YR 10/01/37	FM2609 4.00		1,000,000.00 100.00%	1,000,000.00	310,446.20	333,238.73	298,171.16
BND: BANK OF NORTH DAKOTA	3140X6VM0 AFS	FNMA 20YR 10/01/37	FM3319 4.00		1,000,000.00 100.00%	1,000,000.00	319,828.51	341,547.35	305,535.37
BND: BANK OF NORTH DAKOTA	31418EJW1 AFS	FNMA 15YR 10/01/37	MA4776 4.00		3,339,194.00 100.00%	3,339,194.00	2,281,013.54	2,210,724.19	2,191,666.24
BND: BANK OF NORTH DAKOTA	31418DLQ3 AFS	FNMA 20YR - 239 WAM 02/01/40	MA3934 3.00		1,500,000.00 100.00%	1,500,000.00	325,410.06	333,763.51	289,156.13
BND: BANK OF NORTH DAKOTA	3140XRGV1 AFS	FNMA 20YR 11/01/40	FS9211 3.50		1,050,000.00 100.00%	1,050,000.00	1,003,163.73	951,479.90	924,525.73
8 Securities Pledged To:		**519 - CITY OF HORACE**				**12,939,194.00**	**7,471,050.39**	**7,475,982.66**	**6,812,734.99**

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
100 General						
1120 Cash Drawer	100.00	0.00	0.00	0.00	0.00	100.00
1130 General Checking-Starion	1,739,144.68	247,972.45	111.05	1,301,555.08	573,417.01	112,256.09
1210 Investments-Starion Bank	762,143.12	16,923.22	0.00	0.00	0.00	779,066.34
Total Fund	2,501,387.80	264,895.67	111.05	1,301,555.08	573,417.01	891,422.43
201 Highway Distribution						
1130 General Checking-Starion	85,840.73	17,025.26	242.19	0.00	31,300.53	71,807.65
204 Street Improvement Fund						
1130 General Checking-Starion	232,208.34	3,000.00	0.00	0.00	0.00	235,208.34
207 Halloween Event						
1130 General Checking-Starion	974.51	1,161.97	0.00	0.00	2,136.48	0.00
208 Holly Days Event						
1130 General Checking-Starion	25.00	425.00	0.00	150.00	300.00	0.00
209 Legacy Earnings Highway Distribution						
1130 General Checking-Starion	25,333.77	0.00	0.00	0.00	0.00	25,333.77
210 Bean Days						
1130 General Checking-Starion	0.00	1,528.00	0.00	1,500.00	28.00	0.00
211 Park District Cash in Lieu						
1130 General Checking-Starion	865,297.15	0.00	0.00	865,297.15	0.00	0.00
212 Cub Creek Park Development						
1130 General Checking-Starion	257,700.96	0.00	0.00	257,700.96	0.00	0.00
213 Emergency Services Reserve Fund						
1130 General Checking-Starion	140,000.00	50,000.00	0.00	0.00	0.00	190,000.00
214 General Fund Reserve						
1130 General Checking-Starion	650,000.00	100,000.00	0.00	0.00	0.00	750,000.00
215 Equipment Reserve						
1130 General Checking-Starion	424,572.31	100,000.00	0.00	0.00	0.00	524,572.31
216 Special Project Reserve						
1130 General Checking-Starion	-15,029.69	15,029.69	0.00	0.00	0.00	0.00
217 Downtown Neighborhood Plan						
1130 General Checking-Starion	22,820.07	0.00	0.00	0.00	0.00	22,820.07
218 Street Signs						
1130 General Checking-Starion	576.88	0.00	0.00	0.00	576.88	0.00
220 Sales Tax						
1130 General Checking-Starion	2,574,843.21	174,369.90	0.00	282,861.17	177,544.56	2,288,807.38
1210 Investments-Starion Bank	400,000.00	0.00	0.00	0.00	0.00	400,000.00
Total Fund	2,974,843.21	174,369.90		282,861.17	177,544.56	2,688,807.38
230 Vector						
1130 General Checking-Starion	46,887.33	5,082.43	125.42	0.00	999.76	51,095.42
231 Forestry						
1130 General Checking-Starion	122,074.09	3,570.04	51.81	9,315.00	1,048.64	115,332.30
232 Forestry Reserves						
1130 General Checking-Starion	0.00	9,315.00	0.00	0.00	0.00	9,315.00
303 2020-1 Meadowlark Park						
1130 General Checking-Starion	0.00	303.50	0.00	0.00	303.50	0.00
304 2020-2 Terra Gardens Park						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	2,618.81	0.00	0.00	0.00	2,618.81	0.00
326 Imp Dist 04-3 & 08-1 (4th St AJ)						
1130 General Checking-Starion	-17,046.56	17,046.56	0.00	0.00	0.00	0.00
330 Steet Paving 07-1 and 07-2						
1130 General Checking-Starion	7,678.56	0.00	0.00	0.00	0.00	7,678.56
333 2014-1 Dreamfields						
1130 General Checking-Starion	140,404.47	0.00	0.00	0.00	0.00	140,404.47
334 2015-1 Street Imp Dist/52nd Ave						
1130 General Checking-Starion	-10,120.52	0.00	0.00	0.00	0.00	-10,120.52
335 2015-2 Prairie View						
1130 General Checking-Starion	110,770.46	485.44	0.00	0.00	0.00	111,255.90
336 2010-1 Drainage Imp Dist						
1130 General Checking-Starion	-24,558.02	0.00	0.00	0.00	0.00	-24,558.02
338 2016-1 ReLine Project						
1130 General Checking-Starion	211,673.31	0.00	0.00	0.00	0.00	211,673.31
339 2015-3 Paving 73rd						
1130 General Checking-Starion	-29,673.34	0.00	0.00	0.00	0.00	-29,673.34
340 2016-2 Arrowwood 2nd Addition						
1130 General Checking-Starion	132,681.22	0.00	0.00	0.00	0.00	132,681.22
341 2016-3 Impro Dist Water Looping						
1130 General Checking-Starion	148,287.25	0.00	0.00	0.00	0.00	148,287.25
342 2017-2 SSL Fargo						
1130 General Checking-Starion	453,935.52	1,753.65	0.00	0.00	0.00	455,689.17
343 2017-1 Lost River 1 & 2						
1130 General Checking-Starion	816,456.12	630.74	0.00	0.00	0.00	817,086.86
344 2017-7 Maple Grove Drainage						
1130 General Checking-Starion	-3,929.33	0.00	0.00	0.00	0.00	-3,929.33
345 2017-8 Northwood & Southwood Dr						
1130 General Checking-Starion	58,661.69	0.00	0.00	0.00	0.00	58,661.69
346 2018-3 Terra Gardens						
1130 General Checking-Starion	524,817.38	0.00	0.00	0.00	0.00	524,817.38
347 2019-1 Lakeview Dr						
1130 General Checking-Starion	614,744.96	0.00	0.00	0.00	0.00	614,744.96
348 2019-2 76th & Roundabout						
1130 General Checking-Starion	494,289.61	4,328.97	0.00	0.00	0.00	498,618.58
349 2019-3 81st Ave & 63rd St						
1130 General Checking-Starion	275,057.14	0.00	0.00	0.00	0.00	275,057.14
350 2019-5 Visto Industrial Addition						
1130 General Checking-Starion	318,294.77	0.00	0.00	0.00	0.00	318,294.77
351 2019-6 Cub Creek						
1130 General Checking-Starion	950,146.46	47,166.75	0.00	0.00	0.00	997,313.21
352 2018-1 Sewer Improvement (100th)						
1130 General Checking-Starion	-41,244.94	1,996.59	0.00	0.00	0.00	-39,248.35
353 2019-7 Maple Lake Estates Addition						
1130 General Checking-Starion	550,617.26	46,408.50	0.00	0.00	0.00	597,025.76
354 2020-1 Southdale Farms First Addition						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	673,561.96	10,313.94	0.00	0.00	0.00	683,875.90
355 2020-2 82nd Street Construction						
1130 General Checking-Starion	198,262.50	4,803.73	0.00	0.00	0.00	203,066.23
356 2020-4 Lost River 5th Addition						
1130 General Checking-Starion	594,566.72	6,130.26	0.00	0.00	0.00	600,696.98
360 2021-3 Lakewood Addition						
1130 General Checking-Starion	611,537.98	31,425.47	0.00	0.00	0.00	642,963.45
361 2021-5 Arrowwood Third Addition Part A						
1130 General Checking-Starion	-19,093.91	0.00	0.00	0.00	0.00	-19,093.91
362 2021-1 Southdale Farms 3rd Addition						
1130 General Checking-Starion	-99,584.53	585.39	0.00	0.00	0.00	-98,999.14
363 2021-2 Terra Gardens 3rd Addition						
1130 General Checking-Starion	-26,192.62	0.00	0.00	0.00	0.00	-26,192.62
365 2022-11 Cub Creek 2nd Debt Service						
1130 General Checking-Starion	1,140,231.35	0.00	0.00	0.00	0.00	1,140,231.35
366 2022-3 Wall Ave - Sheyenne River to						
1130 General Checking-Starion	238,618.48	0.00	0.00	0.00	0.00	238,618.48
367 2022-4 Wall Ave - Sheyenne Diversion						
1130 General Checking-Starion	429,201.22	0.00	0.00	0.00	0.00	429,201.22
368 2022-8 66th St from 76th Ave to 64th						
1130 General Checking-Starion	457,238.09	0.00	0.00	0.00	0.00	457,238.09
369 2022-9 63rd St (from Wall Ave to 82n						
1130 General Checking-Starion	243,137.29	0.00	0.00	0.00	0.00	243,137.29
370 2022-10 Chestnut Drive Rehab						
1130 General Checking-Starion	95,643.08	0.00	0.00	0.00	0.00	95,643.08
371 2022-12 Rivers Edge Second Addition						
1130 General Checking-Starion	1,135,651.91	0.00	0.00	0.00	0.00	1,135,651.91
372 2021-4 Lift Station SA-14 Debt Service						
1130 General Checking-Starion	75,922.76	0.00	0.00	0.00	0.00	75,922.76
373 2021-6 Lift Station SA-13 Debt Service						
1130 General Checking-Starion	65,333.97	0.00	0.00	0.00	0.00	65,333.97
374 2022-2 Lost River 7th Debt Service						
1130 General Checking-Starion	260,135.40	753,669.02	0.00	0.00	0.00	1,013,804.42
375 2022-5 Maple Lakes Phase 2 Debt Service						
1130 General Checking-Starion	258,137.38	0.00	0.00	0.00	0.00	258,137.38
376 2022-6 Southdale Farms 4th Debt Service						
1130 General Checking-Starion	1,234,957.03	2,365,835.23	0.00	0.00	0.00	3,600,792.26
377 2022-7 Southdale Farms 5th Debt Service						
1130 General Checking-Starion	163,833.64	450,442.97	0.00	0.00	0.00	614,276.61
378 2021-5 Arrowood 3rd Part B Debt Service						
1130 General Checking-Starion	57,941.57	0.00	0.00	0.00	0.00	57,941.57
379 2022-1 Visto Industrial Drive Debt Service 2024A						
1130 General Checking-Starion	120,164.75	0.00	0.00	0.00	0.00	120,164.75
380 2024B TRIB Debt Service 2023-1 Southdale Farms 6th Addition						
1130 General Checking-Starion	288,534.58	0.00	0.00	0.00	0.00	288,534.58
381 2024B TRIB Debt Service 2023-3 You Betcha Dr						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	394,410.08	0.00	0.00	0.00	0.00	394,410.08
382 2024B TRIB Debt Service 2023-4 64th Ave						
1130 General Checking-Starion	901,372.50	0.00	0.00	0.00	0.00	901,372.50
383 2024B TRIB Debt Service 2024-1 65th Ave						
1130 General Checking-Starion	37,676.42	0.00	0.00	0.00	0.00	37,676.42
384 2024B TRIB Debt Service 2024-3 Deer Creek Estates 2nd and 3r						
1130 General Checking-Starion	359,595.17	0.00	0.00	0.00	0.00	359,595.17
400 Public Facilities						
1130 General Checking-Starion	5,987,746.33	0.00	0.00	0.00	0.00	5,987,746.33
1210 Investments-Starion Bank	2,000,000.00	0.00	0.00	0.00	0.00	2,000,000.00
Total Fund	7,987,746.33					7,987,746.33
401 Prairie Dog Fund						
1210 Investments-Starion Bank	0.00	2,500,000.00	0.00	0.00	0.00	2,500,000.00
402 Remaining Capital District Funds						
1130 General Checking-Starion	0.00	2,170,473.25	0.00	0.00	1,646.64	2,168,826.61
403 Uncommitted CIP						
1130 General Checking-Starion	0.00	1,433,875.00	0.00	0.00	67,978.04	1,365,896.96
404 Park District CIP						
1130 General Checking-Starion	0.00	1,122,998.11	0.00	0.00	0.00	1,122,998.11
406 2024-6 Willow Grove Addition						
1130 General Checking-Starion	-8,663.74	0.00	0.00	0.00	1,954.50	-10,618.24
407 Flush to Fargo Part II						
1130 General Checking-Starion	-470.00	0.00	0.00	0.00	0.00	-470.00
408 2024-7 Southdale Farms 9th Addition						
1130 General Checking-Starion	-8,675.34	0.00	0.00	0.00	0.00	-8,675.34
409 Southdale Farms 8th Addition						
1130 General Checking-Starion	-1,685.24	0.00	0.00	0.00	0.00	-1,685.24
439 ReLine Project 2016-1						
1130 General Checking-Starion	-1,499.95	1,499.95	0.00	0.00	0.00	0.00
443 SSL Fargo 2017-2 W1600128						
1130 General Checking-Starion	-136,659.48	136,659.48	0.00	0.00	0.00	0.00
444 2017-1 Lost River 1st, 2nd, 3rd, 4th, 6th W213103.02						
1130 General Checking-Starion	218,008.04	0.00	0.00	218,008.04	0.00	0.00
445 Project 2017-4						
1130 General Checking-Starion	-114.00	114.00	0.00	0.00	0.00	0.00
450 2019-4 Sewer Impr (Horseshoe Bend)						
1130 General Checking-Starion	-105,525.80	105,525.80	0.00	0.00	0.00	0.00
451 2018-1 Sewer Impr Dist (100th) W1700119						
1130 General Checking-Starion	39,375.14	0.00	0.00	39,375.14	0.00	0.00
452 2018-3 Terra Gardens						
1130 General Checking-Starion	-101,504.17	101,504.17	0.00	0.00	0.00	0.00
453 2019-1 Lakeview Drive						
1130 General Checking-Starion	267,485.76	0.00	0.00	267,485.76	0.00	0.00
454 2019-2 76th & Roundabout W1900023						
1130 General Checking-Starion	-87,278.81	87,278.81	0.00	0.00	0.00	0.00
455 2019-3 81st Ave & 63rd St W1900045						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	282,038.15	0.00	0.00	282,038.15	0.00	0.00
456 2019-5 Visto Industrial Additions						
1130 General Checking-Starion	102,814.03	0.00	0.00	102,814.03	0.00	0.00
457 2019-6 Cub Creek						
1130 General Checking-Starion	274,019.23	0.00	0.00	274,019.23	0.00	0.00
458 2019-7 Maple Lake Estates Addition						
1130 General Checking-Starion	258,190.31	0.00	0.00	258,190.31	0.00	0.00
459 2020-1 Southdale Farms First Addition						
1130 General Checking-Starion	232,467.31	0.00	0.00	232,467.31	0.00	0.00
461 2020-2 82nd Street Construction W1900110						
1130 General Checking-Starion	138,578.64	0.00	0.00	138,578.64	0.00	0.00
463 2020-4 Lost River 5th Addition						
1130 General Checking-Starion	82,191.50	0.00	0.00	82,191.50	0.00	0.00
464 2020-5 Storm Sewer Impr Dist (Oxbow Drainage)						
1130 General Checking-Starion	-21,616.48	21,616.48	0.00	0.00	0.00	0.00
465 2020-6 Water Impr Dist (Line Replacement)						
1130 General Checking-Starion	124.41	0.00	0.00	0.00	169,975.64	-169,851.23
466 2020-7 Water Impr Dist (Connection to Cass Rural)						
1130 General Checking-Starion	-574.55	0.00	0.00	0.00	0.00	-574.55
467 2021-1 Southdale Farms 3rd Addition W2000133						
1130 General Checking-Starion	-41,698.46	41,698.46	0.00	0.00	0.00	0.00
468 2021-2 Terra Gardens 3rd Addition W2100092						
1130 General Checking-Starion	172,049.58	0.00	0.00	172,049.58	0.00	0.00
469 2021-3 Lakeview Addition W2100092						
1130 General Checking-Starion	-29,406.69	29,406.69	0.00	0.00	0.00	0.00
470 Sanitary Sewer 2021-4 (Lift Station SA-14) W2100063						
1130 General Checking-Starion	265,187.46	0.00	0.00	0.00	331.50	264,855.96
471 2021-5 Arrowwood 3rd Addition W2003103.33						
1130 General Checking-Starion	45,285.56	0.00	0.00	103,255.56	0.00	-57,970.00
472 2021-6 Sanitary Sewer (Lift Station SA-13 Horseshoe Bend)						
1130 General Checking-Starion	155,855.32	0.00	0.00	105,525.80	1,201.50	49,128.02
473 2021-7 Deer Creek Estates 2020 W2003103.06						
1130 General Checking-Starion	-45,294.82	18,692.32	0.00	5,346.64	0.00	-31,949.14
474 2022-1 Visto Industrial Drive						
1130 General Checking-Starion	-13,623.94	13,623.94	0.00	0.00	0.00	0.00
475 2022-2 Lost River 7th Addition W21-03-106.03						
1130 General Checking-Starion	755,326.02	0.00	0.00	753,669.02	1,657.00	0.00
476 2022-3 Wall Ave - Sheyenne River to Cass Co. Hwy 17						
1130 General Checking-Starion	480,836.42	1,569.60	0.00	0.00	32,519.92	449,886.10
477 2022-4 Wall Ave - Sheyenne Diversion to Sheyenne River						
1130 General Checking-Starion	946,669.96	3,312.58	0.00	0.00	516.00	949,466.54
478 2022-5 Maple Lakes Addition Phase 2						
1130 General Checking-Starion	507,765.47	0.00	0.00	0.00	8,235.48	499,529.99
479 2022-6 Southdale Farms 4th Addition W2100178						
1130 General Checking-Starion	3,221,420.74	0.00	0.00	2,365,835.23	667.50	854,918.01
480 2022-7 Southdale Farms 5th Addition W21-03-106.18						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	663,930.27	0.00	0.00	450,442.97	2,478.42	211,008.88
481 2022-8 66th St from 76th Ave to 64th Ave						
1130 General Checking-Starion	1,001,320.21	3,491.65	0.00	0.00	4,020.38	1,000,791.48
482 2022-9 63rd St (from Wall Ave to 82nd Ave)						
1130 General Checking-Starion	1,204,681.85	4,078.76	0.00	0.00	39,689.89	1,169,070.72
483 2022-10 Chestnut Drive Rehab W17--00-063						
1130 General Checking-Starion	3,556.17	12.46	0.00	0.00	0.00	3,568.63
484 2022-11 Cub Creek Second Addition W21-03-103.31						
1130 General Checking-Starion	2,330,091.12	8,110.26	0.00	0.00	13,605.77	2,324,595.61
485 2022-12 Rivers Edge Second Addition W20-03-103.02						
1130 General Checking-Starion	5,015,992.68	13,239.33	0.00	0.00	1,234,520.02	3,794,711.99
486 2022-13 Altenburg Acres Second Addition						
1130 General Checking-Starion	-9,914.55	0.00	0.00	0.00	0.00	-9,914.55
487 2023-1 Southdale Farms Sixth Addition						
1130 General Checking-Starion	825,051.06	1,944.12	0.00	0.00	269,762.07	557,233.11
489 2023-3 7th St E Visto 3rd Addition to Lagoons						
1130 General Checking-Starion	918,100.48	2,837.53	0.00	0.00	107,632.77	813,305.24
490 2023-4 64th Ave from CR17 E 3200 LF						
1130 General Checking-Starion	2,607,242.12	7,064.58	0.00	0.00	589,426.50	2,024,880.20
491 2023-5 81st St and Wall Ave						
1130 General Checking-Starion	-5,379.00	0.00	0.00	0.00	8,544.84	-13,923.84
492 2023-6 76th and 81st Forcemain						
1130 General Checking-Starion	-10,222.14	0.00	0.00	0.00	0.00	-10,222.14
493 2023-7 Sparks First Addition						
1130 General Checking-Starion	-28,782.16	0.00	0.00	0.00	1,789.50	-30,571.66
494 Lost River West Addition						
1130 General Checking-Starion	-33,732.10	0.00	0.00	0.00	168.00	-33,900.10
495 2024-1 65th Ave						
1130 General Checking-Starion	85,521.22	208.96	0.00	0.00	25,837.11	59,893.07
496 2024-2 El Dorado Addition						
1130 General Checking-Starion	-9,916.52	0.00	0.00	0.00	0.00	-9,916.52
497 2024-3 Deer Creek Estates 2nd and 3rd Addition						
1130 General Checking-Starion	3,067,724.95	7,661.64	0.00	35,412.26	843,961.78	2,196,012.55
498 2024-4 8th Ave (Nelson Dr to 5th St)						
1130 General Checking-Starion	-32,915.83	0.00	0.00	0.00	0.00	-32,915.83
499 2024-5 Lift Station #1 Replacement						
1130 General Checking-Starion	-524.50	0.00	0.00	0.00	0.00	-524.50
501 Water Fund						
1130 General Checking-Starion	534,698.86	49,306.91	0.00	260,000.00	74,739.42	249,266.35
502 Sewer Fund						
1130 General Checking-Starion	225,315.77	45,276.73	225.27	201,499.95	52,789.94	16,527.88
503 Solid Waste Fund						
1130 General Checking-Starion	86,149.42	52,840.21	805.76	33,875.00	50,259.41	55,660.98
509 Water Reserve Fund						
1130 General Checking-Starion	40,000.00	60,000.00	0.00	0.00	0.00	100,000.00
510 Sewer Reserve Fund						

Fund/Account	Beginning Balance	Received	Transfers In	Disbursed	Transfers Out	Ending Balance
1130 General Checking-Starion	270,000.00	0.00	0.00	0.00	0.00	270,000.00
710 Payroll Clearing Fund						
1130 General Checking-Starion	564.58	0.00	141,985.53	142,492.06	0.00	58.05
730 Claims Clearing Fund						
1130 General Checking-Starion	83,713.00	0.00	4,252,636.68	3,830,865.92	0.00	505,483.76
Totals	58,572,280.38	12,534,651.45	4,396,183.71	13,073,817.46	4,396,183.71	58,033,114.37

*** Transfers In and Transfers Out columns should match, with the following exceptions:
1) Cancelled electronic checks increase the Transfers In column. Disbursed column will be overstated by the same amount and will not balance to the Redeemed Checks List.
2) Payroll Journal Vouchers including local deductions with receipt accounting will reduce the Transfers Out column by the total amount of these checks.

100 General

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3110	Property Tax Revenue	16,639.53	1,655,854.39	1,980,850.00	-324,995.61	84
3111	Property Tax Mobile Home Levy	30.86	3,580.58	3,700.00	-119.42	97
3113	Property Tax Interest & Penalty	1,747.66	9,622.88	8,000.00	1,622.88	120
3115	Telephone Tax levy		26.23	26.00	0.23	101
3211	Beer/Liquor License		6,462.50	6,450.00	12.50	100
3215	Food Truck License		100.00	100.00		100
3223	ROW Permits	200.00	4,200.00	4,000.00	200.00	105
3224	Gaming Grants/Charitable Gaming Permits		1,720.68	1,725.00	-4.32	100
3225	Special Event Permit		100.00	150.00	-50.00	67
3227	Planning & Zoning Permits		900.00	850.00	50.00	106
3230	Vehicle Permits		25.00	25.00		100
3231	Vehicle Over-Weight Permits		23,905.00	21,000.00	2,905.00	114
3241	New Commercial Building Permit		69,465.00	71,500.00	-2,035.00	97
3242	New Residential Building Permit	10,563.00	338,659.85	321,500.00	17,159.85	105
3243	Commercial Remodel Building Permit		5,713.50	6,500.00	-786.50	88
3244	Residential Remodel Building Permit	1,840.00	11,233.50	8,500.00	2,733.50	132
3245	Accessory Building Permit		3,537.00	3,600.00	-63.00	98
3246	Other Building Permit	350.00	8,610.00	3,850.00	4,760.00	224
3247	Fence Permit	100.00	4,442.45	4,250.00	192.45	105
3248	Sign Permit		476.50	425.00	51.50	112
3251	New Subdivision Application	1,850.00	18,440.00	16,600.00	1,840.00	111
3252	Zone Change Application		2,600.00	2,650.00	-50.00	98
3254	Variance Application		1,300.00	1,300.00		100
3255	Simple Lot Split Application		375.00	375.00		100
3257	Cert of Zoning Compliance		100.00	50.00	50.00	200
3351	State Aid Distribution	43,342.84	461,226.96	461,500.00	-273.04	100
3352	Cigarette Tax	2,650.04	4,936.22	4,000.00	936.22	123
3361	Franchise Fees	9,295.65	134,151.04	135,000.00	-848.96	99
3362	Homestead Credit		40,340.44	40,340.00	0.44	100
3441	Commercial Plan Review		24,320.42	26,500.00	-2,179.58	92
3442	Residential Permit Plan Review	3,697.05	117,959.70	115,000.00	2,959.70	103
3443	Commercial Remodel Plan Review		1,983.21	2,500.00	-516.79	79
3444	Residential Remodel Plan Review	644.00	3,710.35	3,250.00	460.35	114
3445	Accessory Building Plan Review		1,157.45	1,200.00	-42.55	96
3446	Other Plan Review	122.50	2,772.50	3,000.00	-227.50	92
3511	Citation Revenue	45.00	5,441.00	5,600.00	-159.00	97
3515	Over Weight Vechicle Fine		600.00	600.00		100
3610	Interest Earnings	146,681.57	1,618,517.44	1,530,000.00	88,517.44	106
3623	Horace Happenings/Advertising Revenue		12,485.00	12,500.00	-15.00	100
3687	Bond Admin Fee Pass-Through		3,995,615.63	3,900,000.00	95,615.63	102
3691	Misc. Revenue	1,379.39	5,095.54	2,500.00	2,595.54	204
3693	Cass Rural Water Infrastructure		1,944,253.12	1,944,250.00	3.12	100
						99

100 General

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
	Total Revenue	241,179.09	10,546,016.08	10,655,716.00	-109,699.92	99
Expenses						
4105	Mayor & Governing Board					
150	Mayor and Governing Board		48,000.00	48,000.00		100
220	FICA Expense		3,672.00	3,675.00	3.00	100
240	Workers Comp		120.60	120.00	-0.60	101
260	Life, LTD, STD, Accident Insurance		292.95	300.00	7.05	98
	Total Account		52,085.55	52,095.00	9.45	100
4140	City Staff Salaries & Benefits					
110	Salaries	69,644.46	921,102.50	945,000.00	23,897.50	97
116	Overtime	223.28	3,062.07	4,000.00	937.93	77
210	Group Health Insurance	12,119.79	144,215.66	146,000.00	1,784.34	99
220	FICA Expense	5,158.73	68,529.18	71,000.00	2,470.82	97
230	Pension / Deferred Comp	3,715.75	49,171.71	50,000.00	828.29	98
240	Workers Comp		1,276.62	1,400.00	123.38	91
260	Life, LTD, STD, Accident Insurance	525.23	6,529.64	6,600.00	70.36	99
	Total Account	91,387.24	1,193,887.38	1,224,000.00	30,112.62	98
4151	Contractuals					
310	Professional Services	6,505.44	108,849.10	115,000.00	6,150.90	95
311	Audit Fees		62,370.00	62,500.00	130.00	100
312	Legal Fees	33,913.19	162,606.06	150,000.00	-12,606.06	108
313	Bank Fees	20.00	198.64	250.00	51.36	79
314	Planning/Zoning Services	16,229.69	24,498.44	10,500.00	-13,998.44	233
315	Interstate Engineering	25,932.02	134,719.24	140,000.00	5,280.76	96
317	Software	30,942.97	98,131.50	100,000.00	1,868.50	98
319	Other Contractual	3,495.01	14,280.01	18,500.00	4,219.99	77
320	Insurance	225.00	37,500.00	42,000.00	4,500.00	89
332	Equipment Lease	1,446.57	8,861.62	8,000.00	-861.62	111
341	Travel/Meetings	1,002.01	13,032.81	14,000.00	967.19	93
344	Meals	985.95	2,658.89	4,000.00	1,341.11	66
350	Utilities	303.81	718.35	500.00	-218.35	144
351	Electricity	798.52	2,532.47	2,300.00	-232.47	110
356	Telephone/Internet/Communications	1,963.36	18,070.59	17,500.00	-570.59	103
360	Publishing	270.56	20,033.82	20,000.00	-33.82	100
370	Subscriptions and Dues	1,020.00	12,199.94	14,000.00	1,800.06	87
381	Repairs and Maintenance	1,542.75	11,143.72	11,000.00	-143.72	101
382	Equipment Repairs and Maintenance	293.46	818.57	750.00	-68.57	109
383	Vehicle Repairs and Maintenance	107.95	107.95	5,000.00	4,892.05	2
384	Building Maintenance	1,145.24	5,593.86	5,000.00	-593.86	112
385	Fuel (Gas/Diesel)	291.07	2,789.80	3,000.00	210.20	93
390	Law Enforcement	34,064.68	204,388.00	205,000.00	612.00	100
391	Administrative Fees			500.00	500.00	
410	Office Supplies		32.99		-32.99	

100 General

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
421	Operating Supplies		207.95		-207.95	
	Total Account	162,499.25	946,344.32	949,300.00	2,955.68	100
4152	Commodities					
410	Office Supplies	813.44	7,065.76	6,800.00	-265.76	104
411	Postage	658.52	6,063.24	6,500.00	436.76	93
421	Operating Supplies	2,895.09	20,021.21	18,250.00	-1,771.21	110
422	Uniforms	675.46	2,706.74	2,000.00	-706.74	135
423	Safety Supplies		2,089.20	2,300.00	210.80	91
433	License & Permits		205.00	200.00	-5.00	103
441	Training	1,966.65	7,393.51	5,200.00	-2,193.51	142
445	Special Projects	15,531.02	24,242.50	20,100.00	-4,142.50	121
461	Community Engagement	1,236.97	34,157.35	40,500.00	6,342.65	84
490	Miscellaneous Expense	9,346.96	13,755.93	5,250.00	-8,505.93	262
491	Snow Removal Damages			1,500.00	1,500.00	
	Total Account	33,124.11	117,700.44	108,600.00	-9,100.44	108
4153	Capital Outlay					
641	Equipment Purchase	359,446.53	681,019.42	655,000.00	-26,019.42	104
642	Office Equipment Purchase		581.43	600.00	18.57	97
643	Software/Computer Purchase		13,713.44	17,500.00	3,786.56	78
681	Construction Costs	836.47	836.47		-836.47	
	Total Account	360,283.00	696,150.76	673,100.00	-23,050.76	103
4154	Other / Misc. Expense					
770	Share of State Aid Distribution	8,668.56	97,897.40	92,500.00	-5,397.40	106
790	Contingency			135,000.00	135,000.00	
	Total Account	8,668.56	97,897.40	227,500.00	129,602.60	43
	Total Expenses	655,962.16	3,104,065.85	3,234,595.00	130,529.15	96
	Net Income from Operations	-414,783.07	7,441,950.23			
	Other Revenue					
3999	Transfers In	1,650.00	1,650.00		1,650.00	
	Total Other Revenue	1,650.00	1,650.00	0.00	1,650.00	

100 General

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
	Other Expenses					
7999	Transfers Out					
884	Cass Rural Water Infra Transfer		1,944,253.12	1,944,250.00	-3.12	100
885	Transfer to Emergency Services Reserve Fund	50,000.00	50,000.00	100,000.00	50,000.00	50
891	Transfers Out		3,995,615.63	3,900,000.00	-95,615.63	102
893	Transfer to Bond and Interest/CIP	1,000,000.00	1,000,000.00	1,500,000.00	500,000.00	67
894	Transfer to Equipment Reserve	100,000.00	100,000.00	200,000.00	100,000.00	50
895	Transfer to Special Streets and Hwy			266,455.00	266,455.00	
896	Transfer to Reserve Fund	100,000.00	100,000.00	250,000.00	150,000.00	40
	Total Account	1,250,000.00	7,189,868.75	8,160,705.00	970,836.25	88
	Total Other Expenses	1,250,000.00	7,189,868.75	8,160,705.00	970,836.25	88
	Net Income	-1,663,133.07	253,731.48			

201 Highway Distribution

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3353	Highway Tax Distribution	17,025.26	158,901.26	151,850.00	7,051.26	105
3691	Misc. Revenue		2,619.22	2,620.00	-0.78	100
						105
	Total Revenue	17,025.26	161,520.48	154,470.00	7,050.48	105
Expenses						
4140	City Staff Salaries & Benefits					
110	Salaries	9,003.83	114,574.18	114,000.00	-574.18	101
116	Overtime	809.62	9,759.17	11,000.00	1,240.83	89
119	On Call Hours	237.00	3,217.25	3,300.00	82.75	97
210	Group Health Insurance	1,789.09	21,497.05	21,500.00	2.95	100
220	FICA Expense	746.56	9,481.21	9,500.00	18.79	100
230	Pension / Deferred Comp	586.14	7,398.92	7,500.00	101.08	99
240	Workers Comp		2,167.14	2,200.00	32.86	99
260	Life, LTD, STD, Accident Insurance	72.52	872.34	900.00	27.66	97
	Total Account	13,244.76	168,967.26	169,900.00	932.74	99
4151	Contractuals					
310	Professional Services		2,449.78	3,500.00	1,050.22	70
332	Equipment Lease		4,699.50	4,700.00	0.50	100
341	Travel/Meetings			500.00	500.00	
350	Utilities	455.72	1,077.61	675.00	-402.61	160
351	Electricity	12,075.46	61,614.36	55,250.00	-6,364.36	112
370	Subscriptions and Dues			500.00	500.00	
381	Repairs and Maintenance	39.90	49,293.42	52,000.00	2,706.58	95
382	Equipment Repairs and Maintenance	979.48	9,982.94	8,500.00	-1,482.94	117
383	Vehicle Repairs and Maintenance	354.16	25,361.53	28,500.00	3,138.47	89
384	Building Maintenance			2,500.00	2,500.00	
385	Fuel (Gas/Diesel)	1,878.73	18,859.85	18,500.00	-359.85	102
	Total Account	15,783.45	173,338.99	175,125.00	1,786.01	99
4152	Commodities					
410	Office Supplies			7,000.00	7,000.00	
421	Operating Supplies	515.08	13,116.44	6,000.00	-7,116.44	219
422	Uniforms		1,325.10	1,350.00	24.90	98
423	Safety Supplies	235.00	908.16	900.00	-8.16	101
431	Lab Testing			500.00	500.00	
432	Chemicals		48.50	50.00	1.50	97
433	License & Permits		104.95	100.00	-4.95	105
441	Training			2,500.00	2,500.00	
445	Special Projects		4,364.41	7,500.00	3,135.59	58
491	Snow Removal Damages			2,000.00	2,000.00	

201 Highway Distribution

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
	Total Account	750.08	19,867.56	27,900.00	8,032.44	71
4153	Capital Outlay					
635	System Improvements			8,000.00	8,000.00	
641	Equipment Purchase		23,385.94	25,000.00	1,614.06	94
	Total Account		23,385.94	33,000.00	9,614.06	71
4154	Other / Misc. Expense					
790	Contingency			15,000.00	15,000.00	
	Total Account			15,000.00	15,000.00	
4312	Highway Distribution					
383	Vehicle Repairs and Maintenance	87.96	87.96		-87.96	
	Total Account	87.96	87.96		-87.96	
	Total Expenses	29,866.25	385,647.71	420,925.00	35,277.29	92
	Net Income from Operations	-12,840.99	-224,127.23			
	Other Revenue					
3999	Transfers In			266,455.00	-266,455.00	
	Total Other Revenue	0.00	0.00	266,455.00	-266,455.00	
	Net Income	-12,840.99	-224,127.23			

210 Bean Days

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3640	Event Revenue/Sponsorships	1,500.00	12,300.00		12,300.00	
	Total Revenue	1,500.00	12,300.00	0.00	12,300.00	
Expenses						
4151	Contractuals					
317	Software	28.00	308.00		-308.00	
360	Publishing		842.28		-842.28	
	Total Account	28.00	1,150.28		-1,150.28	
4152	Commodities					
461	Community Engagement	1,500.00	39,789.19		-39,789.19	
	Total Account	1,500.00	39,789.19		-39,789.19	
	Total Expenses	1,528.00	40,939.47	0.00	-40,939.47	
	Net Income from Operations	-28.00	-28,639.47			
Other Revenue						
3999	Transfers In	28.00	24,933.05		24,933.05	
	Total Other Revenue	28.00	24,933.05	0.00	24,933.05	
	Net Income	0.00	-3,706.42			

215 Equipment Reserve

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
	Expenses					
4153	Capital Outlay					
641	Equipment Purchase		194,899.48		-194,899.48	
	Total Account		194,899.48		-194,899.48	
	Total Expenses	0.00	194,899.48	0.00	-194,899.48	
	Net Income from Operations		-194,899.48			
	Other Revenue					
3999	Transfers In	100,000.00	100,000.00		100,000.00	
	Total Other Revenue	100,000.00	100,000.00	0.00	100,000.00	
	Net Income	100,000.00	-94,899.48			

220 Sales Tax

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3131	Sales Tax Revenue	174,369.90	1,742,374.87	1,772,000.00	-29,625.13	98
						98
	Total Revenue	174,369.90	1,742,374.87	1,772,000.00	-29,625.13	98
Expenses						
4151	Contractuals					
310	Professional Services		155,300.00	155,500.00	200.00	100
315	Interstate Engineering		106,205.90	3,500.00	-102,705.90	3034
381	Repairs and Maintenance	24,254.75	24,254.75		-24,254.75	
	Total Account	24,254.75	285,760.65	159,000.00	-126,760.65	180
4152	Commodities					
480	Special Assessments - Real EstateTaxes		156,407.46	156,500.00	92.54	100
	Total Account		156,407.46	156,500.00	92.54	100
4319	Infrastructure					
315	Interstate Engineering	18,142.11	18,142.11		-18,142.11	
681	Construction Costs	38,988.60	80,745.73	50,000.00	-30,745.73	161
	Total Account	57,130.71	98,887.84	50,000.00	-48,887.84	198
	Total Expenses	81,385.46	541,055.95	365,500.00	-175,555.95	148
	Net Income from Operations	92,984.44	1,201,318.92			
Other Expenses						
7999	Transfers Out					
890	Transfers Out - Capital Contributions	282,861.17	502,943.91	500,000.00	-2,943.91	101
	Total Account	282,861.17	502,943.91	500,000.00	-2,943.91	101
	Total Other Expenses	282,861.17	502,943.91	500,000.00	-2,943.91	101
	Net Income	-189,876.73	698,375.01			

230 Vector

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3355	Vector Fees	5,265.40	57,974.12	58,250.00	-275.88	100
3490	Late Charges	74.50	781.50	800.00	-18.50	98
						100
	Total Revenue	5,339.90	58,755.62	59,050.00	-294.38	100
Expenses						
4140	City Staff Salaries & Benefits					
110	Salaries	630.18	7,659.64	7,675.00	15.36	100
116	Overtime	57.37	690.73	775.00	84.27	89
119	On Call Hours	16.63	216.93	225.00	8.07	96
210	Group Health Insurance	125.41	1,443.67	1,475.00	31.33	98
220	FICA Expense	52.31	636.82	650.00	13.18	98
230	Pension / Deferred Comp	41.09	499.94	525.00	25.06	95
240	Workers Comp		141.37	150.00	8.63	94
260	Life, LTD, STD, Accident Insurance	5.11	58.62	60.00	1.38	98
	Total Account	928.10	11,347.72	11,535.00	187.28	98
4151	Contractuals					
310	Professional Services		15,725.98	15,750.00	24.02	100
317	Software	12.00	69.00	125.00	56.00	55
	Total Account	12.00	15,794.98	15,875.00	80.02	99
4152	Commodities					
411	Postage	24.66	297.82	325.00	27.18	92
432	Chemicals		9,944.50	10,000.00	55.50	99
433	License & Permits			500.00	500.00	
445	Special Projects			500.00	500.00	
490	Miscellaneous Expense	4.86	4.86		-4.86	
	Total Account	29.52	10,247.18	11,325.00	1,077.82	90
4153	Capital Outlay					
641	Equipment Purchase		55,215.96	56,000.00	784.04	99
	Total Account		55,215.96	56,000.00	784.04	99
	Total Expenses	969.62	92,605.84	94,735.00	2,129.16	98
	Net Income from Operations	4,370.28				
			-33,850.22			

230 Vector

Account Object	Description	Current Year Current Month	Current Year Current YTD	Current Year Budget	Current Year Variance	Current Year %
	Net Income	4,370.28			-33,850.22	

231 Forestry

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3356	Forestry Revenue	2,105.01	23,030.83	23,250.00	-219.17	99
3490	Late Charges	75.00	785.50	800.00	-14.50	98
3639	Boulevard Tree Program	1,500.00	90,272.94	87,500.00	2,772.94	103
						102
	Total Revenue	3,680.01	114,089.27	111,550.00	2,539.27	102
Expenses						
4140	City Staff Salaries & Benefits					
110	Salaries	630.17	7,659.61	7,700.00	40.39	99
116	Overtime	57.35	690.67	775.00	84.33	89
119	On Call Hours	16.59	216.76	225.00	8.24	96
210	Group Health Insurance	125.40	1,443.58	1,475.00	31.42	98
220	FICA Expense	52.30	636.79	650.00	13.21	98
230	Pension / Deferred Comp	41.09	499.93	525.00	25.07	95
240	Workers Comp		141.37	150.00	8.63	94
260	Life, LTD, STD, Accident Insurance	5.11	58.62	60.00	1.38	98
	Total Account	928.01	11,347.33	11,560.00	212.67	98
4151	Contractuals					
310	Professional Services			5,000.00	5,000.00	
317	Software	12.00	69.00	125.00	56.00	55
319	Other Contractual		250.00	250.00		100
332	Equipment Lease		3,591.00	3,600.00	9.00	100
382	Equipment Repairs and Maintenance		329.58	350.00	20.42	94
385	Fuel (Gas/Diesel)	156.46	723.08	650.00	-73.08	111
	Total Account	168.46	4,962.66	9,975.00	5,012.34	50
4152	Commodities					
410	Office Supplies			500.00	500.00	
411	Postage	12.33	148.90	175.00	26.10	85
421	Operating Supplies	215.00	24,571.38	25,000.00	428.62	98
432	Chemicals		512.00	525.00	13.00	98
445	Special Projects		2,934.00	3,000.00	66.00	98
490	Miscellaneous Expense	2.00	2.00		-2.00	
	Total Account	229.33	28,168.28	29,200.00	1,031.72	96
4153	Capital Outlay					
641	Equipment Purchase		45,390.56	46,000.00	609.44	99
	Total Account		45,390.56	46,000.00	609.44	99
4154	Other / Misc. Expense					
761	Blvd Tree Program Refund		1,285.00	3,000.00	1,715.00	43

231 Forestry

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
790	Contingency			2,500.00	2,500.00	
	Total Account		1,285.00	5,500.00	4,215.00	23
	Total Expenses	1,325.80	91,153.83	102,235.00	11,081.17	89
	Net Income from Operations	2,354.21	22,935.44			
Other Expenses						
7999	Transfers Out					
896	Transfer to Reserve Fund	9,315.00	9,315.00	9,315.00		100
	Total Account	9,315.00	9,315.00	9,315.00		100
	Total Other Expenses	9,315.00	9,315.00	9,315.00	0.00	100
	Net Income	-6,960.79	13,620.44			

400 Public Facilities

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3685	Administrative Service Revenue		227,820.05		227,820.05	
	Total Revenue	0.00	227,820.05	0.00	227,820.05	
Expenses						
4151	Contractuals					
310	Professional Services		40,200.00		-40,200.00	
	Total Account		40,200.00		-40,200.00	
4153	Capital Outlay					
644	Land Purchase		360,817.33		-360,817.33	
	Total Account		360,817.33		-360,817.33	
4319	Infrastructure					
310	Professional Services		496,624.00		-496,624.00	
	Total Account		496,624.00		-496,624.00	
	Total Expenses	0.00	897,641.33	0.00	-897,641.33	
	Net Income from Operations		-669,821.28			
Other Revenue						
3999	Transfers In		3,995,615.63		3,995,615.63	
	Total Other Revenue	0.00	3,995,615.63	0.00	3,995,615.63	

400 Public Facilities

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Other Expenses						
7999	Transfers Out					
891	Transfers Out		118,291.76		-118,291.76	
	Total Account		118,291.76		-118,291.76	
	Total Other Expenses	0.00	118,291.76	0.00	-118,291.76	
	Net Income	0.00	3,207,502.59			

501 Water Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3471	Water Charges	41,131.01	521,961.05	545,000.00	-23,038.95	96
3473	Hook-up / Tap Fees	2,000.00	115,084.00	113,500.00	1,584.00	101
3490	Late Charges	550.00	6,060.00	6,025.00	35.00	101
3491	Utility Surcharges	6,220.72	92,070.78	93,250.00	-1,179.22	99
3690	State Grant Revenue		-414,770.00		-414,770.00	
3691	Misc. Revenue	10.00	-12,237.40	1,525.00	-13,762.40	-802
3692	FM Diversion Revenue		-701,840.00		-701,840.00	
						-52
	Total Revenue	49,911.73	-393,671.57	759,300.00	-1,152,971.57	-52
Expenses						
4140	City Staff Salaries & Benefits					
110	Salaries	11,923.15	157,130.71	151,500.00	-5,630.71	104
116	Overtime	954.48	11,500.60	13,000.00	1,499.40	88
119	On Call Hours	279.57	3,801.41	3,900.00	98.59	97
210	Group Health Insurance	2,682.18	32,029.28	32,050.00	20.72	100
220	FICA Expense	971.57	12,751.89	12,475.00	-276.89	102
230	Pension / Deferred Comp	769.58	10,030.51	9,800.00	-230.51	102
240	Workers Comp		2,713.72	2,575.00	-138.72	105
260	Life, LTD, STD, Accident Insurance	95.77	1,153.87	1,175.00	21.13	98
	Total Account	17,676.30	231,111.99	226,475.00	-4,636.99	102
4151	Contractuals					
310	Professional Services	690.35	5,148.56	5,450.00	301.44	94
317	Software	12.00	4,847.29	5,350.00	502.71	91
341	Travel/Meetings			500.00	500.00	
350	Utilities	379.76	897.99	550.00	-347.99	163
351	Electricity	290.41	1,719.79	1,575.00	-144.79	109
381	Repairs and Maintenance	1,845.00	16,734.89	16,000.00	-734.89	105
382	Equipment Repairs and Maintenance		464.97	500.00	35.03	93
385	Fuel (Gas/Diesel)	469.70	2,351.96	2,100.00	-251.96	112
421	Operating Supplies		272.17		-272.17	
	Total Account	3,687.22	32,437.62	32,025.00	-412.62	101
4152	Commodities					
410	Office Supplies			500.00	500.00	
411	Postage	197.28	3,922.63	4,175.00	252.37	94
421	Operating Supplies	1,898.47	11,813.52	11,750.00	-63.52	101
422	Uniforms		681.71	600.00	-81.71	114
423	Safety Supplies			100.00	100.00	
431	Lab Testing	305.36	4,332.17	4,750.00	417.83	91
432	Chemicals	10.00	194.00	175.00	-19.00	111

501 Water Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
433	License & Permits		418.76	500.00	81.24	84
441	Training			1,000.00	1,000.00	
445	Special Projects			2,500.00	2,500.00	
452	Water Purchase Contracts	65,793.36	189,969.54	185,000.00	-4,969.54	103
490	Miscellaneous Expense	397.50	458.56	250.00	-208.56	183
	Total Account	68,601.97	211,790.89	211,300.00	-490.89	100
4153	Capital Outlay					
635	System Improvements			5,000.00	5,000.00	
641	Equipment Purchase		66,909.06	67,000.00	90.94	100
	Total Account		66,909.06	72,000.00	5,090.94	93
4154	Other / Misc. Expense					
790	Contingency			10,000.00	10,000.00	
	Total Account			10,000.00	10,000.00	
4340	Water Operations					
431	Lab Testing		26.48		-26.48	
	Total Account		26.48		-26.48	
	Total Expenses	89,965.49	542,276.04	551,800.00	9,523.96	98
	Net Income from Operations	-40,053.76	-935,947.61			
	Other Revenue					
3998	Transfer In - Capital Contribution		4,955,790.00		4,955,790.00	
	Total Other Revenue	0.00	4,955,790.00	0.00	4,955,790.00	
	Other Expenses					
7610	Debt Service					
710	Debt Principal		160,000.00	160,000.00		100
720	Debt Interest		19,583.84	19,750.00	166.16	99
730	Debt Service Fees		6,527.94	6,550.00	22.06	100
	Total Account		186,111.78	186,300.00	188.22	100
7999	Transfers Out					
893	Transfer to Bond and Interest/CIP	200,000.00	200,000.00		-200,000.00	
896	Transfer to Reserve Fund	60,000.00	60,000.00	21,200.00	-38,800.00	283
	Total Account	260,000.00	260,000.00	21,200.00	-238,800.00	1226

501 Water Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
	Total Other Expenses	260,000.00	446,111.78	207,500.00	-238,611.78	215
	Net Income	-300,053.76	3,573,730.61			

502 Sewer Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3473	Hook-up / Tap Fees	6,000.00	286,412.00	277,500.00	8,912.00	103
3481	Sewer Charges	48,560.35	495,753.62	515,750.00	-19,996.38	96
3484	Stormwater Management Fee	90.00	4,260.00	4,275.00	-15.00	100
3490	Late Charges	1,195.00	12,729.20	12,925.00	-195.80	98
						99
	Total Revenue	55,845.35	799,154.82	810,450.00	-11,295.18	99
Expenses						
4140	City Staff Salaries & Benefits					
110	Salaries	11,920.81	154,900.56	151,500.00	-3,400.56	102
116	Overtime	953.02	11,477.72	12,675.00	1,197.28	91
119	On Call Hours	279.57	3,798.62	3,900.00	101.38	97
210	Group Health Insurance	2,681.39	32,015.30	32,050.00	34.70	100
220	FICA Expense	971.28	12,584.55	12,475.00	-109.55	101
230	Pension / Deferred Comp	769.35	9,919.14	9,800.00	-119.14	101
240	Workers Comp		2,627.64	2,525.00	-102.64	104
260	Life, LTD, STD, Accident Insurance	95.70	1,153.37	1,175.00	21.63	98
	Total Account	17,671.12	228,476.90	226,100.00	-2,376.90	101
4151	Contractuals					
310	Professional Services	1,815.00	27,942.21	23,000.00	-4,942.21	121
312	Legal Fees			250.00	250.00	
315	Interstate Engineering			1,250.00	1,250.00	
317	Software	12.00	1,287.28	1,450.00	162.72	89
350	Utilities	379.76	897.99	575.00	-322.99	156
351	Electricity	4,359.38	32,149.06	31,750.00	-399.06	101
353	Electricity Stormwater	2,078.49	18,775.16	19,250.00	474.84	98
356	Telephone/Internet/Communications			250.00	250.00	
381	Repairs and Maintenance	490.03	10,460.35	5,400.00	-5,060.35	194
382	Equipment Repairs and Maintenance		54.98	250.00	195.02	22
385	Fuel (Gas/Diesel)	469.70	2,354.48	2,200.00	-154.48	107
	Total Account	9,604.36	93,921.51	85,625.00	-8,296.51	110
4152	Commodities					
410	Office Supplies			500.00	500.00	
411	Postage	130.32	1,573.81	1,650.00	76.19	95
421	Operating Supplies		5,286.74	4,900.00	-386.74	108
422	Uniforms		527.98	550.00	22.02	96
423	Safety Supplies		676.00	500.00	-176.00	135
426	Plant/Building Repair and Maint		805.00	1,000.00	195.00	81
429	Plant/Lift Station Repairs	1,401.64	3,502.11	2,600.00	-902.11	135
431	Lab Testing	170.04	3,782.09	3,825.00	42.91	99

502 Sewer Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
432	Chemicals		86.42	100.00	13.58	86
433	License & Permits		76.87	100.00	23.13	77
441	Training			500.00	500.00	
445	Special Projects			1,500.00	1,500.00	
453	Sewer Contracts	35,703.00	212,076.64	200,000.00	-12,076.64	106
490	Miscellaneous Expense	16.60	45.20	50.00	4.80	90
	Total Account	37,421.60	228,438.86	217,775.00	-10,663.86	105
4153	Capital Outlay					
635	System Improvements			10,000.00	10,000.00	
	Total Account			10,000.00	10,000.00	
4154	Other / Misc. Expense					
790	Contingency			5,000.00	5,000.00	
	Total Account			5,000.00	5,000.00	
	Total Expenses	64,697.08	550,837.27	544,500.00	-6,337.27	101
	Net Income from Operations	-8,851.73	248,317.55			
Other Expenses						
7999	Transfers Out					
887	Transfer to Sewer Reserve			65,950.00	65,950.00	
890	Transfers Out - Capital Contributions	1,499.95	1,499.95		-1,499.95	
893	Transfer to Bond and Interest/CIP	200,000.00	200,000.00	200,000.00		100
	Total Account	201,499.95	201,499.95	265,950.00	64,450.05	76
	Total Other Expenses	201,499.95	201,499.95	265,950.00	64,450.05	76
	Net Income	-210,351.68	46,817.60			

503 Solid Waste Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Revenue						
3487	Garbage Charges	52,906.22	588,995.00	587,500.00	1,495.00	100
3490	Late Charges	1,350.00	14,490.00	14,700.00	-210.00	99
						100
	Total Revenue	54,256.22	603,485.00	602,200.00	1,285.00	100
Expenses						
4151	Contractuals					
317	Software	12.00	69.00	150.00	81.00	46
319	Other Contractual	20.00	500.00	525.00	25.00	95
	Total Account	32.00	569.00	675.00	106.00	84
4152	Commodities					
411	Postage	253.62	3,062.84	3,150.00	87.16	97
451	Garbage Contract	48,598.63	553,649.62	554,500.00	850.38	100
490	Miscellaneous Expense	1,025.18	1,025.18		-1,025.18	
	Total Account	49,877.43	557,737.64	557,650.00	-87.64	100
4153	Capital Outlay					
635	System Improvements			7,500.00	7,500.00	
	Total Account			7,500.00	7,500.00	
4154	Other / Misc. Expense					
790	Contingency			2,500.00	2,500.00	
	Total Account			2,500.00	2,500.00	
	Total Expenses	49,909.43	558,306.64	568,325.00	10,018.36	98
	Net Income from Operations	4,346.79	45,178.36			

503 Solid Waste Fund

Account Object	Description	Current Month	Current YTD	Budget	Variance	%
		---------- Current Year ----------				
Other Expenses						
7999	Transfers Out					
893	Transfer to Bond and Interest/CIP	33,875.00	33,875.00	33,875.00		100
	Total Account	33,875.00	33,875.00	33,875.00		100
	Total Other Expenses	33,875.00	33,875.00	33,875.00	0.00	100
	Net Income	-29,528.21				
			11,303.36			

Note: Formula for % columns = revenue*100/total expense for Fund.

Claims

Check #	Check Type	Vendor/Employee/Payee Number/Name		Check Amount	Period	Date Issued	Notes
-99795	Clm E	682	Quadient Finance USA, Inc.	1100.00	12/24	12/03/24	
-99794	Clm E	257	WASTE MANAGEMENT Corp Servs Inc	45301.22	12/24	12/17/24	
-99793	Clm E	257	WASTE MANAGEMENT Corp Servs Inc	269.89	12/24	12/17/24	
-99792	Clm E	257	WASTE MANAGEMENT Corp Servs Inc	3027.52	12/24	12/17/24	
-99791	Clm E	682	Quadient Finance USA, Inc.	900.00	12/24	12/31/24	
-99790	Clm E	710	BMS PAY	60.00	12/24	12/31/24	
-87038*	Pay P	27	Keith Asheim	2410.62	12/24	12/06/24	
-87037	Pay P	7	Adam Carpenter	2772.47	12/24	12/06/24	
-87036	Pay P	48	Paul Hankel	1415.49	12/24	12/06/24	
-87035	Pay P	39	Jace Hellman	2854.41	12/24	12/06/24	
-87034	Pay P	3	Brenton Holper	3609.14	12/24	12/06/24	
-87033	Pay P	43	Richard Kaufmann	1764.35	12/24	12/06/24	
-87032	Pay P	34	Jesse Knutson	1838.06	12/24	12/06/24	
-87031	Pay P	41	Joel Luing	2647.96	12/24	12/06/24	
-87030	Pay P	10	Mark Malmberg	2183.48	12/24	12/06/24	
-87029	Pay P	29	Caleb Nolte	1906.33	12/24	12/06/24	
-87028	Pay P	28	Roberta Pacht	2054.87	12/24	12/06/24	
-87027	Pay P	9	Todd Pillen	1784.66	12/24	12/06/24	
-87026	Pay P	45	Josh Sherer	1800.63	12/24	12/06/24	
-87025	Pay P	8	Doug Sletten	2358.53	12/24	12/06/24	
-87024	Pay P	47	Jennifer South	1441.06	12/24	12/06/24	
-87023	Pay P	46	Matthew Voltz	3012.88	12/24	12/06/24	
-87022	Pay P	40	Michael Woytassek	1821.49	12/24	12/06/24	
-87021	Pay P	FIT	EFTPS	13360.52	12/24	12/06/24	
-87020	Pay P	MN SIT	MN DEPARTMENT OF REVENUE	153.00	12/24	12/06/24	
-87019	Pay P	457(B) PRE-TAX	NATIONWIDE	6358.67	12/24	12/06/24	
-87018	Pay P	27	Keith Asheim	2410.62	12/24	12/20/24	
-87017	Pay P	7	Adam Carpenter	2342.33	12/24	12/20/24	
-87016	Pay P	48	Paul Hankel	1790.26	12/24	12/20/24	
-87015	Pay P	39	Jace Hellman	2854.41	12/24	12/20/24	
-87014	Pay P	3	Brenton Holper	3609.14	12/24	12/20/24	
-87013	Pay P	43	Richard Kaufmann	2343.95	12/24	12/20/24	
-87012	Pay P	34	Jesse Knutson	1881.19	12/24	12/20/24	
-87011	Pay P	41	Joel Luing	2647.96	12/24	12/20/24	
-87010	Pay P	10	Mark Malmberg	2053.69	12/24	12/20/24	
-87009	Pay P	29	Caleb Nolte	1906.33	12/24	12/20/24	
-87008	Pay P	28	Roberta Pacht	2162.68	12/24	12/20/24	
-87007	Pay P	9	Todd Pillen	1850.40	12/24	12/20/24	
-87006	Pay P	45	Josh Sherer	2105.35	12/24	12/20/24	
-87005	Pay P	8	Doug Sletten	2151.02	12/24	12/20/24	
-87004	Pay P	47	Jennifer South	1522.60	12/24	12/20/24	
-87003	Pay P	46	Matthew Voltz	2980.96	12/24	12/20/24	
-87002	Pay P	40	Michael Woytassek	1847.90	12/24	12/20/24	
-87001	Pay P	FIT	EFTPS	13785.09	12/24	12/20/24	
-87000	Pay P	MN SIT	MN DEPARTMENT OF REVENUE	153.00	12/24	12/20/24	
-86999	Pay P	LIFE AD&D-UNUM	FIRST UNUM LIFE INSURANC	896.75	12/24	12/20/24	
-86998	Pay P	457(B) PRE-TAX	NATIONWIDE	6406.67	12/24	12/20/24	
-86997	Pay P	DENTAL	BLUE CROSS BLUE SHIELD O	24214.16	12/24	12/20/24	

Check Types: MC=Manual Claim, SC=System Claim, V=Void (never in system), E=ACH
P=Payroll, C=Cancelled (cancelled in system), R=Reissued, D=Deleted (deleted in system)

Claims

Check #	Check Type	Vendor/Employee/Payee Number/Name	Check Amount	Period	Date Issued	Notes
15854*	Clm SC	702 ABM Technology Group	83.19	12/24	12/03/24	
15855	Clm SC	33 BORDER STATES PAVING	8326.27	12/24	12/03/24	
15856	Clm SC	272 BUSINESS ESSENTIALS	191.10	12/24	12/03/24	
15857	Clm SC	55 CINTAS	244.38	12/24	12/03/24	
15858	Clm SC	56 CITY OF FARGO	70.00	12/24	12/03/24	
15859	Clm SC	687 Column Software PBC	188.48	12/24	12/03/24	
15860	Clm SC	63 CORPORATE PAYMENT SYSTEMS	22303.36	12/24	12/03/24	
15861	Clm SC	72 DAKOTA UNDERGROUND	1294025.55	12/24	12/03/24	
15862	Clm SC	76 DIRT DYNAMICS	240193.67	12/24	12/03/24	
15863	Clm SC	332 DISPLAY SALES COMPANY	76.00	12/24	12/03/24	
15864	Clm SC	999999 ERICA BULLIS	35.00	12/24	12/03/24	
15865	Clm SC	101 HAWKINS INC	10.00	12/24	12/03/24	
15866	Clm SC	286 HOFER SIGNS	65.00	12/24	12/03/24	
15867	Clm SC	105 HORACE PARK DISTRICT	8088.31	12/24	12/03/24	
15868	Clm SC	116 INTERSTATE ENGINEERING	102730.90	12/24	12/03/24	
15869	Clm SC	121 JET-WAY MULTIPLE SERVICES	3337.50	12/24	12/03/24	
15870	Clm SC	145 MARCO TECHNOLOGIES LLC	470.31	12/24	12/03/24	
15871	Clm SC	263 MASTER CONSTRUCTION COMPANY	800180.46	12/24	12/03/24	
15872	Clm SC	152 MFOA	40.00	12/24	12/03/24	
15873	Clm SC	473 NATIONWIDE	352.50	12/24	12/03/24	
15874	Clm SC	631 Park Construction Company	543966.24	12/24	12/03/24	
15875	Clm SC	185 PAUL ERDMANN	40.00	12/24	12/03/24	
15876	Clm SC	704 PAUL HANKEL	111.89	12/24	12/03/24	
15877	Clm SC	188 PETRO SERVE USA	1366.67	12/24	12/03/24	
15878	Clm SC	625 QUALITY FLOW SYSTEMS, INC	4645.00	12/24	12/03/24	
15879	Clm SC	730 Scott's Electric	2525.65	12/24	12/03/24	
15880	Clm SC	581 SIGN SOLUTIONS	2936.54	12/24	12/03/24	
15881	Clm SC	375 Southern Valley Fire & Rescue	5469.50	12/24	12/03/24	
15882	Clm SC	246 UNITED RENTALS	1850.00	12/24	12/03/24	
15883	Pay P	ND CHILD SUPPOR ND CHILD SUPPORT DIVISIO	370.53	12/24	12/03/24	
15884	Clm SC	723 SERVICE TRUCKS INTERNATIONAL	11203.00	12/24	12/04/24	
15885	Clm SC	702 ABM Technology Group	3978.80	12/24	12/17/24	
15886	Clm SC	10 ADVANCE GARAGE DOOR INC	1138.00	12/24	12/17/24	
15887	Clm SC	16 AMERICAN WELDING & GAS, INC.	80.32	12/24	12/17/24	
15888	Clm SC	336 BORDER STATES Industries Inc	218.72	12/24	12/17/24	
15889	Clm SC	42 CASS COUNTY ELECTRIC	9472.00	12/24	12/17/24	
15890	Clm SC	48 CASS COUNTY FINANCE	17032.34	12/24	12/17/24	
15891	Clm SC	49 CASS RURAL WATER USERS	39562.74	12/24	12/17/24	
15892	Clm SC	51 CENTURY LINK	102.16	12/24	12/17/24	
15893	Clm SC	55 CINTAS	244.38	12/24	12/17/24	
15894	Clm SC	56 CITY OF FARGO	182.00	12/24	12/17/24	
15895	Clm SC	374 CITY OF FARGO - UTILITY	17961.00	12/24	12/17/24	
15896	Clm SC	999999 CLEAN CUT LAWN CARE	312.00	12/24	12/17/24	
15897	Clm SC	687 Column Software PBC	270.56	12/24	12/17/24	
15898	Clm SC	67 DABBERT CUSTOM HOMES	9200.00	12/24	12/17/24	
15899	Clm SC	72 DAKOTA UNDERGROUND	41157.13	12/24	12/17/24	
15900	Clm SC	999999 DEAN MOEN	397.50	12/24	12/17/24	
15901	Clm SC	270 FERGUSON WATERWORKS #2516	4152.48	12/24	12/17/24	

Check Types: MC=Manual Claim, SC=System Claim, V=Void (never in system), E=ACH
P=Payroll, C=Cancelled (cancelled in system), R=Reissued, D=Deleted (deleted in system)

Claims

Check #	Check Type	Vendor/Employee/Payee Number/Name	Check Amount	Period	Date Issued	Notes
15902	Clm SC	105 HORACE PARK DISTRICT	303.50	12/24	12/17/24	
15903	Clm SC	116 INTERSTATE ENGINEERING	268761.04	12/24	12/17/24	
15904	Clm SC	729 J.R. FERCHE, INC	23534.65	12/24	12/17/24	
15905	Clm SC	133 KPH, INC	165937.68	12/24	12/17/24	
15906	Clm SC	365 MIDWEST INSPECTION SERVICES	800.00	12/24	12/17/24	
15907	Clm SC	999999 NATHAN PELLENWESSEL	47.10	12/24	12/17/24	
15908	Clm SC	161 ND DEPT OF TRANSPORTATION	32416.80	12/24	12/17/24	
15909	Clm SC	731 North Central International, LLC	59.48	12/24	12/17/24	
15910	Clm SC	174 NORTH DAKOTA CHEMISTRY LAB	221.36	12/24	12/17/24	
15911	Clm SC	304 NORTHERN TOOL & EQUIPMENT	6148.09	12/24	12/17/24	
15912	Clm SC	181 OHNSTAD TWICHELL PC	19571.90	12/24	12/17/24	
15913	Clm SC	182 ONE CALL CONCEPTS	298.50	12/24	12/17/24	
15914	Clm SC	999999 PERSONAL TOUCH PROP. MANAGEMENT	29.20	12/24	12/17/24	
15915	Clm SC	625 QUALITY FLOW SYSTEMS, INC	490.03	12/24	12/17/24	
15916	Clm C	483 Short Printer	0	12/24	12/17/24	
15917	Clm SC	581 SIGN SOLUTIONS	4702.97	12/24	12/17/24	
15918	Clm SC	229 SWEENEY CONTROLS CO	990.00	12/24	12/17/24	
15919	Clm SC	242 TRUNORTH DYNAMICS	524.00	12/24	12/17/24	
15920	Clm SC	999999 WESTERN EXCAVATION LLC	24254.75	12/24	12/17/24	
15921	Clm SC	261 XCEL ENERGY	639.45	12/24	12/17/24	
15922	Clm SC	732 QUESTICA LTD.	41000.00	12/24	12/17/24	
15923	Pay P	ND CHILD SUPPOR ND CHILD SUPPORT DIVISIO	370.53	12/24	12/17/24	
15924	Clm SC	282 UNITED STATES POSTAL SERVICE	376.73	12/24	12/31/24	
15925	Pay P	VOL LIFE INS AMERICAN UNITED LIFE INS	155.00	12/24	12/31/24	
15926	Pay P	CANCER POLICY USABLE LIFE - PREMIUM BI	130.92	12/24	12/31/24	
15927	Clm SC	702 ABM Technology Group	1542.75	12/24	12/31/24	
15928	Clm SC	16 AMERICAN WELDING & GAS, INC.	39.80	12/24	12/31/24	
15929	Clm SC	49 CASS RURAL WATER USERS	12812.01	12/24	12/31/24	
15930	Clm SC	525 Christianson Companies, Inc.	67978.04	12/24	12/31/24	
15931	Clm SC	55 CINTAS	488.76	12/24	12/31/24	
15932	Clm SC	999999 CONNOR & DEVIN MCGOVERN	972.34	12/24	12/31/24	
15933	Clm SC	88 FASTENAL	221.54	12/24	12/31/24	
15934	Clm SC	559 General Equipment & Supplies, Inc	307604.57	12/24	12/31/24	
15935	Clm SC	101 HAWKINS INC	10.00	12/24	12/31/24	
15936	Clm SC	105 HORACE PARK DISTRICT	4334.28	12/24	12/31/24	
15937	Clm SC	106 HORACE SENIOR CENTER	400.00	12/24	12/31/24	
15938	Clm SC	116 INTERSTATE ENGINEERING	4037.96	12/24	12/31/24	
15939	Clm SC	121 JET-WAY MULTIPLE SERVICES	1815.00	12/24	12/31/24	
15940	Clm SC	145 MARCO TECHNOLOGIES LLC	470.31	12/24	12/31/24	
15941	Clm SC	185 PAUL ERDMANN	20.00	12/24	12/31/24	
15942	Clm SC	704 PAUL HANKEL	263.31	12/24	12/31/24	
15943	Clm SC	337 SCOTT'S SIGNS INC.	316.00	12/24	12/31/24	
15944	Clm C	483 Short Printer	0	12/24	12/31/24	problem cancelling claim - check printed 2x
15945	Clm SC	375 Southern Valley Fire & Rescue	4334.28	12/24	12/31/24	
15946	Clm SC	229 SWEENEY CONTROLS CO	1401.64	12/24	12/31/24	
15947	Clm SC	242 TRUNORTH DYNAMICS	524.00	12/24	12/31/24	
15948	Clm SC	253 VERIZON	695.63	12/24	12/31/24	

Check Types: MC=Manual Claim, SC=System Claim, V=Void (never in system), E=ACH
P=Payroll, C=Cancelled (cancelled in system), R=Reissued, D=Deleted (deleted in system)

Grand Total # of Checks:	143	Total:	4395128.74	Total Claims	4252636.68	Total Payroll	142492.06

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

February 3rd, 2025

Brenton Holper, City Administrator
City Of Horace
215 Park Drive E
PO Box 99
Horace, ND 58047-0099
Via email: bholper@cityofhorace.com

RE: Water, Sewer, Storm, and Street
Improvement District No. 2023-3
You Betcha Drive
Horace, North Dakota
ER23-00-130

Dear Mr. Holper:

Attached please find Progressive Estimate No. 6 in the amount of $65,205.00 for work performed by Dakota Underground, Co. regarding the above referenced project.

This office has prepared the attached estimate and recommends that the City Council approve the same. After the progressive estimate has been approved, it should be signed by the mayor and returned to our Horace office for distribution.

Should you have any questions or require any additional information regarding this matter, do not hesitate to contact me at (701) 532-0438.

Yours Very Truly,
INTERSTATE ENGINEERING, INC.

James A. Dahlman, PE
JAD/iaj

Attachment

CC:

Dakota Underground, Co. (via email. jared@dakotaunderground.net)
City of Horace Finance (via email. finance@cityofhorace.com, bpacht@cityofhorace.com)

PROGRESSIVE ESTIMATE
OF
WORK COMPLETED

PROJECT:	Water, Sewer, Storm, and Street Improvement District No. 2023-3 You Betcha Dr. Horace, ND	**ESTIMATE No:**	**Six (6)**
		Final Completion Date:	7/26/2025
		Substantial Completion Date:	7/12/2025
		Milestone 1 Completion Date:	10/26/2024
PROJECT No.:	ER23-00-130		
LOCATION:	Horace, ND	FROM DATE	11/17/2024
		TO DATE	1/18/2025
CONTRACTOR:	Dakota Underground, Co.	CONTRACT COST	$2,780,509.47
	4001 15th Ave. NW	STARTING DATE	7/10/2024
	Fargo, North Dakota 58102	TOTAL % WORK COMPLETE	98.6%

TOTAL COSTS TO DATE	$2,741,474.94
Work Completed	$2,741,474.94
Material in Storage To Date	$0.00
LESS RETAINAGE (5%)	$139,025.47
TOTAL COSTS DUE	$2,602,449.47
LESS COSTS PAID IN PREVIOUS ESTIMATES	$2,537,244.47
NET COST DUE THIS ESTIMATE	**$65,205.00**

CERTIFICATIONS AND APPROVAL

Certified as to Form, Quantities of Work, Price and Extensions:

INTERSTATE ENGINEERING, INC.

TITLE: Project Engineer

DATE: 1/23/2025

Certified as to Quantities Complete:

Dakota Underground, Co.

Jared Heller

TITLE: Project Manager

DATE: 1/23/2025

Estimate Approved:

CITY OF HORACE

TITLE:

DATE:

PROGRESSIVE ESTIMATE No. 6

WATER, SEWER, STORM, AND STREET IMPROVEMENT DISTRICT No. 2023-3

You Betcha Dr.

HORACE, NORTH DAKOTA

Item No.	Description	Total Units Bid	UNIT	Bid Price Per Unit	Previous Quantities	Current Quantities	Total Quantities Used	Value of Work Installed to Date	Previous Material in Storage	Current Material in Storage	Amount Due
BASE BID											
1	Borrow (P)	11,326	CY	$ 17.00	11,326.00		11,326.00	$ 192,542.00	$ -	$ -	$ 192,542.00
2	Subgrade Preparation (P)	7,328	SY	$ 2.25	7,328.00		7,328.00	$ 16,488.00	$ -	$ -	$ 16,488.00
3	Topsoil Stripping (P)	8,831	CY	$ 3.50	8,831.00		8,831.00	$ 30,908.50	$ -	$ -	$ 30,908.50
4	Topsoil (P)	3,203	CY	$ 6.00	3,203.00		3,203.00	$ 19,218.00	$ -	$ -	$ 19,218.00
5	Aggregate Base Course CL5	2,537	CY	$ 62.00	2,537.00		2,537.00	$ 157,294.00	$ -	$ -	$ 157,294.00
6	8IN Non-Reinforced Concrete Pvmt CL AE Doweled	5,933	SY	$ 92.00	5,932.80		5,932.80	$ 545,817.60	$ -	$ -	$ 545,817.60
7	Driveway Concrete	269	SY	$ 95.00	210.60		210.60	$ 20,007.00	$ -	$ -	$ 20,007.00
8	Curb and Gutter - Highback	2,182	LF	$ 28.00	2,209.00		2,209.00	$ 61,852.00	$ -	$ -	$ 61,852.00
9	Curb and Gutter - Modified Mountable	1,300	LF	$ 27.50	1,305.00		1,305.00	$ 35,887.50	$ -	$ -	$ 35,887.50
10	Geosynthetic Material Type R1 (P)	7,521	SY	$ 3.25	7,521.00		7,521.00	$ 24,443.25	$ -	$ -	$ 24,443.25
11	4" PVC Perforated Pipe	3,481	LF	$ 8.25	3,514.00		3,514.00	$ 28,990.50	$ -	$ -	$ 28,990.50
12	Sidewalk Concrete 6IN Reinforced - Fiber	2,250	SY	$ 77.00	2,251.50		2,251.50	$ 173,365.50	$ -	$ -	$ 173,365.50
13	Detectable Warning Panel	258	SF	$ 60.00	261.60		261.60	$ 15,696.00	$ -	$ -	$ 15,696.00
14	Flat Sheet for Signs-Type XI Refl Sheeting	92	SF	$ 21.00	81.70		81.70	$ 1,715.70	$ -	$ -	$ 1,715.70
15	Flat Sheet for Signs-Type IV Refl Sheeting	43	SF	$ 18.90	43.00		43.00	$ 812.70	$ -	$ -	$ 812.70
16	Steel Galv Posts-Telescoping Perforated Tube	403	LF	$ 14.45	403.00		403.00	$ 5,823.35	$ -	$ -	$ 5,823.35
17	Object Markers - End of Road	15	EA	$ 132.00	15.00		15.00	$ 1,980.00	$ -	$ -	$ 1,980.00
18	10" SDR 21 Storm Sewer Pipe	24	LF	$ 84.00	24.00		24.00	$ 2,016.00	$ -	$ -	$ 2,016.00
19	12" RCP Storm Sewer Pipe	152	LF	$ 66.00	152.00		152.00	$ 10,032.00	$ -	$ -	$ 10,032.00
20	18" RCP Storm Sewer Pipe	1,246	LF	$ 76.00	1,246.00		1,246.00	$ 94,696.00	$ -	$ -	$ 94,696.00
21	24" RCP Storm Sewer Pipe	24	LF	$ 99.00	24.00		24.00	$ 2,376.00	$ -	$ -	$ 2,376.00
22	42" RCP Storm Sewer Pipe	1,232	LF	$ 250.00	1,232.00		1,232.00	$ 308,000.00	$ -	$ -	$ 308,000.00
23	Clean and Televise Storm Sewer Pipe	2,678	LF	$ 3.50	2,678.00		2,678.00	$ 9,373.00	$ -	$ -	$ 9,373.00
24	48" Concrete Storm Sewer Manhole	24.4	VF	$ 185.00	24.40		24.40	$ 4,514.00	$ -	$ -	$ 4,514.00
25	72" Concrete Storm Sewer Manhole	15.9	VF	$ 460.00	15.89		15.89	$ 7,309.40	$ -	$ -	$ 7,309.40
26	84" Concrete Storm Sewer Manhole	7.3	VF	$ 675.00	7.28		7.28	$ 4,914.00	$ -	$ -	$ 4,914.00
27	96" Concrete Storm Sewer Manhole	15.2	VF	$ 885.00	15.23		15.23	$ 13,478.55	$ -	$ -	$ 13,478.55
28	64" Concrete Storm Sewer Manhole Base	4	EA	$ 2,600.00	4.00		4.00	$ 10,400.00	$ -	$ -	$ 10,400.00
29	92" Concrete Storm Sewer Manhole Base	2	EA	$ 4,940.00	2.00		2.00	$ 9,880.00	$ -	$ -	$ 9,880.00
30	106" Concrete Storm Sewer Manhole Base	1	EA	$ 6,475.00	1.00		1.00	$ 6,475.00	$ -	$ -	$ 6,475.00
31	120" Concrete Storm Sewer Manhole Base	2	EA	$ 9,630.00	2.00		2.00	$ 19,260.00	$ -	$ -	$ 19,260.00
32	Storm Sewer Manhole Casting and Cover	9	EA	$ 800.00	9.00		9.00	$ 7,200.00	$ -	$ -	$ 7,200.00
33	Slide Gate Manhole	1	LSUM	$ 40,000.00	1.00		1.00	$ 40,000.00	$ -	$ -	$ 40,000.00
34	48" Flap Gate	1	EA	$ 12,850.00	1.00		1.00	$ 12,850.00	$ -	$ -	$ 12,850.00
35	Type II Inlet	6	EA	$ 4,000.00	6.00		6.00	$ 24,000.00	$ -	$ -	$ 24,000.00
36	8" PVC SDR 26 Sewer Pipe	261	LF	$ 121.00	261.00		261.00	$ 31,581.00	$ -	$ -	$ 31,581.00
37	8" PVC SDR 35 Sewer Pipe	1,717	LF	$ 70.00	1,682.00		1,682.00	$ 117,740.00	$ -	$ -	$ 117,740.00
38	6" PVC Sewer Service Pipe	67	LF	$ 42.00	67.00		67.00	$ 2,814.00	$ -	$ -	$ 2,814.00
39	4" PVC Sewer Service Pipe	910	LF	$ 37.00	910.00		910.00	$ 33,670.00	$ -	$ -	$ 33,670.00
40	8" x 4" Wye	14	EA	$ 440.00	14.00		14.00	$ 6,160.00	$ -	$ -	$ 6,160.00
41	8" x 6" Wye	1	EA	$ 500.00	1.00		1.00	$ 500.00	$ -	$ -	$ 500.00
42	Clean and Televise Sanitary Sewer Pipe	2,955	LF	$ 3.00	2,920.00		2,920.00	$ 8,760.00	$ -	$ -	$ 8,760.00
43	Concrete Manhole	80	VF	$ 190.00	79.50		79.50	$ 15,105.00	$ -	$ -	$ 15,105.00
44	Concrete Base	5	EA	$ 2,900.00	5.00		5.00	$ 14,500.00	$ -	$ -	$ 14,500.00
45	Manhole Casting and Cover	6	EA	$ 2,300.00	6.00		6.00	$ 13,800.00	$ -	$ -	$ 13,800.00
46	Adjust Manhole Casting and Cover	1	EA	$ 600.00	1.00		1.00	$ 600.00	$ -	$ -	$ 600.00
47	Connection to Existing Sanitary Manhole	1	EA	$ 15,000.00	1.00		1.00	$ 15,000.00	$ -	$ -	$ 15,000.00
48	Lateral Sanitary Forcemain Move	1	EA	$ 0.01	1.00		1.00	$ 0.01	$ -	$ -	$ 0.01
49	4" Gate Valve and Box	1	EA	$ 4,900.00	1.00		1.00	$ 4,900.00	$ -	$ -	$ 4,900.00
50	6" Gate Valve and Box	1	EA	$ 5,500.00	1.00		1.00	$ 5,500.00	$ -	$ -	$ 5,500.00
51	6" PVC Pipe Watermain	365	LF	$ 107.00	438.20		438.20	$ 46,887.40	$ -	$ -	$ 46,887.40
52	6" Gate Valve and Box	14	EA	$ 2,900.00	14.00		14.00	$ 40,600.00	$ -	$ -	$ 40,600.00
53	6" Fire Hydrant	8	EA	$ 7,500.00	8.23		8.2267	$ 61,700.25	$ -	$ -	$ 61,700.25
54	Ductile Iron Fittings	800	LBS	$ 12.00	488.00		488.00	$ 5,856.00	$ -	$ -	$ 5,856.00
55	1" Water Service	1,020	LF	$ 33.00	1,020.00		1,020.00	$ 33,660.00	$ -	$ -	$ 33,660.00
56	1" Curb Stop and Box	14	EA	$ 610.00	14.00		14.00	$ 8,540.00	$ -	$ -	$ 8,540.00
57	1' Corporation Stop	14	EA	$ 360.00	14.00		14.00	$ 5,040.00	$ -	$ -	$ 5,040.00
58	Watermain Lowering	2	EA	$ 0.01	2.00		2.00	$ 0.02	$ -	$ -	$ 0.02
59	Connect to Existing Water Main	4	EA	$ 1,500.00	4.00		4.00	$ 6,000.00	$ -	$ -	$ 6,000.00
60	7FT Concrete Base	7	EA	$ 3,150.00	7.00		7.00	$ 22,050.00	$ -	$ -	$ 22,050.00
61	1.5in Innerduct Installed	1,760	LF	$ 10.00	1,760.00		1,760.00	$ 17,600.00	$ -	$ -	$ 17,600.00
62	#6 USE Cu. Conductor	5,280	LF	$ 6.55	5,280.00		5,280.00	$ 34,584.00	$ -	$ -	$ 34,584.00
63	Type A Pole & Luminaire	9	EA	$ 7,245.00	0.00	9.00	9.00	$ 65,205.00	$ -	$ -	$ 65,205.00
64	Mobilization	1	LSUM	$ 120,000.00	1.00		1.00	$ 120,000.00	$ -	$ -	$ 120,000.00
65	Dewatering	1	LSUM	$ 5,000.00	1.00		1.00	$ 5,000.00	$ -	$ -	$ 5,000.00
66	Vehicle Tracking Pad	1	EA	$ 0.01	0.00		0.00	$ -	$ -	$ -	$ -
67	Construction Traffic Control	1	LSUM	$ 1,500.00	1.00		1.00	$ 1,500.00	$ -	$ -	$ 1,500.00
68	Rock Excavation	50	CY	$ 0.01	0.00		0.00	$ -	$ -	$ -	$ -
69	Inlet Protection	16	EA	$ 200.00	7.00		7.00	$ 1,400.00	$ -	$ -	$ 1,400.00
70	Fiber Rolls 6IN	304	LF	$ 3.40	0.00		0.00	$ -	$ -	$ -	$ -
71	Remove Fiber Rolls 6IN	304	LF	$ 1.05	0.00		0.00	$ -	$ -	$ -	$ -
72	Erosion Control Blanket Type I	386	SY	$ 2.65	463.00		463.00	$ 1,226.95	$ -	$ -	$ 1,226.95
73	Seeding MIX 1(P)	3.24	ACRE	$ 1,917.00	3.58		3.58	$ 6,862.86	$ -	$ -	$ 6,862.86
74	Seeding MIX 2 (P)	0.30	ACRE	$ 2,310.00	2.22		2.22	$ 5,128.20	$ -	$ -	$ 5,128.20
75	Hydromulch (P)	3.24	ACRE	$ 1,890.00	3.58		3.58	$ 6,766.20	$ -	$ -	$ 6,766.20
76	Straw Mulch (P)	0.30	ACRE	$ 3,150.00	2.22		2.22	$ 6,993.00	$ -	$ -	$ 6,993.00
77	Rip Rap	72	CY	$ 150.00	72.00		72.00	$ 10,800.00	$ -	$ -	$ 10,800.00

Item No.	Description	Total Units Bid	UNIT	Bid Price Per Unit	Previous Quantities	Current Quantities	Total Quantities Used	Value of Work Installed to Date	Previous Material in Storage	Current Material in Storage	Amount Due
78	Clearing and Grubbing	1	LSUM	$ 22,500.00	1.00		1.00	$ 22,500.00	$ -	$ -	$ 22,500.00
79	Toba Hawthorn Tree (1.5")	15	EA	$ 682.00	0.00		0.00	$ -	$ -	$ -	$ -
80	Espresso Kentucky Coffee Tree (2")	6	EA	$ 682.00	0.00		0.00	$ -	$ -	$ -	$ -
81	Skyline Honeylocust Tree (2")	15	EA	$ 682.00	0.00		0.00	$ -	$ -	$ -	$ -
82	Greenspire Littleleaf Linden Tree (2")	11	EA	$ 682.00	0.00		0.00	$ -	$ -	$ -	$ -
83	Testing Laboratory Services	1	LSUM	$ 30,000.00	0.5109834		0.5109834	$ 15,329.50	$ -	$ -	$ 15,329.50
								$ 2,741,474.94	**$ -**	**$ -**	**$ 2,741,474.94**

Base Bid $ 2,741,474.94

TOTAL DUE TO DATE $ 2,741,474.94

MEMO

FEBRUARY 3, 2025

TO: MAYOR AND MEMBERS OF THE CITY COUNCIL

FROM: JACE HELLMAN, CITY OF HORACE COMMUNITY DEVELOPMENT DIRECTOR

SUBJECT: CASS COUNTY MULTI-HAZARD MITIGATION PLAN (MHMP)

Horace has been an active participant in the update to the Cass County Multi-Hazard Mitigation Plan (MHMP). The final step in this process is for the City to adopt the MHMP through resolution. Adoption of this resolution ensures our inclusion in the MHMP and makes the City eligible for disaster funding opportunities if the need arises. Attached to this memo you will find a copy of the proposed resolution and the plan document itself. City Staff is recommending that the Council approve the resolution as proposed.

CHAPTER 1: Introduction

Hazard Mitigation Planning

Natural, technological, and adversarial hazards have a direct impact on residents and property in Cass County. While it is impossible to eliminate most hazards, it is possible to mitigate their negative effects. Hazard mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to human life and property from hazards. Mitigation actions may be implemented before, during or after an event; however, they are most successful when based on a long-term plan developed before a disaster occurs. Successful mitigation actions must be practical, cost-effective, politically acceptable and supported by a sound planning process.

This plan is organized into six chapters:

CHAPTER 1: INTRODUCTION

- General plan overview

CHAPTER 2: STUDY AREA BACKGROUND

- Background information about the demographics, economy, geography, weather and climate of the County and each Jurisdiction

CHAPTER 3: HAZARD RISKS AND VULNERABILITIES

- Hazard profiles including their historical frequency, assessment of risks and vulnerabilities, identification of key issues and potential action items

CHAPTER 4: CAPABILITIES ASSESSMENT

- The abilities of the County and the Jurisdictions within the County to support mitigation

CHAPTER 5: MITIGATION STRATEGY

- Identification of goals and action items to mitigate risks of hazards for each jurisdiction

CHAPTER 6: PLAN MAINTENANCE

- Procedures for monitoring, evaluating and updating the plan

Purpose

The purpose of the plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property and the environment from natural, technological, and adversarial hazards. The Federal Emergency Management Agency (FEMA) identifies the primary benefits of hazard mitigation planning as:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public.
- Focusing resources on the greatest risks and vulnerabilities.
- Building partnerships by involvingcitizens, organizations and businesses.
- Increasing education and awareness of threats and hazards, as well as their risks.
- Communicating priorities to state and federal officials.
- Aligning risk reduction with other community objectives.

The plan includes a risk and vulnerability assessment that residents, organizations, local governments and other interested participants can utilize when planning for hazards. The plan also includes a description of mitigation projects that will assist each adopting jurisdiction in reducing risk and preventing loss from future hazard events.

Additionally, all participating jurisdictions are eligible to apply for funds through FEMA's Hazard Mitigation Assistance Program (HMA). HMA offers three programs to help fund implementation of mitigation projects: the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), and Flood Mitigation Assistance (FMA) programs.

Authority

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act of 2000, provides legal basis for state, local and Tribal governments to reduce risks from natural hazards through mitigation planning. All state, local and Tribal governments are required to have an approved Multi-Hazard Mitigation Plan to receive funding for certain types of non-emergency disaster assistance, including mitigation projects.

This plan is an update of Cass County's 2019 Multi- Hazard Mitigation Plan. Hazard mitigation plans are required by FEMA to be updated every five years to maintain the jurisdiction's eligibility for grant funding. Jurisdictions that participated in the planning process and are adopting the plan by the official method of approval based on legal authority are listed in Table 1.1. Enderlin was included in the 2019 MHMP but elected not to participate in this plan because they are in the Ransom County MHMP.

Table 1.1 – Adopting Jurisdictions

Jurisdiction	Adoption Date
Cass County	
City of Alice	
City of Amenia	
City of Argusville	
City of Arthur	
City of Ayr	
City of Briarwood	
City of Buffalo	
City of Casselton	
City of Davenport	
City of Fargo	
City of Frontier	
City of Gardner	
City of Grandin	
Coty of Harwood	
City of Horace	
City of Hunter	
City of Kindred	
City of Leonard	
City of Mapleton	
City of North River	
City of Oxbow	
City of Page	
City of Prairie Rose	
City of Reile's Acres	
City of Tower City	
City of West Fargo	

To be eligible for future funds through the Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance program, jurisdictions must either adopt the plan and participate in the planning process or be sponsored by a jurisdiction that has done so. Approval and adoption documentation can be found in Appendix A.

The Planning Process

FEMA identifies four essential steps to the hazard mitigation planning process:

- **Resource organization:** Involving interested community members and reaching out to critical stakeholders and those with technical expertise required during the planning process.
- **Risk assessment:** Identifying hazard characteristics and potential consequences, including effects on critical facilities.
- **Development of mitigation strategies:** Determining priorities and ways to minimize effects of identified hazards.
- **Plan implementation and progress monitoring:** Implementing the plan brings it to life and periodic monitoring ensures the plan remains relevant as conditions change.

The overall planning process for the development of the Cass County MHMP included the following activities:

- Consultant and emergency management team discussed overall approach to the planning process.
- Goals and a hierarchy of needs were reviewed by the emergency management team.
- Hazards to include in this plan were identified and defined by the emergency management team and the consultant.
- Consultant developed initial risk assessment based on secondary sources and early input from emergency management team and developed initial hazard assessment chapter
- Consultant and emergency management team developed community information needs survey and distributed it to each community.
- Consultant and emergency management team conducted four community outreach meetings to explain mitigation plan objectives and process, and to obtain feedback on hazard concerns and priorities, and potential mitigation actions.
- Consultant developed initial capacity analysis chapter
- Consultant participated in IPP meetings and a safety professional organization meeting to obtain additional feedback from key stakeholders on hazard risks and vulnerabilities, and potential mitigation actions.
- Emergency management team, Department of Emergency Services staff, and consultant team participated in a forum with people involved in Access and Functional Needs communities to explain the mitigation plan objectives and obtain feedback on issues and potential solutions for these communities.
- Consultant reviewed previous plan action items, THIRA, community surveys and input, IPP meetings and AFN feedback to develop a list of potential mitigation action items.
- Consultant developed initial mitigation strategy chapter and remaining draft chapters and appendices for MHMP
- Emergency managers hosted a meeting with surrounding jurisdiction emergency managers to obtain feedback on draft mitigation plan components and related issues.
- Fargo and West Fargo Emergency Managers provided mitigation action details for their communities.
- Final mitigation action items were updated on the basis of additional community input.
- Draft MHMP was sent to ND DES for plan review.

Public involvement for the plan included community meetings, consultations with representatives of each jurisdiction, and a Planning Team meeting. Local planning documents were also reviewed and incorporated into the document when applicable. Additional details about the planning process can be found in Appendix B.

Acknowledgements

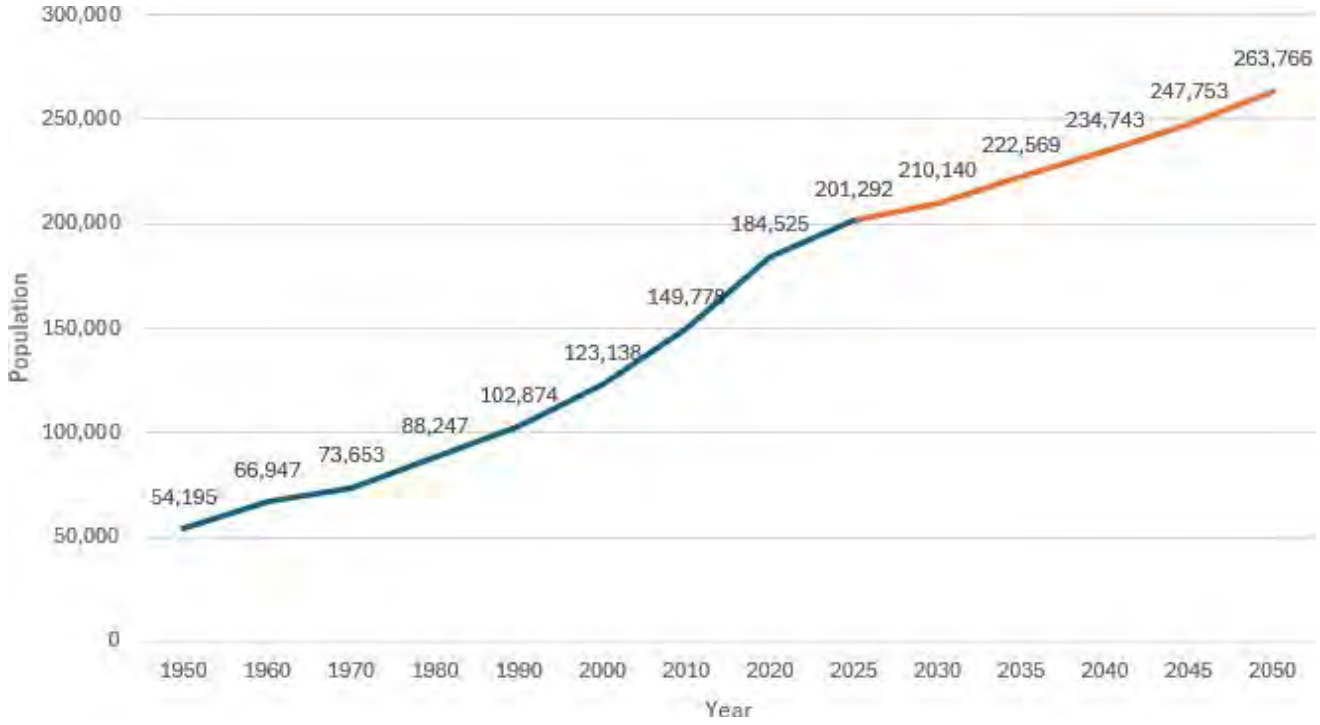
Numerous elected officials, City and County staff, and stakeholders participated in the planning process. The project would not have been possible without the assistance of Planning Team members (identified in Appendix B) and stakeholders who provided comments. The project was primarily funded with a grant awarded through the FEMA Hazard Mitigation Grant Program, administered by the North Dakota Department of Emergency Services (DES). Guidance from state and FEMA staff was instrumental in completing the project.

CHAPTER 2: Study Area Background

County Context

Cass County is the most populous county in North Dakota, with a population of 184,525 as of the 2020 Census. The county has had nearly continuous growth since its inception. This growth is illustrated in Figure 2.1. The Fargo-Moorhead MetroCOG projects the county will continue to gain population over the next 30 years.

Figure 2.1 – Cass County Historical and Projected Populations



Source: US Census Bureau (Historical and 2020); Metro Cog 2050 Population Forecast
Source: US Census Bureau; 2020 Decennial Census used for population and age 2021 American Community Survey used for other demographic information

Cass County is in eastern North Dakota, adjacent to the western border of Minnesota, separated by the Red River, which flows north towards Lake Winnipeg and Hudson Bay. The county's landscape includes the Red River Valley covering approximately the eastern three-quarters of the county and slopes upward to the east and north into a plateau intersected with shallow drainage coulees. The county's highest point is in the southwestern corner, reaching 1,194 feet above sea level. Covering a total area of 1,768 square miles, of which 1,765 square miles is land and 3 square miles is water.

A general map of the county, including major features and neighboring jurisdictions, is shown in Figure 2.2 on the following page. Major roadways include Interstate 29, Interstate 94, US Highway 10, 52, and 81, and State Highways 10, 18, 38, 46, and 294. Cass County is served by several major railroads, including the BSFN Railroad (with key routes passing through Fargo), the Canadian Pacific Railway. Additionally, the Red River Calley and Western (RRVWRR) short line railroad serves rural areas and industries.

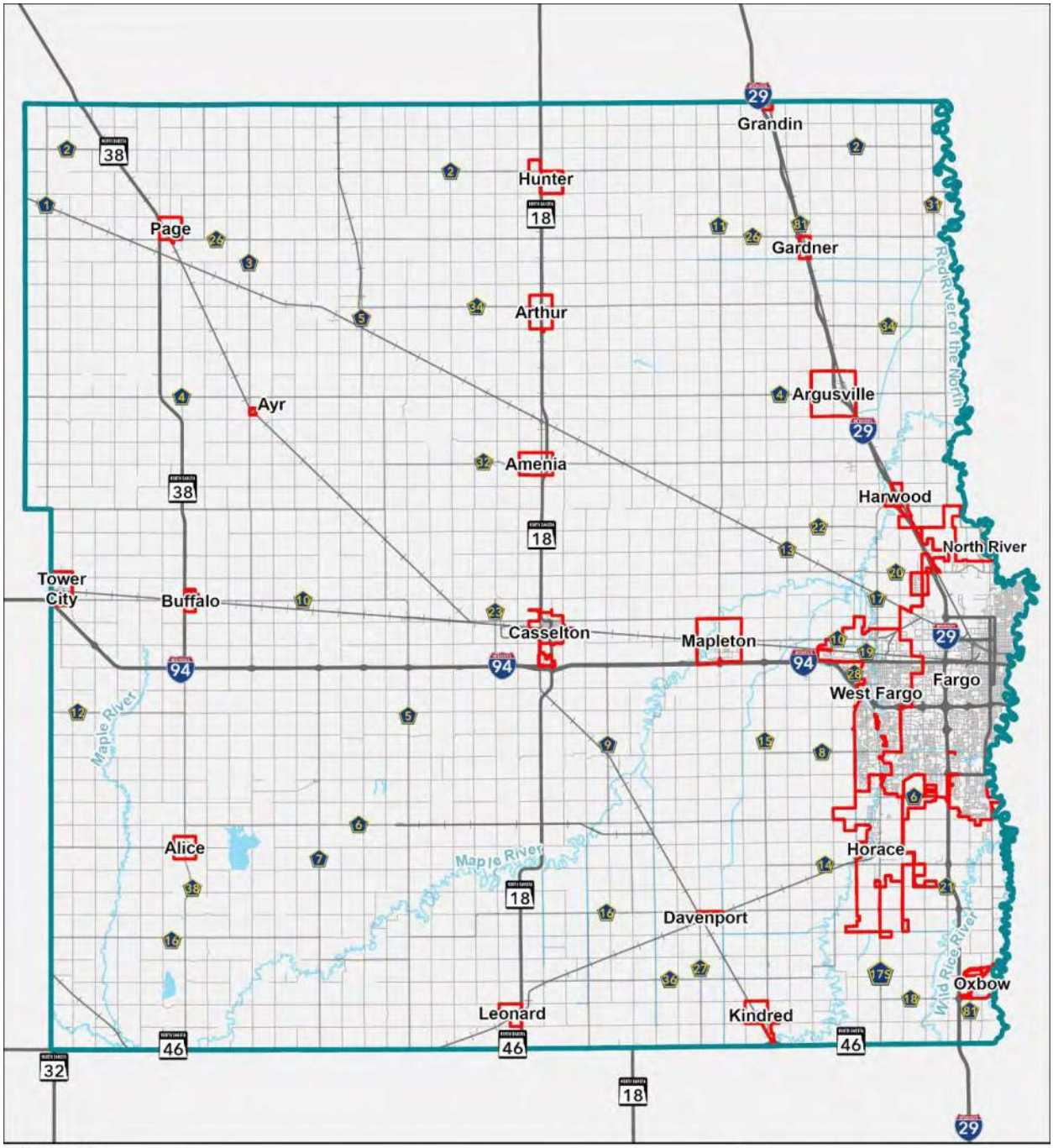


Figure 2.2
Study Area

Demographic Details

Summarized demographic information for Cass County and North Dakota is shown in Table 2.1. The county is generally younger than the state overall, with a median age of 33.4 and 19.4 percent of residents are at least 65 years of age. The county's population density of 104.6 people per square mile is nearly 10 times the statewide density. Most residents identify themselves as white. The county's median income is slightly greater than the state's, the poverty level is also slightly greater than the state's. Recent population trends for each city are summarized in Table 2.2 on the following page.

Table 2.1 – Cass County Demographics

	Cass County	North Dakota
Population	184,525	779,094
Persons under 5 years	6.6%	7.1%
Persons under 18 years	22.5%	23.6%
Persons 65 years and over	19.4%	15.7%
Median Age	33.4	35.8
Persons per square mile	104.6	11.0
White	82.0%	82.9%
Hispanic or Latino	3.4%	4.3%
American Indian or Alaska Native	1.4%	5.0%
Black or African American	7%	3.4%
Asian	3.3%	1.7%
Native Hawaiian and Other Pacific Islander	0.1%	0.2%
Two or More Races	5.1%	5.4%
Foreign born	8.2%	4.1%
Language other than English spoken at home	8.7%	7.0%
High school graduates, age 25+	96.4%	95.9%
Median household income	$66,747	$64,894
Persons in poverty	13.4%	10.6%
Average household size (persons)	2.37	2.3
Persons with disabilities	22,367	84,314
Percentage of people with disabilities	11.7%	11.1%

Table 2.2 – Incorporated City Population Trends					
City	2010	2020	% Change 2010-2020	2022	% Change 2020-2022
Alice	40	41	2.50%	44	7.32%
Amenia	89	85	-4.49%	181	112.94%
Argusville	475	480	1.05%	573	19.38%
Arthur	402	328	-18.41%	338	3.05%
Ayr	23	11	-52.17%	15	36.36%
Briarwood	78	57	-26.92%	56	-1.75%
Buffalo	209	195	-6.70%	136	-30.26%
Casselton	1,855	2,479	33.64%	2,496	0.69%
Davenport	252	256	1.58%	253	-1.17%
Fargo	105,549	125,990	19.37%	133,879	6.26%
Frontier	214	195	-8.88%	175	-10.26%
Gardner	74	129	74.32%	71	-44.96%
Grandin	173	186	7.51%	148	-20.43%
Harwood	718	794	10.58%	759	-4.41%
Horace	2,430	3,085	26.95%	3,464	12.29%
Hunter	261	332	27.20%	283	-14.76%
Kindred	692	889	28.47%	957	7.65%
Leonard	223	248	11.21%	260	4.84%
Mapleton	762	1,320	73.23%	1,151	-12.80%
North River	56	55	-1.79%	51	-7.27%
Oxbow	305	381	24.92%	354	-7.09%
Page	232	190	-18.10%	193	1.58%
Prairie Rose	73	56	-23.29%	36	-35.71%
Reile's Acres	513	703	37.04%	914	30.01%
Tower City	253	479	89.33%	296	-38.21%
West Fargo	25,830	38,626	49.54%	38,653	0.07%

Source: US Census Bureau Decennial Census: 2000, 2010 & 2020

Climate and Weather

Weather extremes in the county are shown in Table 2.3. Aggregated weather statistics for the county are shown in Table 2.4. The NWS Cooperative Network Weather Station at the Hector International Airport is used for aggregate data because it has the longest available record period in the county. Additional weather statistics can be found in Appendix C.

Table 2.3 – Cass County Weather Extremes		
Highest Max Temperature	114° F	07/06/1936
Lowest Min Temperature	-39° F	02/01/1996
Highest Daily Precipitation	4.72"	08/08/1943
Greatest Snowfall	21.0"	01/18/1996
Lowest Annual Precipitation	10.08"	1967

Source: NWS Cooperative Network Weather Station, Hector International Airport

Table 2.4 – Cass County Aggregated Weather Statistics				
	Temperature (°F)		Precipitation (in.)	Snow Fall
	Avg Daily Max	Avg Daily Min	Avg Monthly	Avg Monthly
Jan	18.2	0.2	0.71	10.3
Feb	22.7	4.1	0.69	8.1
Mar	36.3	18.1	1.25	9.2
Apr	54.1	31.9	1.54	4.1
May	68.7	44.4	3.09	0.0
Jun	78.1	55.6	4.29	0.0
Jul	82.1	59.4	3.07	0.0
Aug	80.7	56.8	2.60	0.0
Sep	72.0	48.1	2.68	0.0
Oct	55.8	35.2	2.17	1.2
Nov	38.1	20.9	0.97	6.8
Dec	24.0	7.5	0.89	11.7
Ann	*52.6*	*31.9*	*2.0*	*4.3*

Note: Aggregated Monthly Statistics 7/2/1948-6/10/2024
Source: NWS Cooperative Network Weather Station, Hector International Airport

Economy

Cass County has a diversified economy, with strong agriculture, healthcare and social assistance, tourism and hospitality, education, and government sectors. The agricultural industry, with almost a million acres of farmland in Cass County, is also a major contributor to the economy.

The agriculture industry is tracked by an annual survey and a 5-year census through the National Agricultural Statistics Service. Soybeans and corn are the most common crops, taking up 78 percent of all crop acreage. Cattle and calves, goats, sheep and lamb make up the county's livestock industry. The USDA Census of Agriculture indicates that in 2022 the total value of crops sold in the county was $612,696,000 and the total value of livestock was $17,169,000. Table 2.5 summarizes 2022 Census of Agriculture information.

Countywide workforce data is compiled by the Job Service North Dakota Labor Market Information Center. Table 2.6 identifies major employers in the region based on available LMI data and community estimates.

Table 2.5 - Cass County Agriculture Summary		
Crop	**Acres Harvested**	**Production**
Wheat for grain, all	90,533	5,947,368 bu
Soybeans	387,830	17,045,144 bu
Sunflower seed	28,582	71,188,084 lbs
Corn for grain	238,249	41,875,638 bu
Barley	16,100	1,235,347 bu
Hay	14,435	34,188 tons
Beans	14,102	314,248 cwt
Oats	2,433	175,157 bu
Sugar beets	13,005	319,106 tons
Rye	1,400	36,119 bu
Livestock	**Inventory**	
Cattle and Calves	6,118	
Goats	248	
Sheep & Lambs	1,327	

Source: USDA Census of Agriculture 2022

Table 2.6 – Cass County Economic Summary				
Industry	**Earnings (2021)**	**Property Income (2021)**	**Taxes (2021)**	**Total Gross Regional Product**
Manufacturing	$840.5 million	$871 million	$9.9 million	$1.7 billion
Distribution and Logistics	$498.8 million	$0 million	$0 million	$595.9 million
Autonomous Systems	$520.6 million	$426.2 million	$16 million	$962.8 million
Healthcare	No data available	No data available	No data available	No data available
AgTech	$634.5 million	$445.8 million	$12.7 million	$1.1 billion
Bioscience	$89.6 million	$137.1 million	$444.2 thousand	$227.1 million
Hardware & Software	$350.3 million	$311.5 million	$9 million	$680.8 million
Value Added Ag	$102.4 million	$150.9 million	$4.2 million	$257.5 million
Education	No data available	No data available	No data available	No data available

Source: North Dakota Labor Market Information, 2024

Table 2.7 Major Employers	
Sanford Health	Hospital
North Dakota State University	Educational Services
Essentia Health	Hospital
Fargo Public Schools	Educational Services
West Fargo Public School District	Educational Services
Marvin	Wood Product Manufacturing
City of Fargo	Executive, Legislative and General Government
VA Medical Center	Hospital
Cash Wise Foods and Hornbacher's	Food and Beverage Retailers
Noridian Healthcare Solutions	Insurance Carriers and Related Activities
(Nondiscolsable)	
CNH Industrial America	Machinery Manufacturing
Scheels All Sports	Sporting Goods, Hobby, and Book Stores
WEX	Insurance Carriers and Related Activities
Walmart	General Merchandise Retailers
Amazon.com	Warehousing and Storage
Bell Bank	Credit Intermediation and Related Activities
Aldevron	Chemical Manufacturing
(Nondisclosable)	
Blue Cross Blue Shield of North Dakota	Insurance Carriers and Related Activities
Bethany Retirement Living	Nursing and Residential Care Facilities
YMCA of Cass and Clay Counties	Amusement, Gambling, and Recreation
Fargo Park District	Amusement, Gambling, and Recreation
E W Wylie Corporation	Truck Transportation
US Bank	Credit Intermediation and Related Activities

Source: North Dakota Labor Market Information, 2024

Equitable Outcomes

The new Local Mitigation Planning Policy Guide indicates that:

"Local jurisdictions have a responsibility to ensure that the plan's mitigation strategy complies with all applicable legal requirements related to civil rights, to ensure nondiscrimination. Such compliance can help achieve equitable outcomes through the mitigation planning process for all communities, including underserved communities and socially vulnerable populations."

The Guide asserts that equity is essential to reducing risk to the whole community, particularly those who face barriers to accessing assistance and for populations that are disproportionately affected by disasters. In order to achieve this objective:

- We sought input from private and nonprofit sectors, and faith-based organizations, especially those involved in assisting socially vulnerable populations and underserved communities.
- We sought to identify barriers to accessing assistance for those who may be disproportionately affected by disasters.
- And we identified potential mitigation actions that could be established in this plan or accomplished independently of this plan.

STRATEGY

Our strategy included addressing the following six points:

1. Identify underserved communities in the county.
2. Identify socially vulnerable individuals or social groups in the county.
3. Identify organizations serving or representing underserved communities or socially vulnerable people.
4. Communicate with such organizations to elicit concerns pertaining to impacts of hazards or disasters on underserved communities or socially vulnerable people.
5. Communicate with individuals representing underserved communities or socially vulnerable people who are not served by or represented by any organization in the county.
6. Identify any specific mitigation actions which should be included in the MHMP in order to ensure hazard mitigation planning addresses underserved communities or socially vulnerable people present in the county.

This subsection summarizes the outreach efforts and results aimed at addressing these six points for Cass County.

The following list summarizes potentially underserved communities and socially vulnerable populations that may be present in Cass County. Underserved people may identify with one or a combination of vulnerability factors below:

- Children
- Experiences chronic conditions
- Developmentally disabled
- Economically disadvantaged
- Homeless
- LGBTQ+ individuals
- Migrants
- Is living in institutional settings
- Experiences limited transportation
- With pharmacological dependency
- Physically disabled
- Pregnant people
- Older adults
- Racial or ethnic minorities
- Refugees
- Veterans, especially those suffering from PTSD
- Limited cognitive abilities

- Limited English proficiency
- Limited mobility
- Limited sight or hearing
- Severe mental illness
- Without vehicles or access to transportation

FINDINGS

We contacted the following organizations serving or representing underserved communities or populations with access and functional needs:

- Cass Clay Food Commission
- Cass County Human Services
- Cass County Veterans Services Office
- CCRI
- CHI Friendship
- Community Health Alliance
- Dakota Boy's and Girl's Ranch
- Emergency Food Pantry
- Fargo Adult Learning Center
- Fargo Cass Public Health
- Fargo Housing Authority
- FirstLink
- Fraser PSH
- Freedom Resource Center for Independent Living
- Global Refuge North Dakota
- Great Plains Food Bank
- Handi-Wheels Transportation Inc.
- Jail Chaplains
- Medi-Van
- Metro Area Transit
- ND Health and Human Services
- North Dakota Behavioral Health Planning Council
- North Dakota Brain Injury Network
- North Dakota State College of Science
- North Dakota State University
- Preservation Partners in Housing
- Rural Cass County Emergency Food Pantry
- Salvation Army
- Senior Coalition
- Senior Service Center
- Southeastern North Dakota Community Action Agency
- The Arc of Cass County
- United Way of Cass Clay
- VA/VTS Van
- Valley Senior Services
- Veterans Office for Cass County
- Wellness Empowerment Center for New Americans
- YMCA Cass County
- YWCA Shelter of Cass-Clay Counties

We contacted each organization and provided an introduction letter informing them of the Multi-Hazard Mitigation plan and how important their feedback was to develop the plan. We also provided a short survey for each organization to fill out. The results of their feedback are detailed below.

Survey respondents, primarily from organizations in Fargo with some representation from West Fargo, Horace, and Casselton, identified key hazard impacting vulnerable populations. Hazards of concern were ranked by respondents and the top six hazards of concern in order from most concern to least are infectious disease, severe winter weather, flooding, severe summer weather, cyberattacks, and hazardous materials release. Impacts include increased stress, financial hardship, and displacement during hazard events such as flooding, as well as challenges like transportation disruptions, language barriers, and limited preparedness among New Americans, refugees, immigrants, and other underserved communities. Power outages, though not specifically profiled in this MHMP, were noted as a hazard of concern due to vulnerable populations reliance on electricity for medical needs.

Respondents emphasized the importance of accessible communication, transportation during evacuations, and targeted outreach to marginalized populations, including New Americans and those with disabilities. Preferred communication methods include TV, cell phones, social media, and email – it was noted that communication needs to be provided in accessible ways, both in language options and written and oral options, as some people are unable to read English and their native language. Many vulnerable populations lack basic preparedness items, highlighting a significant gap in readiness. Organizations responding to the survey noted unique challenges such as maintaining 24/7 operations during severe weather, medication delivery disruptions, and coordination for non-local individuals relying on services. Strengthening outreach, preparedness, and involvement of vulnerable populations in planning are the key take aways from the survey.

CHAPTER 3: Hazard Risks and Vulnerabilities

Hazards Overview

DISASTER DECLARATIONS

Cass County is subject to several natural and human-caused or technological hazards. Many hazards are capable of creating significant levels of damage and having a negative effect on the local economy.

Table 3.1 lists Presidential Disaster Declarations for Cass County from 1953 to 2024. There were 70 unique Presidential Disaster Declarations in North Dakota during the period, and Cass County was designated for 35 of them. The most recently declared disasters pertained to straight line winds in February of 2024.

PROFILED HAZARDS

The 2024 State of North Dakota Enhanced Mission Area Operations Plan served as the basis for selecting the hazards profiled in this chapter. Homeland Security, identified in the 2014 statewide Multi-Hazard Mitigation Plan, was replaced by Civil Disturbance, Cyberattack, and Criminal Terrorist National Attack which are profiled as separate hazards in the 2019 Enhanced Plan. Space Weather was also new in the 2019 Enhanced Plan. In this plan these hazards are profiled in a limited manner due to the low perceived level of impact or the perceived low potential to mitigate impacts. Wildland Fire and Urban Fire (including structural collapse) were combined into a single Fire hazard in the 2019 Enhanced Plan; but they are retained as separate hazards in this region due to the very different impacts and responses needed for each. References to shortages and outage of critical materials from the 2014 Plan were eliminated because they are more impacts of hazards than actual hazards. Finally, Communicable Diseases from the 2014 Plan has been renamed Infectious Diseases.

Profiled natural hazards:
- Drought
- Flood
- Geologic Hazards
- Severe Summer Weather
- Severe Winter Weather
- Wildland Fire
- Space Weather
- Infectious Disease/Pest Infestation

Profiled technological hazards:
- Dam Failure
- Hazardous Materials Release
- Transportation Incident
- Urban Fire

Profiled adversarial hazards:
- Cyberattack
- Criminal/Terrorist Attack

Table 3.1 – Cass County Presidential Disaster Declarations, 1953-2024		
Date	Declaration	Hazard(s)
02/15/2024	4760	Severe Winter Storm and Stright-line Winds
07/09/2020	4553	Flood
04/01/2020	4509	Biological
03/13/2020	3477	Biological
06/12/2019	4444	Flood
05/29/2013	4118	Flood
04/26/2013	3364	Flood
05/10/2011	1981	Flodd
04/07/2011	3318	Flood
04/30/2010	1907	Flood
03/14/2010	3309	Flood
03/24/2009	1829	Severe Storm
09/07/2007	1725	Severe Storm
07/17/2007	1713	Severe Storm
06/05/2006	1645	Severe Storm
01/04/2006	1621	Severe Storm
09/13/2005	3247	Coastal Storm
05/28/2001	1376	Flood
06/27/2000	1334	Severe Storm
06/08/1999	1279	Flood
06/15/1998	1220	Flood
04/07/1997	1174	Flood
01/12/1997	1157	Severe Storm
06/05/1996	1118	Severe Storm
07/26/1993	1001	Flood
05/08/1989	825	Flood
04/26/1979	581	Flood
04/17/1978	554	Flood
07/11/1975	475	Flood
05/24/1975	469	Flood
06/05/1970	287	Flood
04/18/1969	256	Flood
03/23/1966	216	Flood
05/10/1965	195	Flood
05/10/1965	195	Flood

Source: FEMA

HAZARD ANALYSIS

Natural hazards are listed first, followed by technological and adversarial hazards. Each profiled hazard includes the following information:

- **Hazard Profile:** Definition and general explanation of the hazard.
- **History:** Previous occurrences of the hazard.
- **Probability:** Estimated frequency of occurrence.
- **Location:** Identification of hazard location to specific parts of the county or as county-wide.
- **Extent:** The magnitude of the hazard.
- **Vulnerability:** Specific risk for the jurisdiction, including impacts to population, property, critical facilities, and economy.
- **Existing Capabilities:** Current actions taken by the jurisdiction to address the hazard are found in Chapter 4.
- **Key Issues:** The primary issues that affect the jurisdiction and the basis for determining action items.
- **Potential Action Items:** A preliminary list of action items to address key issues. These items are refined and prioritized in Chapter 5.

The profiles include an analysis of the probability and impact of each event to determine overall hazard risk. These terms are defined similarly to their use in the 2019 Enhanced Plan. Probability is the likelihood that the hazard event will occur within the county in future years. Impact, and the extent to which critical facilities could be significantly affected by the hazard event in a worst-case scenario. Criteria used to determine probability, impact, and overall risk class are shown below. Historical data from previous events was utilized to determine probability and magnitude when possible. Risk class is determined for the rural county (unincorporated areas) and each incorporated city. Table 3.2 illustrates the relationship between probability, impact, and risk class.

Probability

Low: less than 10 percent probability in the next year
Moderate: 10-100 percent probability in the next year
High: more than 100 percent probability in the next year

Impact

Low: less than 5 percent of jurisdiction exposed
Moderate: 5-10 percent of jurisdiction exposed
High: more than 10 percent of jurisdiction exposed

Risk Class

Low: at most either impact or probability are considered moderate, but not both
Moderate: above the low-risk class, while at most either impact or probability are considered high, but not both
High: above the moderate risk class, while at least either impact or probability are considered high

Hazard statistics for recent years are provided from the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center's Storm Data and Unusual Weather Phenomena database. The Storm Data and Unusual Weather Phenomenon database provides a comprehensive list of weather events along with vital information about each event. Information from the database is provided in the corresponding hazard profiles and Appendix C. For Cass County, the database includes information about flooding, severe summer weather and severe winter weather. Statistics for other hazards are provided by a variety of sources, as noted in each corresponding profile.

Table 3.2 - Risk Class Determination Criteria

		Impact		
		Low	Moderate	High
Probability	Low	Low	Low	Moderate
	Moderate	Low	Moderate	High
	High	Moderate	High	High

Extreme Weather Variability and Climate Change

The new Local Mitigation Planning Policy Guide indicates that risk assessment must take into account the impacts stemming from the effects of climate change and that mitigation actions should include those aimed at reducing the vulnerabilities and impacts from those effects. In order to respond to this requirement:

- We defined climate change and described what it means in North Dakota.
- We postulated impacts that could occur in North Dakota and in Cass County due to the effects of climate change.
- And we identified potential mitigation actions that could be established in this plan or accomplished independently of this plan to reduce the impacts of climate change in Cass County.

STRATEGY

Our strategy included addressing the following three points:

1. Identify specific changes to weather patterns that are indicative of climate change in North Dakota.
2. Describe how these changing weather patterns relate to specific hazards addressed in this plan which are now or could occur in the future.
3. Identify any specific mitigation actions which should be included in the MHMP in order to ensure hazard mitigation planning addresses underserved communities or socially vulnerable people present in the county.

A preliminary draft of this chapter was provided to ND DES seeking some comments. It was also shared with Greg Gust, a meteorologist working with the DES on the Statewide Hazard Mitigation Plan Update. Greg Gust provided the following insights pertaining to North Dakota:

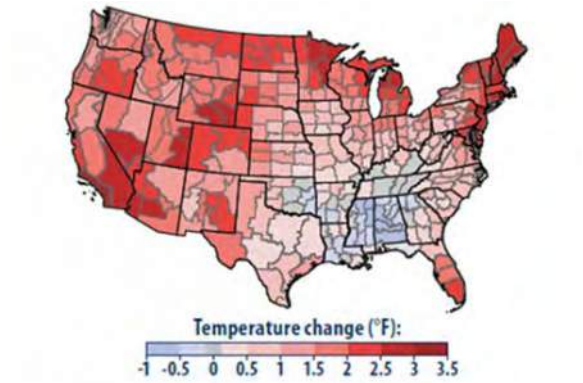
> **North Dakota Extreme Climate Variability** means that all areas of the state have a high degree of day-to-day, week-to-week, month-to-month, season-to-season, year-to-year, and even multi-decadal variability in both temperature and precipitation. It is quite "normal" in North Dakota, and the Northern Plains in general, to have short to long periods of hotter or colder temperatures and periods of drier or wetter conditions in any mix and in any season of the year.
>
> **Potential Climate Change** to the end of this century means [could result in] increased overall temperatures and/or more frequent periods of higher temperature, in virtually any season, coupled with increased variability in seasonal and or/ annual precipitation [that] can lead to longer and stronger droughts interspersed with more frequent and more intense flooding. Most climate models predict somewhat increased precipitation amounts across North Dakota, with cool seasons (fall, winter, spring) most favored for high precipitation amounts while summer is most favored for near normal to lesser amounts.

The key takeaway is that North Dakota's extreme weather variability will likely continue to be the primary influencer or signal within each of the natural hazards which directly or indirectly impact jurisdictions and people across the state, over days to decades long timescales, and the much more subtle and gradual; trends of climate change over the rest of this century may act to further extend the range of variability beyond that which has previously been documented in the historical record.

FINDINGS

Climate change is defined by FEMA as "changes in average weather conditions that persist over multiple decades or longer." Three specific ways that weather conditions have changed in North Dakota include warmer temperatures, increased precipitation, and increased intensity of droughts. The EPA August 2016 publication, "What Climate Change Means for North Dakota," supports the claim that the climate in the state is changing. For example, most of the state has warmed about two degrees over the last century. In fact, North Dakota has warmed more than most of the United States. (See Figure 3.1) "The warming is most evident in winter, but apparent in all seasons, and is reflected in a below average number of very cold days since 2000." (Source: NOAA National Centers for Environmental Information | State Climate Summaries 2022 150-ND).

Figure 3.1 - Temperature Change in the United States



Rising temperatures in the last century. North Dakota has warmed more than most of the United States. Source: EPA, Climate Change Indicators in the United States.

Extreme variability is a hallmark of North Dakota's climate. Climate studies suggest that North Dakota's extreme weather variability will likely continue to be the primary influencer or signal within each of the natural hazards which directly or indirectly impact jurisdictions and people across the state, over days to decades long timescales, and the much more subtle and gradual trends of climate over the rest of this century may act to further extend the range of such variability beyond that which has previously been documented in the historical record.

In addition to anticipated continued rising temperatures, "extreme precipitation events are also projected to increase in frequency and intensity, potentially leading to increased runoff and flooding, which can reduce water quality and erode soils." During the last 50 years, the amount of rain falling during the wettest four days of the year has increased about 15 percent in the Great Plains, including North Dakota. The intensity of droughts through the end of this century is projected to increase in large part because of the rising temperatures, coupled with more intense but spottier summer rains.

In the following specific hazard analysis, there is a section on how extreme weather variability or climate change will affect each specific hazard.

Change in Development and Current or Future Assets

According to comments received in the Plan Review Tool, this plan should discuss changes in development in each jurisdiction that increased or decreased vulnerability over the last five years. Over the previous five years, most jurisdictions in Cass County did not have any change that increased or decreased vulnerability. Each jurisdiction is discussed below:

- Cass County – None
- Alice – No new development was identified by the city
- Amenia - No new development was identified by the city
- Argusville - No new development was identified by the city
- Arthur - None
- Ayr - No new development was identified by the city
- Briarwood – one home was demolished
- Buffalo said – No new development was identified by the city
- Casselton - 50 new residential lots and five commercial lots were completed, and 10 new homes built
- Davenport – No new development was identified by the city
- Fargo – In the last five years, Fargo has issued approximately 480 new commercial permits and 1080 new residential permits
- Frontier - No new development was identified by the city
- Gardner – In the past ten years, 18 homes have been built
- Grandin - None
- Harwood - None
- Horace – Since 2021, 740 permits were issued and in the past ten years, 40 new plats have been approved by the city. (1,480 permits since 1998)
- Hunter - No new development was identified by the city
- Kindred – No new development was identified by the city
- Leonard - No new development was identified by the city
- Mapleton - No new development was identified by the city
- North River – None
- Oxbow – Issued 205 residential permits and one commercial building permit
- Page - None
- Prairie Rose - None
- Reile's Acres - None
- Tower City – No new development was developed by the city
- West Fargo – In the last five years, West Fargo has issued approximately 1194 new residential permits and 108 new commercial permits

Drought

All Jurisdictions
Overall Risk: High
Probability: Moderate (once per decade, approximately 10% to 20% annual probability)
Magnitude: High (economic impact on the entire county)

Seasonal Pattern
None but impacts may be greater during spring and summer

Duration
Months/Years

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Increased fire potential
Loss of potable water
Pest Infestation

HAZARD PROFILE

Drought is generally defined as a deficiency of precipitation over an extended period. If severe enough, this deficiency has potential to reduce soil moisture and water below the minimum necessary for sustaining plant, animal, and human life systems. It is a normal, recurrent phenomenon that takes place in nearly all climate zones. Droughts appear gradually, and it is often difficult to pinpoint their beginning and end. Droughts can last multiple years and even persist over decades. Significant droughts in North Dakota occur approximately once per decade. Previous significant droughts covering more than 50% of the state occurred in the late 1910's, 1930s, 1950s, 1960s, late 1970s, early 1980s, 1988-1991, 2007-2008, 2017-2018 and 2020-2021.

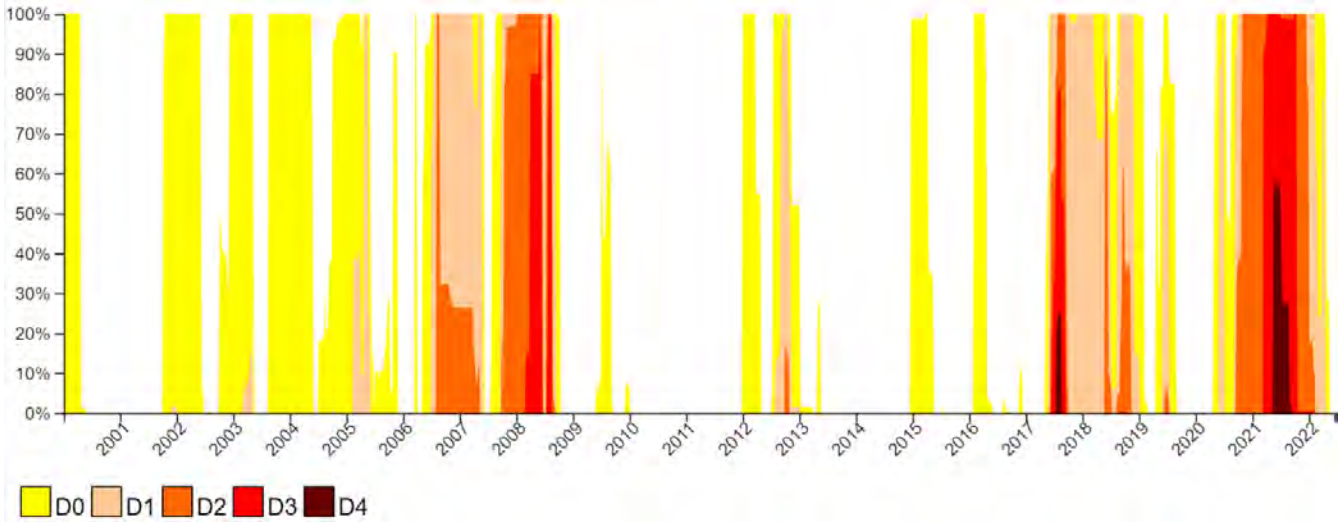
HISTORY AND EXTENT

Historic trends show that wetter-than-normal periods tend to alternate with drier-than-normal periods. The average annual precipitation in Cass County is 23.78 inches as recorded at the Hector International Airport National Weather Service Cooperative Network weather station. The county's lowest annual precipitation is 8.39 inches, which was recorded in 1976.

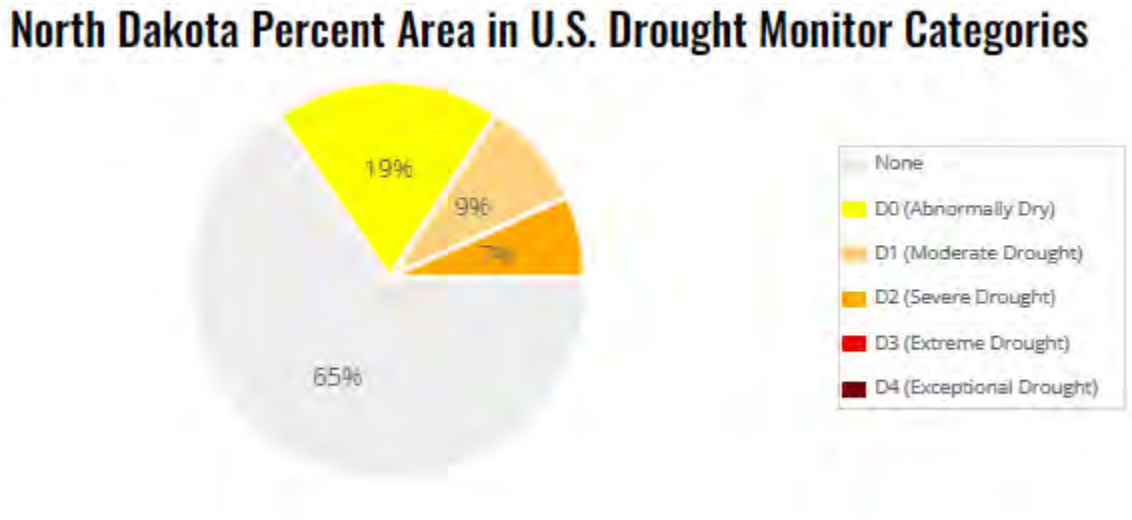
Figure 3.2 illustrates the percentage of area and intensity of drought conditions since 2000 in Cass County with the US Drought Monitor (USDM). The map uses six classifications: normal conditions, abnormally dry (D0), showing time periods that starting or coming out of drought, the four levels of drought are: moderate (D1), severe (D2), extreme (D3), and exceptionally (D4). The color code key corresponding to each classification is found under Figure 3.2. Yellow indicates abnormally dry conditions. The red and brown colors indicate extreme and exceptional drought conditions, respectively. The chart shows that widespread extreme drought occurred three times during that time period.

The most recent severe drought began in the fall of 2020 and became an extreme and exceptional drought through much of 2021. Under these conditions, crops stop growing, pastures go dormant and emergency haying of conservation areas is authorized. This is the first time since 2017 when parts of Cass County experienced "exceptional drought" status. The D4 level on the drought scale is a very rare occurrence, happening less than 2% of the time. Impacts of this D4 drought included widespread crop and pasture losses, and shortages of water in reservoirs, streams, and wells.

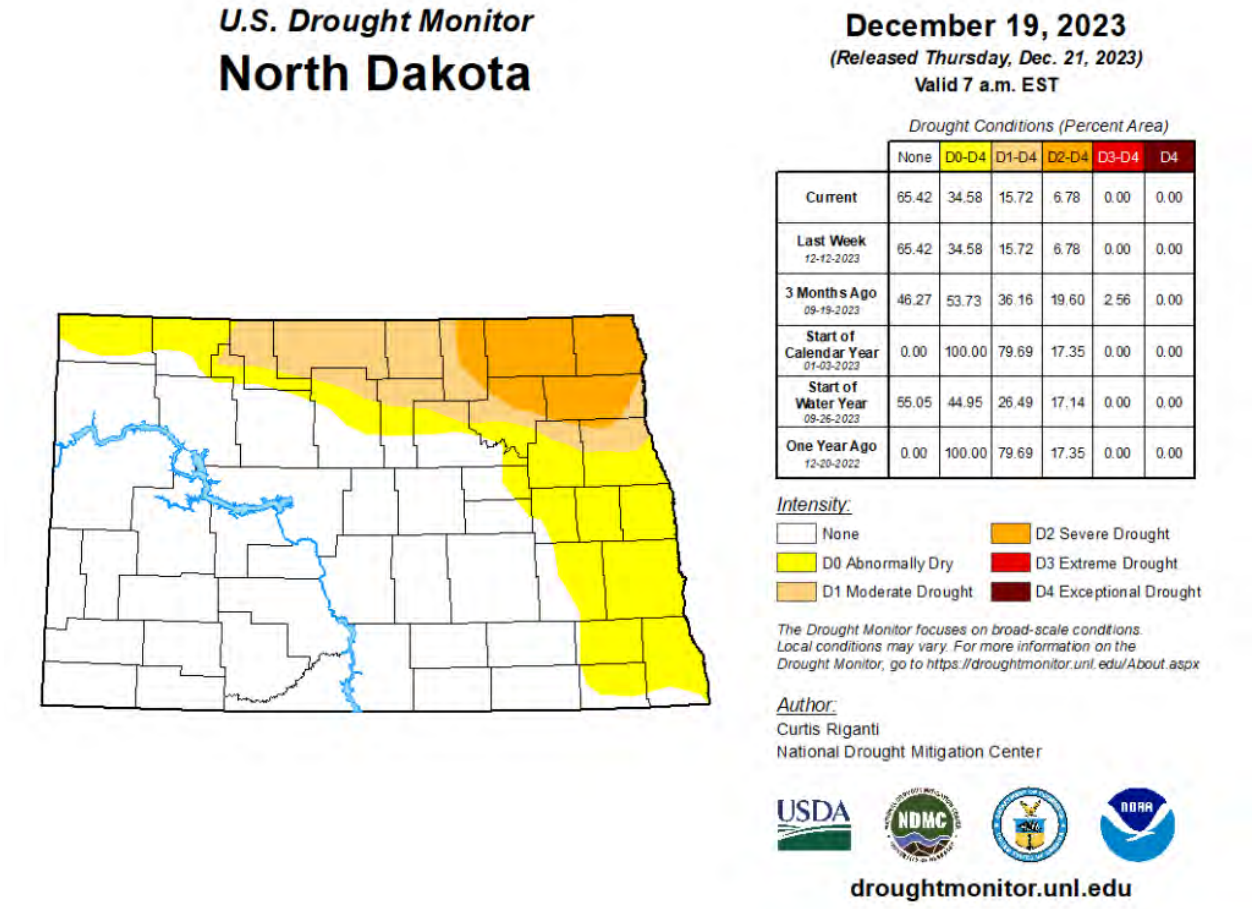
Figure 3.2 – Cass County Drought Percent of Area and Intensity of Conditions (2000-2022)



Source: USDA Drought Monitor



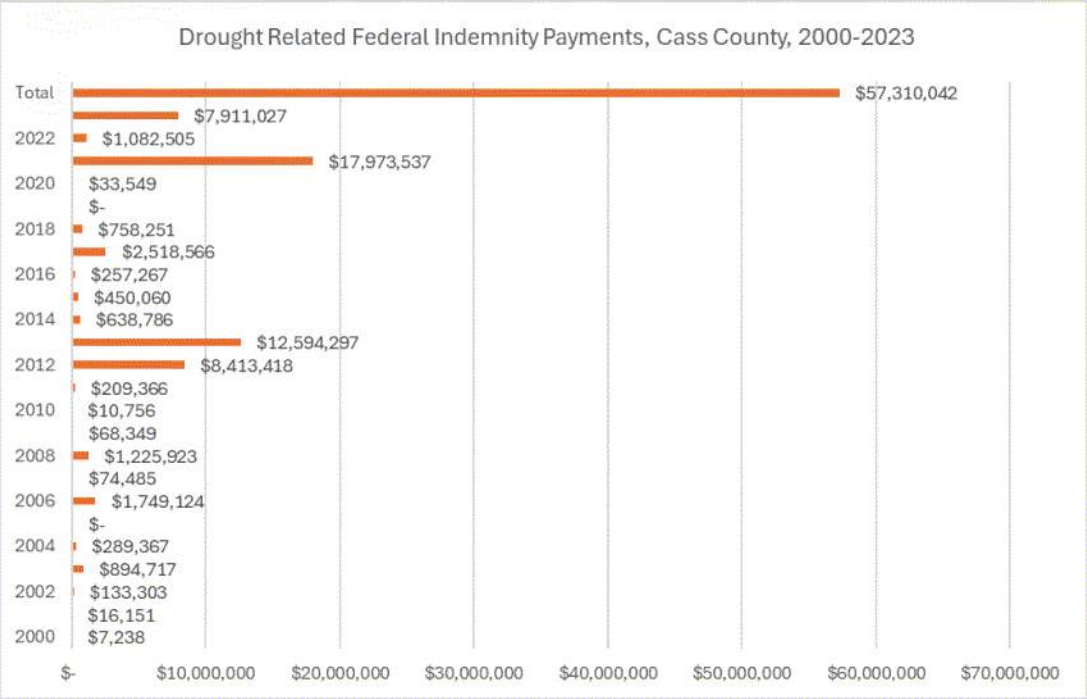
Source: USDA Drought Monitor



Source: USDA Drought

Historical drought occurrences can also be measured by looking at impacts. Federal indemnity programs provide financial assistance to help reduce the impact of drought-related agricultural losses. Figure 3.3 shows indemnity payments for Cass County from 2000-2023. The figure shows that 2021 had the largest drought indemnity payments during the period. The years 2006, 2008, 2012, 2013, 2017, 2021, 2022, and 2023 also had drought related payments in excess of $1,000,000.

Figure 3.3 – Drought-Related Federal Indemnity Payments, Cass County, 2000-2023



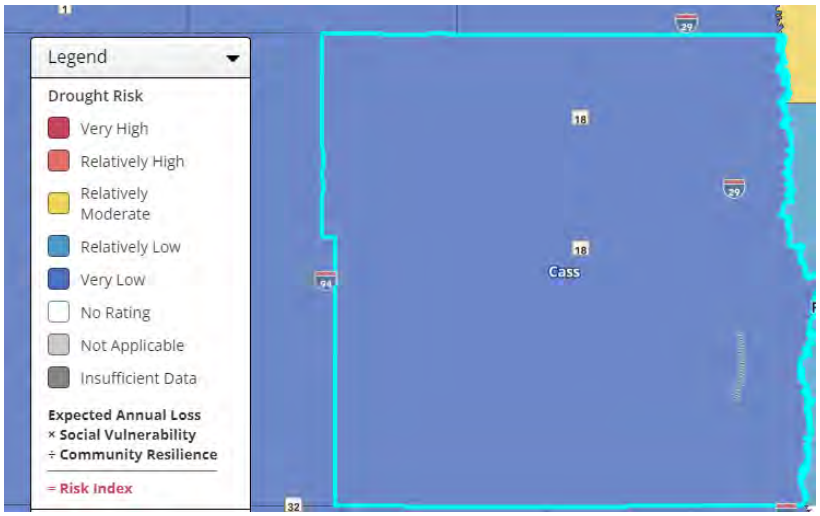
Source: National Drought Mitigation Center (USDA Risk Management Agency 2018-2024)*

PROBABILITY

It is difficult to predict when a drought will appear. Historic trends show that wetter-than-normal periods tend to alternate with drier-than-normal periods. It is important to note, however, that numerous factors beyond rainfall contribute to drought status, which can make it difficult to predict and classify droughts. As illustrated in Figure 3.2, droughts classified as severe or worse occurred four times in the last 22 years and lasted approximately 4.5 years. This equates to a 20% probability.

The National Risk Index (NRI) is an interactive tool built by FEMA that utilizes local sources for natural hazard history and community risk factors for each county in the United States. Figure 3.4 shows the NRI for drought in Cass County, which is considered “very low”.

Figure 3.4- Drought Risk in Cass County



[Map | National Risk Index (fema.gov)]

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

One of the biggest risks the county faces is the increasing intensity of drought conditions. With hotter and potentially drier summers, drought periods could increase. With a parched landscape, the risk of dust storms increases as well.

LOCATION

Drought occurs at a regional level and is not a micro-climatic event. It generally occurs across the entire geographical area encompassed by a county. All parts of Cass County are at equal risk from drought.

VULNERABILITY

Population

Drought has no direct impact on human life, but it greatly increases the risk of wildfire, which is a potentially life-threatening hazard. Drought accompanied by high temperatures can increase the threat of heat-related illness for persons who spend a significant amount of time outdoors or do not have adequately cooled homes. The highest recorded temperature in the county (at the Fargo monitoring station) was 102 degrees Fahrenheit in July 2006 and June 2021. Elderly persons are at increased risk of heat-related illness. Approximately 35,798 residents in the county are 65 years of age or older. The estimated number of residents aged 65 or older for each jurisdiction are summarized below.

- Alice: 7 people
- Amenia: 12 people
- Argusville: 26 people
- Arthur: 52 people
- Ayr: 1 person
- Briarwood: 11 people
- Buffalo: 50 people
- Casselton: 333 people
- Davenport: 22 people
- Fargo: 16,348 people
- Frontier: 40 people
- Gardner: 13 people
- Grandin: 34 people
- Harwood: 34 people
- Horace: 297 people
- Hunter: 42 people
- Kindred: 67 people
- Leonard: 55 people
- Mapleton: 99 people
- North River: 14 people
- Oxbow: 34 people
- Page: 38 people
- Prairie Rose: 15 people
- Reile's Acres: 47 people
- Tower City: 46 people
- West Fargo: 4,069 people

Population centers are more at risk of the impacts of drought. In Cass County the population centers are Alice, Amenia, Argusville, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, West Fargo. Fargo is the largest population center in the county.

Prolonged drought could affect water supplies described in Table 3.3. Bottled water could be brought in as an emergency measure, but a lack of household water could create health and sanitation issues for residents.

Table 3.3 – Cass County Water Provider	
City	Provider
Rural Cass County	Rural Cass Water
Alice	Enderlin City Water Department
Amenia	Cass Rural Water
Argusville	Cass Rural Water
Arthur	Cass Rural Water
Ayr	Cass Rural Water
Briarwood	Fargo Water Treatment Facility
Buffalo	Cass Rural Water
Casselton	Rural Cass Water
Davenport	Rural Cass Water
Fargo	Fargo Water Treatment Facility
Frontier	Cass Rural Water
Gardner	Cass Rural Water
Grandin	Cass Rural Water
Harwood	Cass Rural Water
Horace	Cass Rural Water
Hunter	Cass Rural Water
Kindred	Cass Rural Water
Leonard	Cass Rural Water
Mapleton	Cass Rural Water
North River	Cass Rural Water
Oxbow	Cass Rural Water
Page	Cass Rural Water
Prairie Rose	Cass Rural Water
Relies Acres	Cass Rural Water
Tower City	Cass Rural Water
West Fargo	Fargo Water Treatment Facility

Property

Drought can result in significant loss of land and non-land property value for farmers and ranchers. Beyond agricultural impacts, there is also a greater threat of structure damage in drought-affected areas, as drought increases the risk of wildfire and may create water shortages that inhibit adequate fire response. Structure vulnerability from wildfire is discussed in more detail in the wildland fire section of this chapter.

Critical Facilities

No critical facility in the county is physically impacted by drought.

Economy

"Many North Dakota farmers and ranchers harvested drought-stricken crops, small grains or other alternative forages to make up for reduced hay protection. These drought-stressed forages can be high in nitrates and cause toxicity issues in cattle, say North Dakota State University Extension specialists. Slowing the rate of intake of high-nitrate hay is key to reducing risk. Cattle can adapt to higher levels of nitrates by slowly transitioning from forages low in nitrate to higher nitrate forages." (The Jamestown Sun (N.D.). Dec 5, 2021)

Agriculture is a significant economic driver in the county, and the economic success of most cities ultimately relies on a healthy agriculture industry. Drought can have a significant economic impact on agriculture and related industries. Federal indemnity payments, previously shown in Figure 3.2, are an indicator of drought-related agricultural losses. Since 2000, the year with the greatest payments was 2021, with $17,973,537.

The drought-related crop insurance payments in Cass County from 2000 through 2023 totaled $57,310,042 Based on a statewide rate of 89 percent of crops being insured, total estimated damages for the County were $64,505,655.
The direct economic loss of drought for livestock producers is difficult to measure. Cattle and calve numbers regularly fluctuate based on a wide number of factors. Impacts on livestock producers include reduced rangeland productivity, high cost/unavailability of water for livestock, disruption of reproductive cycles and the cost of finding supplemental feed or pasture.

Future Development

Public water systems are monitored by the North Dakota Department of Health and Human Services, and water permit applications are maintained by the North Dakota Department of Water Resources and US Army Corps of Engineers.

EXISTING CAPABILITIES

The USDA Farm Service Agency and North Dakota State University Extension have field offices in Fargo. Both offices offer general education relating to drought management best practices. The USDA Farm Service Agency field office assists with the distribution of drought indemnity payments to agricultural producers. There are no indications that existing water supply sources could not provide the current maximum use volumes during extended or extreme droughts. There are no established policies or protocols for handling the impacts of extended or extreme drought conditions; however, The City of Fargo has a drought management plan to track and reduce impacts of a water shortage and drought. The City of West Fargo also has a drought response plan to reduce impacts.

North Dakota Department of Agriculture offers resources to help livestock producers manage forage shortages caused by drought. NDSU's FeedList allows producers to list or search for hay, corn, or pasture available for sale, rent or donation, with free access and listings automatically removed after 90 days. The North Dakota Department of Agriculture also provides a Hay Hotline and interactive map to connect users with hay, pasture, Conservation Reserve Program (CRP) land for grazing or haying, and hay transportation services. These services are free of charge.

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Agriculture is a key component of the county's economy. A significant drought has the potential to greatly affect the industry and the county as a whole.

Potential Action Item: Continue supporting the USDA Farm Service Agency and North Dakota State University Extension and provide assistance as needed to local farmers and ranchers.
Potential Action Item: Develop emergency response plan that includes coordination with local livestock producers.
Potential Action Item: Educate residents on water saving techniques.
Potential Action Item: Educate farmers on soil and water conservation practices.
Potential Action Item: Encourage farmers to purchase crop insurance.

Flood

Flooding impacts can be severe where they occur but are often localized to relatively small and/or sparsely populated areas. Table 3.4 outlines each jurisdiction's estimated risk, probability, and impact.

Table 3.4 – Jurisdictional Flood Hazard Information

City	Overall Risk	Probability	Impact
Rural Cass County	High	Greater than 100% Chance Per Year County-Wide	Moderate
Alice	Low	Low	Low
Amenia	High	Moderate	High
Argusville	High	Moderate	High
Arthur	Low	Low	Low
Ayr	Moderate	Moderate	Moderate
Briarwood	Low	Low	Low
Buffalo	Low	Moderate	Low
Casselton	Low	Low	Low
Davenport	High	Moderate	High
Fargo	High	Moderate	High
Frontier	Low	Low	Low
Gardner	Low	Low	Low
Grandin	High	Moderate	High
Harwood	Low	Low	Low
Horace	High	Moderate	High
Hunter	Low	Low	Low
Kindred	Low	Low	Low
Leonard	High	Moderate	High
Mapleton	Low	Low	Low
North River	High	Moderate	High
Oxbow	Low	Low	Low
Page	Low	Low	Low
Prairie Rose	High	Moderate	High
Relies Acres	Low	Low	Low
Tower City	High	Moderate	High
West Fargo	Low	Low	Low

Seasonal Pattern
March – October

Duration
One week

Primary Impacts
Agricultural loss (crops, livestock)
Blocked roads
Economic loss

Human loss and injuries
Localized evacuation
Property damage or loss

HAZARD PROFILE

Primary causes of flooding in North Dakota include heavy rain/flash flooding, rapid snowmelt/ice jams and increased seasonal moisture. Flooding can occur in riverine zones or flat areas that lack adequate drainage. Flooding is often categorized into three types, flash, overland, and riverine flooding.

Flash Flooding is a sudden or rapid flooding event caused by intense rainfall over a short period time (typically less than six hours), dam or levee failure, or a sudden release of water from a blocked river or lake. This event can occur with little to no warning and can be extremely dangerous due to the swift rise of water levels, which can quickly inundate roads, homes, and other structures.

Overland Flooding, also called areal flooding, refers to the water flow that occurs when rainfall, snowmelt, or runoff from higher ground flow over the land surface, rather than being absorbed into the ground or collected by natural drainage systems like river or streams. This type of flooding occurs when the ground is saturated, frozen, or impermeable, or when prolonged and persistent rainfall exceeded drainage systems' capacity. Overland flooding can affect large areas, often leading to widespread water damage to property, infrastructure, and agricultural lands.

Riverine flooding occurs when rivers, streams, or other bodies of water overflow their banks due to excessive rainfall, snowmelt, or dam releases. This type of flooding often develops over a longer period compared to flash flooding, allowing for some level of warning. Riverine flooding can inundate large areas, especially in floodplains, and can last for days or weeks, depending on the severity of the event and the river's size. The extent of riverine flooding is often influenced by factors such as the river's flow rate, the amount of upstream runoff, and the terrain surrounding the river,

Typical insurance policies do not cover flood damage, so FEMA created the National Flood Insurance Program (NFIP) to provide flood insurance for property owners. The NFIP makes flood insurance available to residents in NFIP-participating communities that adopt and enforce ordinances and follow other basic requirements.

A Flood Insurance Rate Map (FIRM) is created to determine flood insurance rates for each participating community. The FIRM identifies Special Flood Hazard Areas (SFHA) with a one percent annual chance of flooding, commonly called the 100-year floodplain. Areas outside the SFHA are considered in the Non-Special Flood Hazard Area (NSFHA). Structures in the NSFHA may still be at risk from flooding; according to FEMA, one in every four floods occurs in an NSFHA. Flood insurance is required for all property owners who acquire a loan from a federally regulated, supervised, or insured financial institution for the acquisition or improvement of land, facilities or structures located within an SFHA.

HISTORY AND EXTENT

Cass County was included in 22 flood-related Presidential Disaster Declarations between 1953 and 2024.

Localized road and culvert washouts are the most commonly identified impacts of flood events in the county, although some events resulted in more significant impacts. The National Climatic Data Center Storm Events Database includes brief summaries of significant storm events. A selection of recent flood events within Cass County are summarized below.

- **April 2, 1997.** Melting snow caused overland flooding, prompting the cities of Casselton, Amenia, and Mapleton to construct dikes and sandbag defenses. Water inundated fields along I94 between Casselton and West Fargo, with portions of the highway submerged in several areas. The Maple River rose to 15.4 feet becoming the first North Dakota river to exceed its flood-of-record stage; flood of record was 15 feet. The event caused an estimated $10 million in property damage.
- **April 8, 1997.** Record level of 92.02 feet on the Sheyenne River caused $100 million in property damage in the cities of Harwood, Kindred, and West Fargo, Interstate 29 near Harwood had to be closed, and the people of Harwood could only leave by boat.

- **April 16, 1997.** The Red River crested on April 18th, reaching a new century record of 39.72 feet, causing severe flooding in the Hickson and Fargo areas. Numerous homes along the Red River were submerged, and overland flooding impacted the southern and southwestern parts of Fargo, even flowing over Interstate 29 near the Horace exit. A clay dike was like was constructed to protect the thousands of homes on Fargo's south side, and a section of U.S. Highway 81 was cut to reduce water levels. Property damage from the event reached an estimated $150 million, The following day, the Red Rive broke through the dike on South Terrance Drive in Fargo, flooding 30 homes. The same day, flood waters reached Oak Grove High School despite three weeks of sandbagging efforts by 270 students, teachers, and parents to protect the school.
- **June 19, 2000.** A series of severe thunderstorms brought record-breaking rainfall to Cass County. The official observer in north Moorhead, across the Red River from Fargo, recorded 7.321 inches of rain within 24 hours, the highest on recorded for the area. Rainfall totals reached 6 to 8 inches across eastern Cass County, causing significant runoff into area rivers. The Sheyenne River overflowed its banks north of Fargo, flooding a rest stop along Interstate 29, while the Red River rose from 15.64 feet to 22.85 feet within two days, leading to the closure of several low-lying roads. The heavy rain caused widespread flooding inundated roadways, including sections of Interstate 29 and 94, and disrupted traffic throughout the region. Around 200,000 customers lost power due to a submerged power station, prompting a state of emergency declaration at 3:00 a.m. Half of the city's streets were flooded, and phone and internet services were severely impacted. The Fargodome experienced severe flooding, with 51.8 million gallons of water filling its lower level, while North Dakota State University (NDSU) faced extensive damage, including four feet of water in the NDSU Library. Overall, the flooding caused $20 million in crop damage.
- **April 6, 2001.** Heavy snowmelt coupled with heavy rain as well as a temporary dike failing along the Red River in Fargo lead to flooding causing heavy damage to roads, streets, and bridges throughout the county causing $4 million in property damage.
- **April 1, 2006.** River and overland flooding caused by snowmelt throughout the county. The Red River crested at 37.1 feet leading to partial closure of several major roadways due to water flowing on the road, water was also covering all sides of the interstate in the ditches. This caused $1.34 million in property damage, and 1 death in Fargo.
- **March 28, 2009.** The Red River of the North crested at a record 40.82 feet, triggering severe spring flooding in the Fargo-Moorhead area. In response, volunteers filled and placed sandbags along drains, while miles of clay levees were constructed along the river and nearby streets to protect homes and critical infrastructure. Approximately 3,500 people were evacuated, including 2,5000 vulnerable adults from hospitals, nursing homes, and group homes, who were transported across North Dakota, South Dakota, and Minnesota via ambulance, MedFlight, and buses. The combined expenditures by the City of Fargo and Cass County totaled over $15 million, excluding costs for smaller cities or private damage. Cass County received a Presidential Disaster Declaration for both Individual and Public Assistance.
- **March 21, 2010.** The Red River of the North at Fargo reached a flood depth of 36.99 feet. To protect property in the Fargo Moorhead area, approximately 1.5 million sandbags were deployed. Several bridges crossing the Red River were closed, but no significant damage was reported. Emergency response costs for the City of Fargo and Cass County exceed $7.3 million, excluding expenses incurred by smaller towns and private damage.
  The Red River at Fargo reached a flood depth of 36.99 feet. To protect property in the Fargo-Moorhead area, approximately 1.5 million sandbags were deployed. Several bridges over the Red River were closed, but no significant damage was reported. Emergency response expenditures for the City of Fargo and Cass County exceeded $7.5 million, not including costs for smaller towns or private damages.
- **April 9, 2011.** The Red River at Fargo crested at 38.81 feet on April 9, 2011, marking the fourth highest crest on record. Flooding began in the Red River Valley on March 22, with Fargo reaching flood stage on March 29. Due to a wet summer, the area remained above flood stage for 150 days, finally dropping below on August 27. Emergency expenditures for the City of Fargo and Cass County totaled more than $13.7 million, excluding costs for smaller towns and private damages.
- **April 4, 2019.** The Red River crested at 35.03 feet due to record February snowfall and two major March snowstorms. A second crest of 30.05 feet occurred two weeks later after another significant snowstorm. The Fargo/Cass County Tactical Operations Center opened for 24-hour operations on April 5, with additional support from the North Dakota National Guard and Highway Patrol. Boat teams conducted 12-hour shifts, and organizations like the Salvation Army and Red Cross were on standby. Response and recovery costs for the City of Fargo and Cass County totaled approximately $2 million.
- **April 16, 2023.** Spring snowmelt caused County roads to be flooded in Fargo, Harwood, Kindred, and West Fargo leading to $951 thousand in damage to roadways.

The US Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL) tracks ice jams in Cass County. CRREL has recorded 59 ice jams in the county since records began in North Dakota in 1880, all of which were along the Maple River, Sheyenne River, Red River, and Swan Creek. The most recent ice jam was recorded in 2019.

Table 3.5 lists the historical crests for the Red River of the North and their associated dates.

Table 3.5 - Historical Crest for the Red River, 2024		
Rank	Crest (feet)	Date
1	40.84	03/28/2009
2	39.72	04/18/1997
3	39.10	04/07/1897
4	38.81	04/09/2011
5	37.34	04/15/1969
6	37.13	04/05/2006
7	36.99	03/21/2010
8	36.69	04/15/2001
9	35.39	04/09/1989
10	35.04	04/08/2019

Source: NOAA

More recent crest for the Red River of the North are detailed in Table 3.6.

Table 3.6 - Recent Crests for the Red River, 2024	
Crest (feet)	Date
22.16 (preliminary data)	05/27/2024
18.63	12/31/2023
29.75	04/22/2023
26.49	05/14/2022
16.78	04/11/2021
28.19	04/01/2020
23.40	10/16/2019
35.04	04/08/2019
18.64	04/19/2018

Source: NOAA

The scientific scale for flooding magnitude is a measure of how severe a flood is as a strictly hydrological occurrence. However, the most common terminology for flooding extent is recurrence interval measured in years. As illustrated in Table 3.7, a flood event with a recurrence interval of 100 years (100-year flood) has a 1% annual exceedance probability (AEP). “0” is the smallest reported value (discharge is below the 1.5-year recurrence interval discharge; no flooding). “10” is the largest; this is the flood of record. This means that based on historical data related to precipitation and water levels within a given waterflow channel (typically a stream) the runoff volume at a given site has a certain probability of occurring in any given year. A flooding event that exceeds the currently identified flood of record may lead to a recalculation of the annual exceedance probability. The magnitude of flooding at that site can change over time when there are changes to the channel such as may occur with urban development or impoundment.

Table 3.7 – Flooding Extent Scale	
Recurrence interval (years)	Annual exceedance probability (percent)
2	50%
5	20%
10	10%
25	4%
50	2%
100	1%
200	0.5%
500	0.2%

Source: United States Geological Survey (USGS)

PROBABILITY

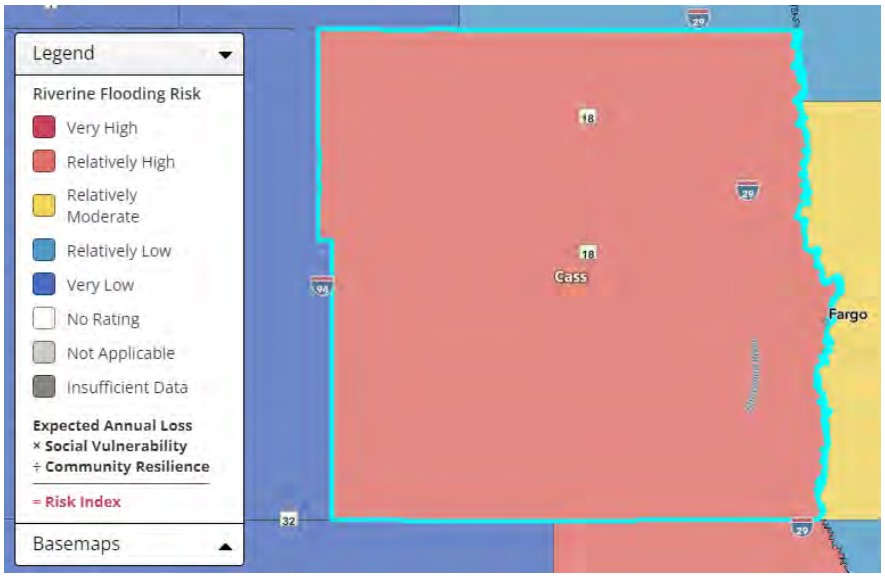
Recent flood events in Cass County are summarized in Table 3.8. The county averages more than one flood event per year. Flood event classification criteria and a detailed listing of events can be found in Appendix C. There is essentially a 100% annual probability of some kind of flooding in Cass County.

Table 3.8 - Flood Events in Cass County, 1996-2023			
Flood Events	Event Days*	Annual Probability	Event Days per Year
Total	67	100.0%	2.5
Flood	28	100.0%	1.0
Flash Flood	33	100.0%	1.2
Heavy Rain	6	22.0%	0.2

**Number of days with a reported event*
Source: National Climatic Data Center Storm Events Database

Figure 3.5 shows the National Risk Index for riverine flooding in Cass County, which is considered “relatively high”.

Figure 3.5- Riverine Flooding Risk in Cass County



Source: FEMA’s NRI, 2024

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Though the summers could be drier, the winter and the spring could see increased precipitation, with more snowfall in winter and a higher risk of heavy rain concurrent with snowmelt leading to a higher risk of larger snowmelt flooding episodes throughout the county. Extreme rainfall events may also produce localized flooding or flash flood events.

LOCATION

Flood Insurance Rate Maps with effective dates ranging from December 4, 1979 to January 16, 3015, were established for the Cities of Amenia, Argusville, Arthur, Briarwood, Casselton, Davenport, Fargo, Frontier, Gardner, Harwood, Horace, Hunter, Mapleton, North River, Oxbow, Prairie Rose, Reile's Acres, and West Fargo, Townships of Amenia, Berlin, Davenport, Durbin, Empire, Gardner, Harwood, Mapleton, Nobel, Normanna, Pleasant, Raymond, Reed, Stanley, Walburg, Warren, and Wiser, and additional unincorporated areas of Cass County. The flood insurance study for these jurisdictions shows the main flooding source is the Red River of the North and its tributary rivers the Sheyenne River, the Maple River, and the Rush River and associated wetlands, streams and coulees draining into the Red River of the North.

Figures 3.7 through 3.28 on the following pages show the preliminary flood insurance rate maps.

The latest floodplain modeling for the County was completed in 2015 with a Risk MAP program undertaken jointly by FEMA and the North Dakota State Water Commission. The resulting RAM maps are based on topography and modeled water volumes to determine estimated floodplain areas. Data from this floodplain modeling identifies flood risk areas that are not regulatory and are intended for planning purposes only. However, it should be noted that any jurisdiction participating in the NFIP has the authority to use "best available information" when administering floodplain regulations. Figures 3.x through 3.x show areas identified by the Risk MAP study as being located in an area with significant risk of flooding.

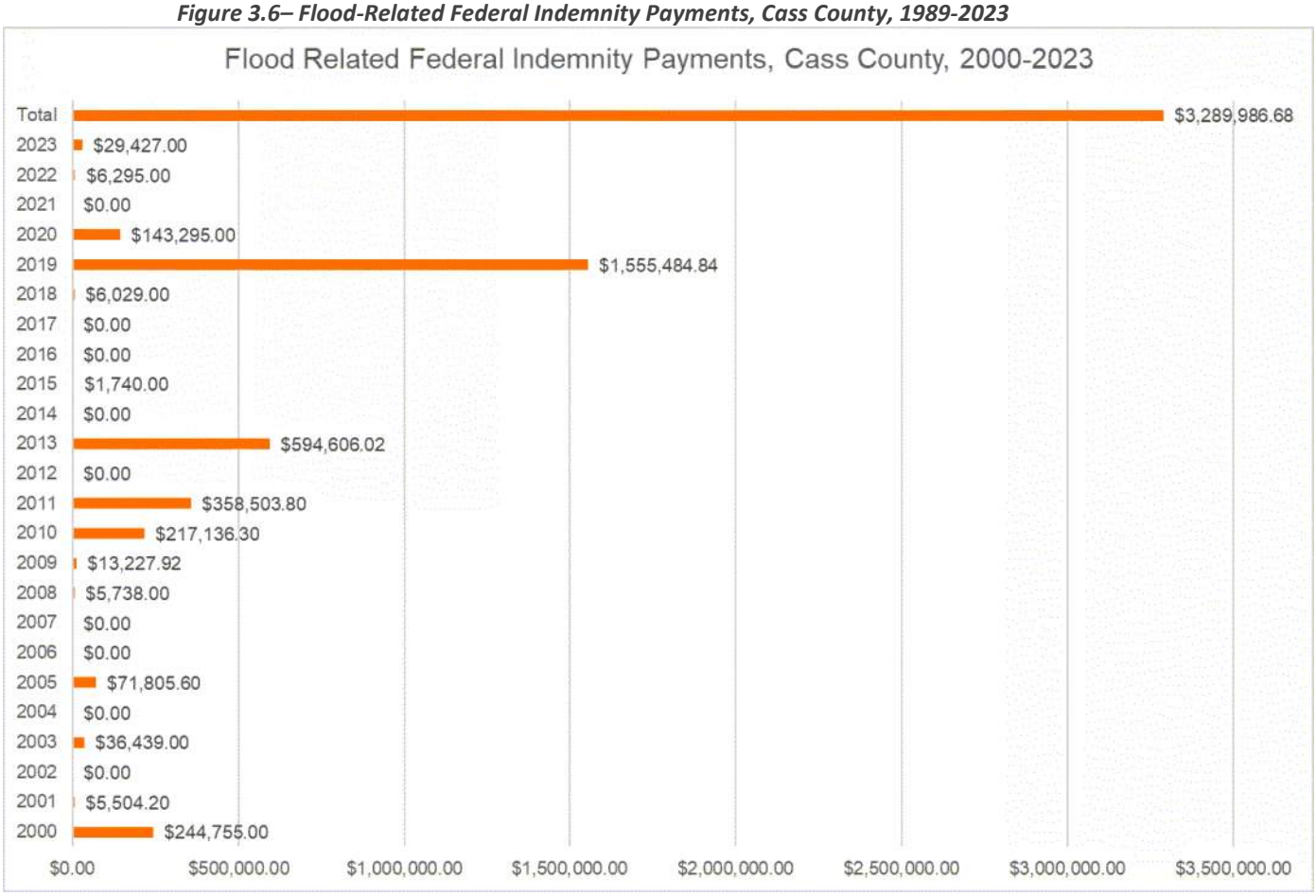
VULNERABILITY

Property

- Repetitive loss properties are tracked for communities that participate in the NFIP. There are no cities with repetitive loss properties according to jurisdictional surveys.
- Using available Preliminary FIRM and 911 address GIS data, properties lying in floodplains were identified. Table 3.9 below summarizes the number of 911 address points – buildings, residences, or other structures with a 911 address – which are in the flood hazard zones portrayed in the new preliminary maps.
- It should be noted that because the rural county is not 100 percent covered by the new Flood Insurance Study, an accurate portrayal of the percentage of rural addresses is very low. However, areas which are likely to experience riverine flooding from the Red River, Sheyenne River, Rush River, and Maple River as well as all incorporated cities in the county were covered by preliminary FIRM mapping.
- County and city parcel data was intersected with address points in the various flood hazard zones to estimate the number of residences and non-residential properties for each jurisdiction. A total of 107,276 addresses in the county, of which an unknown number were residential, were found to be in a flood zone.
- The statewide Multi-Hazard Mitigation Plan includes information about crop insurance payments from the USDA Risk Management Agency. Flood-related crop insurance payments in Cass County from 1989 to 2023 were approximately $3,289,978. Based on a statewide rate of 89 percent of crops being insured, total estimated damages for the County were $3,694,375. Over a 33-year period, this results in an annualized loss of $111,951. Statistics can be seen in Figure 3.28. It should be noted that in some years with major flooding events, such as 2011, Figure 3.6 shows no federal indemnity payments for the year, but the data source shows very large payments for "Excess Moisture/Precipitation/Rain" during the year. (See Figure 3.32 on page 3-47.)

Table 3.9 - Cass County Address Points in Flood Hazard Zones (FEMA Preliminary)					
	Total Address	Regulatory Flooding Address Points	1% Annual Flood Chance Zone Address Points	0.2% Annual Flood Chance Zone Address Points	% of all Addresses Vulnerably to Flooding
Rural Cass County	4,906	96	1,165	1,095	46.1%
Alice	34	0	1	0	2.9%
Amenia	53	0	47	0	88.7%
Argusville	167	0	20	0	12.0%
Arthur	191	0	33	0	17.3%
Ayr	18	0	1	0	5.6%
Briarwood	28	0	11	17	100.0%
Buffalo	158	0	6	0	3.8%
Casselton	1,322	0	49	0	3.7%
Davenport	133	0	0	0	0.0%
Fargo	76,284	116	7,593	51,282	77.2%
Frontier	85	0	3	78	95.3%
Gardner	74	0	22	0	30.0%
Grandin	99	0	27	0	27.3%
Harwood	314	0	100	152	80.3%
Horace	3,499	0	298	687	28.2%
Hunter	238	0	59	0	24.8%
Kindred	529	0	0	0	0.0%
Leonard	178	0	20	0	11.2%
Mapleton	749	0	0	0	0.0%
North River	24	0	5	18	95.8%
Oxbow	255	29	18	157	80.0%
Page	178	0	24	0	13.5%
Prairie Rose	21	0	1	20	100%
Reile's Acres	289	0	153	66	75.8%
Tower City	175	0	9	0	5.1%
West Fargo	17,268	0	45	13	0.3%

Figure 3.6– Flood-Related Federal Indemnity Payments, Cass County, 1989-2023



Source: National Drought Mitigation Center (USDA Risk Management Agency 2018-2024)*

Population

Vulnerable population was estimated using address points lying within floodplains based on preliminary FIRM flood data as listed in Table 3.4. Address points can include homes, businesses, utilities, and other structures with a legal address for 911 purposes. The population living in 1% annual chance floodplain areas was estimated by multiplying the number of residences times 2.25 persons per household as shown in Table 3.10.

- Alice – Alice is a population center and has an estimated 2 residents within a 1% annual chance zone.
- Amenia – Amenia is a population center and has an estimated 106 residents within a 1% annual chance zone.
- Argusville – Argusville is a population center and has an estimated 45 residents within a 1% annual chance zone.
- Arthur – Arthur is a population center and has an estimated 74 residents within a 1% annual chance zone.
- Ayr – Ayr is a population center and has an estimated 2 residents within a 1% annual chance zone.
- Briarwood – Briarwood is a population center and has an estimated 25 residents within a 1% annual chance zone.
- Buffalo – Buffalo is a population center and has an estimated 14 residents within a 1% annual chance zone.
- Casselton – Casselton is a population center and has an estimated 110 residents within a 1% annual chance zone.
- Davenport – Davenport is a population center but has no other significant vulnerabilities identified.
- Fargo- Fargo is the largest population center in Cass County and has an estimated 17,084 residents in a 1% annual chance zone.
- Frontier - Frontier is a population center and has an estimated 7 residents within a 1% annual chance zone.
- Gardner – Gardner is a population center and has an estimated 50 residents within a 1% annual chance zone.
- Grandin – Grandin is a population center and has an estimated 61 residents within a 1% annual chance zone.
- Harwood – Harwood is a population center and has an estimated 225 residents within a 1% annual chance zone.
- Horace – Horace is a population center and has an estimated 671 residents within a 1% annual chance zone.
- Hunter – Hunter is a population center and has an estimated 133 residents within a 1% annual chance zone.

- Kindred – Kindred is a population center but has no other significant vulnerabilities identified.
- Leonard –Leonard is a population center and has an estimated 45 residents within a 1% annual chance zone.
- Mapleton -Mapleton is a population center but has no other significant vulnerabilities identified.
- North River – North River is a population center and has an estimated 11 residents within a 1% annual chance zone.
- Oxbow – Oxbow is a population center and has an estimated 41 residents within a 1% annual chance zone.
- Page – Page is a population center and has an estimated 54 residents within a 1% annual chance zone.
- Prairie Rose – Prairie Rose is a population center and has an estimated 2 residents within a 1% annual chance zone.
- Reile's Acres – Reile's Acres is a population center and has an estimated 344 residents within a 1% annual chance zone.
- Tower City – Tower City is a population center and has an estimated residents within a 1% annual chance zone.
- West Fargo – West Fargo is a population center and has an estimated 101 residents within a 1% annual chance zone.

Table 3.10 - Estimated Population in Cass County Jurisdiction Vulnerable to Flooding

	Residential Addresses with 1% Annual Chance	2020 Population	Estimated Vulnerable Population
Rural County	1,165	6,935	2,621
Alice	1	41	2
Amenia	47	85	106
Argusville	20	480	45
Arthur	33	328	74
Ayr	1	11	2
Briarwood	11	57	25
Buffalo	6	195	14
Casselton	49	2,479	110
Davenport	0	256	0
Fargo	7,593	125,990	17,084
Frontier	3	195	7
Gardner	22	129	50
Grandin	27	186	61
Harwood	100	794	225
Horace	298	3,085	671
Hunter	59	332	133
Kindred	0	889	0
Leonard	20	248	45
Mapleton	0	1,320	0
North River	5	55	11
Oxbow	18	381	41
Page	24	190	54
Prairie Rose	1	56	2
Reile's Acres	153	703	344
Tower City	9	479	20
West Fargo	45	38,626	101
Total	9,710	184,525	21,848

Critical Facilities

- Alice- No significant critical facilities are vulnerable.
- Amenia - No significant critical facilities are vulnerable.
- Argusville- No significant critical facilities are vulnerable.

- Arthur- Arthur Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Ayr - No significant critical facilities are vulnerable.
- Briarwood - No significant critical facilities are vulnerable.
- Buffalo - No significant critical facilities are vulnerable.
- Casselton - No significant critical facilities are vulnerable.
- Davenport – No significant critical facilities are vulnerable.
- Fargo –
    - 1 Private School – 1% Annual Chance Flood Zone
    - 11 Nursing Homes – 0.2% Annual Chance Flood Zone
    - 17 Fargo Public Schools – 0.2% Annual Chance Flood Zone
    - 2 Dialysis Centers – 0.2% Annual Chance Flood Zone
    - 2 Nursing Homes – 1% Annual Chance Flood Zone
    - 3 Fargo Public Schools – 1% Annual Chance Flood Zone
    - 5 Private Schools – 0.2% Annual Chance Flood Zone
    - Cass County Courthouse (administrative building) – 0.2% Annual Chance Flood Zone
    - Cass County Jail – 0.2% Annual Chance Flood Zone
    - Cass County Sheriff's Office – 0.2% Annual Chance Flood Zone
    - Essentia Health Fargo – 0.2% Annual Chance Flood Zone
    - Fargo Cass Public Health – 1% Annual Chance Flood Zone
    - Fargo City Hall – 1% Annual Chance Flood Zone
    - Fargo Fire Department Station 5 – 0.2% Annual Chance Flood Zone
    - Fargo Police Department – 0.2% Annual Chance Flood Zone
    - Fargo Police Department South Fargo Substation – 0.2% Annual Chance Flood Zone
    - Fargo Wastewater Treatment Plant – 0.2% Annual Chance Flood Zone
    - North Dakota Air National Guard Fire Department Hector Field – 1% Annual Chance Flood Zone
    - North Dakota State College of Science – 0.2% Annual Chance Flood Zone
    - North Dakota State University – 0.2% Annual Chance Flood Zone
    - Pam Rehabilitation Hospital of Fargo – 1% Annual Chance Flood Zone
    - Sanford Broadway – 0.2% Annual Chance Flood Zone
    - Sanford South University – 0.2% Annual Chance Flood Zone
    - Sanford Transplant Center – 0.2% Annual Chance Flood Zone
    - Vibra Hospital of Fargo – 0.2% Annual Chance Flood Zone

- Frontier- No significant critical facilities are vulnerable.
- Gardner – Gardner Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Grandin - Grandin Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Harwood –
    - City of Fargo (Harwood) Wastewater Treatment Plant – 0.2% Annual Chance Flood Zone
    - Harwood Elementary School – 1% Annual Chance Flood Zone
    - Harwood Fire and Rescue Station – 1% Annual Chance Flood Zone
- Horace - No significant critical facilities are vulnerable.
- Hunter –
    - Hunter Dam – 1% Annual Chance Flood Zone
    - Hunter Volunteer Fire Station – 0.2% Annual Chance Flood Zone
    - Hunter Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Kindred - No significant critical facilities are vulnerable.
- Leonard – Leonard Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Mapleton - No significant critical facilities are vulnerable.
- North River - No significant critical facilities are vulnerable.
- Oxbow - No significant critical facilities are vulnerable.
- Page - No significant critical facilities are vulnerable.
- Prairie Rose - No significant critical facilities are vulnerable.
- Reile's Acres - No significant critical facilities are vulnerable.

- Tower City - No significant critical facilities are vulnerable.
- West Fargo-
    - Freedom Elementary School – 0.2% Annual Chance Flood Zone
    - West Fargo Wastewater Treatment Plant – 1% Annual Chance Flood Zone
- Cass County- No significant critical facilities are vulnerable.

Economy

- Flood-related crop indemnity payments from 1989-2021 totaled $106,847, or $3,237 annually. Assuming an 89 percent coverage rate, the amount of loss is calculated to be 3,600 annually. Other impacts are unknown.
- According to FM Diversion Project's website, the long-term flood risk reduction project is funded through a combination of sources: $750 million in federal funds, including $425 million from the Infrastructure Investment and Jobs Act; $850 million in North Dakota state grants from the Legacy Funds bonding package and State Water Commission funds; $86 million from the City of Moorhead and Clay County; and $1.514 billion from Fargo and Cass County sales tazes. Additional financing includes the following loans that will be paid with sales taxes: $69 million EPA loan, $55 million in State Revolving Fund loans, and $280 million in USDOT Private Activity Bonds.

Future Development

Cities of Argusville, Arthur, Briarwood, Casselton, Fargo, Frontier, Harwood, Horace, Hunter, Mapleton, North River, Oxbow, Prairie Rose, Reile's Acres, and West Fargo are participants in the NFIP and have floodplain regulations that limit future growth into high-risk areas. Of these jurisdictions, Argusville, Arthur, Casselton, Fargo, Frontier? Horace, Hunter? Mapleton, Prairie Rose, and West Fargo have future land use maps. The regulation on limited growth in the floodplain will reduce the risk of flooding, as will future land use planning. In the remainder of the County areas and potential flooding impacts on future development are undefined.

EXISTING CAPABILITIES

The Red River and Sheyenne River Diversions project provide significant flood protection capabilities for the county and cities around these rivers, increasing resilience and potentially reducing flood insurance rates through participation in the Community Rating System (CRS).

Once completed, the Red River Diversion will feature a 30-mile stormwater diversion channel and a 22-mile southern embankment designed to protect the Fargo-Moorhead metro area, which includes over 235,000 residents, from disastrous flooding events. The project will mitigate the severe flooding risks inherent in the Red River Valley, characterized by its northward flow, low gradient, ice jams, and frequent extreme precipitation events. To mitigate the risks associated with dam failure, an emergency action plan has been drafted for the Red River Diversion.

The Sheyenne River Diversion, completed in 1992, provides flood protection for West Fargo and Horace. This system includes a 6.8-mile diversion channel, 12.7 miles of levees, and various bridges and pumping stations, designed to handle a discharge of 4,600 cubic feet per second. The Sheyenne River Diversion has effectively managed significant flood events, including the record floods of 1997 and 2009, without any failures. Funded through federal, state, and local contributions, the $27.8 million construction significantly increased property protection and value in the area. Over time, the diversion has influenced land use, with a decrease in agricultural land and an increase in developed land, leading to a substantial rise in property values from $280 million (4,150 properties) to $1,395 billion (7,095 properties) by 2008.

These diversion projects, along with other smaller flood protection structures in the county, effectively reduce flood risk by controlling water flow, which can lead to reevaluation of flood zone designations by FEMA and potentially lower flood insurance premiums for residents if the area is moved to a lover-risk flood zone. The Red River and Sheyenne River Diversion projects can earn significant CRS credit points for participating communities due to their comprehensive flood mitigation efforts. Activities such as maintaining levees, constructing diversion channels, and implementing floodplain management practices contribute to higher CRS rating. Communities with higher CRS rating receive larger

discounts on flood insurance premiums, with Class 9 community getting a 5% discount and a Class 1 community getting a 45% discount.

Cass County and the cities of Argusville, Arthur, Briarwood, Casselton, Fargo, Frontier, Harwood, Horace, Hunter, Mapleton, North River, Oxbow, Prairie Rose, Reile's Acres, and West Fargo have floodplain administrators and floodplain ordinances that are actively enforced. NFIP participation is summarized in Table 3.6. Each jurisdiction has Flood Insurance Rate Maps.

- Property owners along the Sheyenne River have proactively formed neighborhood watch groups to monitor the river berms, with the City of West Fargo offering trainings to support these efforts.
- Since 2016, the City of Amenia has been constructing a levee around the city to protect it from the Rush River.

Cass County and the cities of Arthur, Briarwood, Casselton, Davenport, Fargo, Horace, Kindred, Mapleton, North River, Oxbow, Prairie Rose, and West Fargo have floodplain administrators and floodplain ordinances that are actively enforced. NFIP participation is summarized in table 3.11. Each jurisdiction has Flood Insurance Rate Maps that were created from 1971-2015.

Table 3.11 - NFIP Participation in Cass County

Jurisdiction	Policies in Force	Insured Value of Participating Properties
Cass County	1	$350,000
Alice	0	$0
Amenia	1	$210,000
Argusville	2	$465,000
Arthur	1	$350,000
Ayr	0	$0
Briarwood	9	$3,150,000
Buffalo	0	$0
Casselton	2	$500,000
Davenport	1	$350,000
Fargo	2,191	$730,685,000
Frontier	5	$1,526,000
Gardner	2	$605,000
Grandin	0	$0
Harwood	69	$15,867,000
Horace	45	$12,502,000
Hunter	1	$250,000
Kindred	0	$0
Leonard	0	$0
Mapleton	6	$1,598,000
North River	7	$2,240,000
Oxbow	0	$0
Page	0	$0
Prairie Rose	5	$1,750,000
Reile's Acres	21	$5,819,000
Tower City	0	$0
West Fargo	136	$41,473,000

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** On average, Cass County experiences more than one flood event every year. Flood events in the county include localized drainage system flooding and large-scale riverine flooding.

- *Potential Action Item*: Develop and implement an educational strategy to explain the benefits of flood insurance and participation in the NFIP.
- *Potential Action Item*: Identify, acquire, and remove high risk properties in the floodplain.
- *Potential Action Item*: Consider joining the NFIP and its Community Rating System (CRS) program.
- *Potential Action Item*: Protect and enhance natural mitigation features such as riverbanks, wetlands, etc.
- *Potential Action Item*: Use vegetative management, such as vegetative buffers, around streams and water sources.

***Key Issue*:** Roads in the county are sometimes washed out or inundated during flooding events.

- *Potential Action Item*: Identify areas that could use enlarged culverts or road raises.
- *Potential Action Item:* Elevate commonly impacted roads or bridges.
- *Potential Action Item:* Replace damaged bridge(s) with box culverts.

***Key Issue*:** New FIRMs will soon be available for adoption and implementation by local jurisdictions.

Potential Action Item: Host a floodplain administration workshop with applicable jurisdictions to make each jurisdiction aware of essential processes to ensure appropriate development.

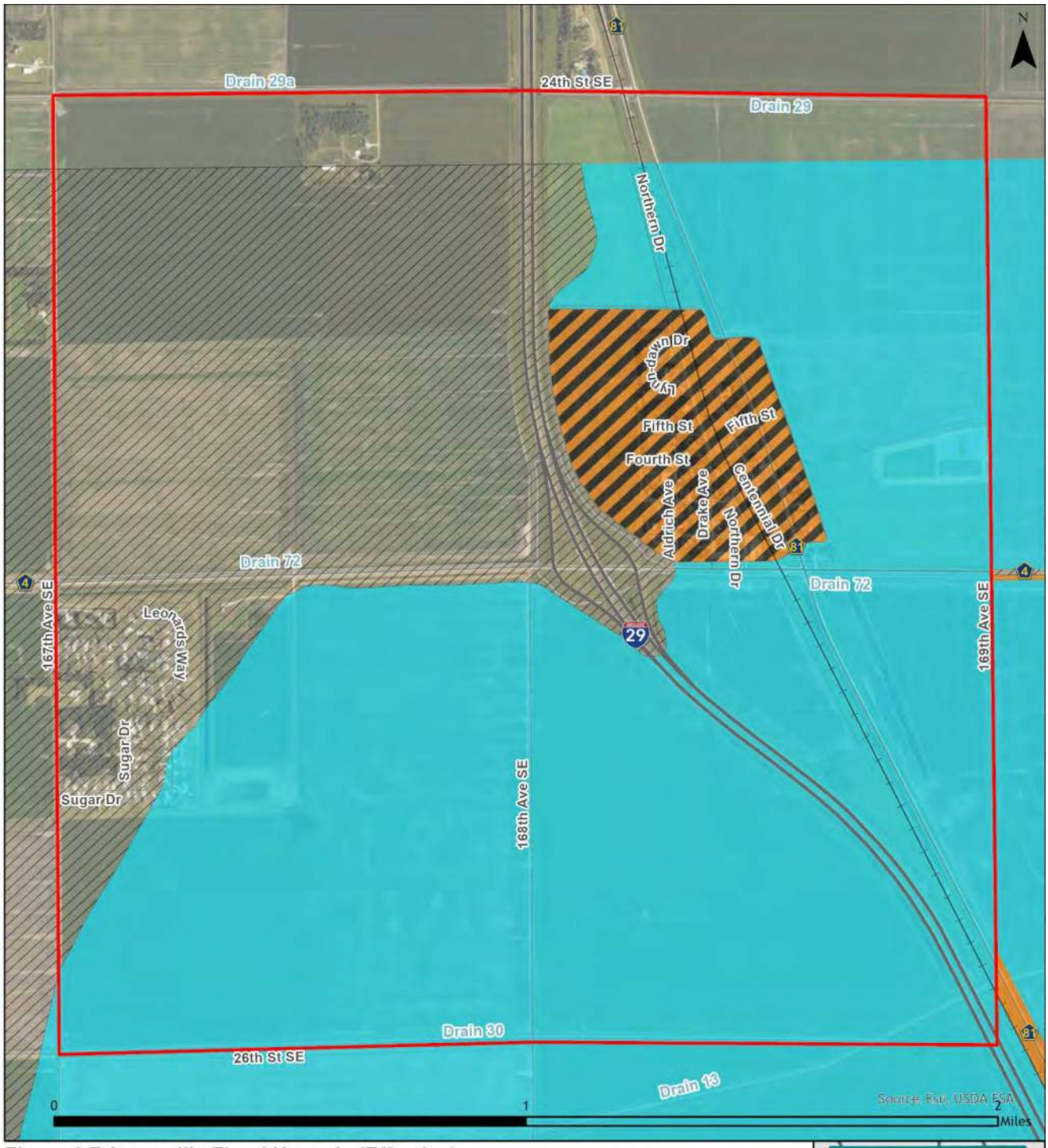


Figure 3.7 Argusville Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



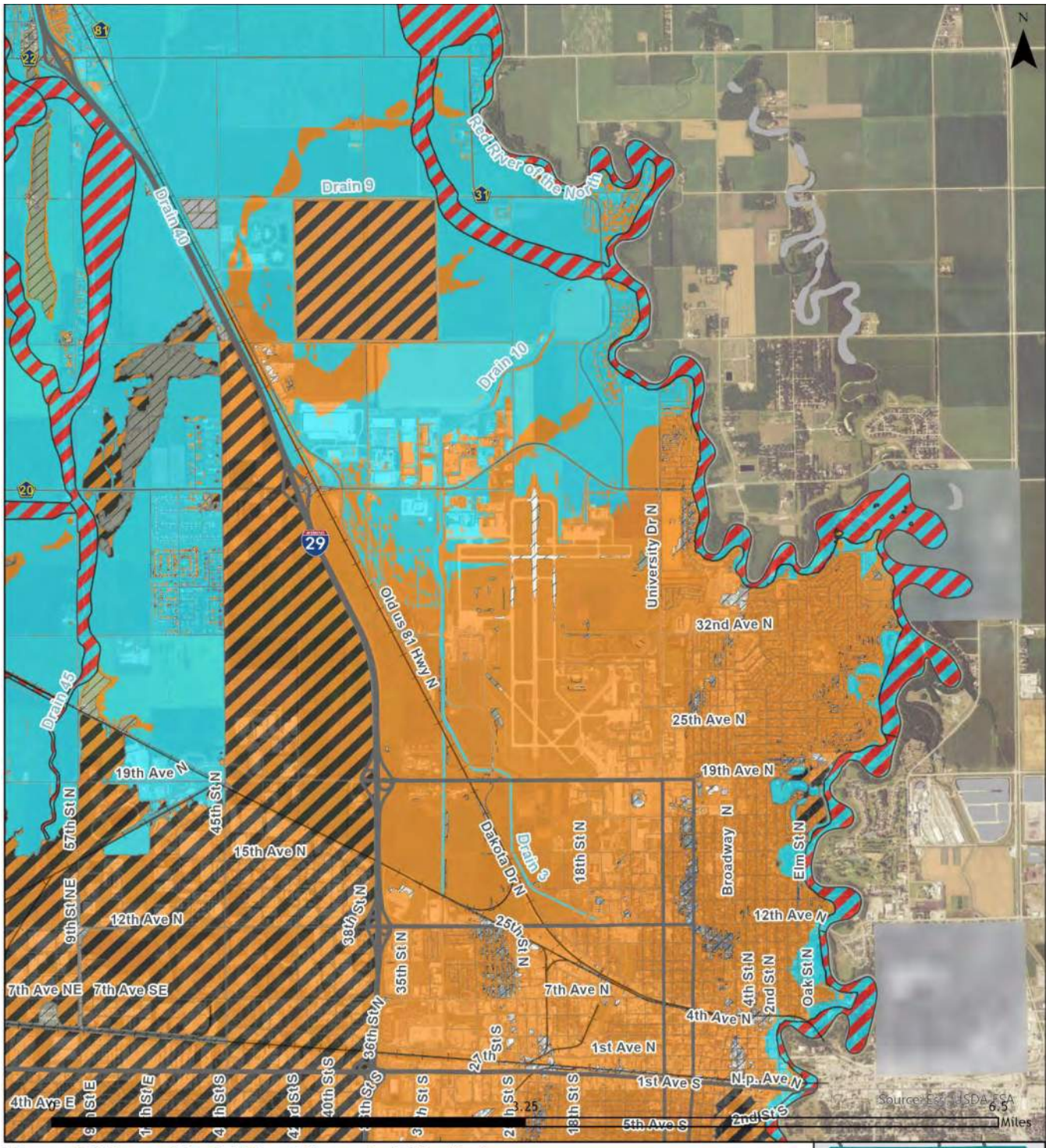


Figure 3.8 Fargo (North) Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



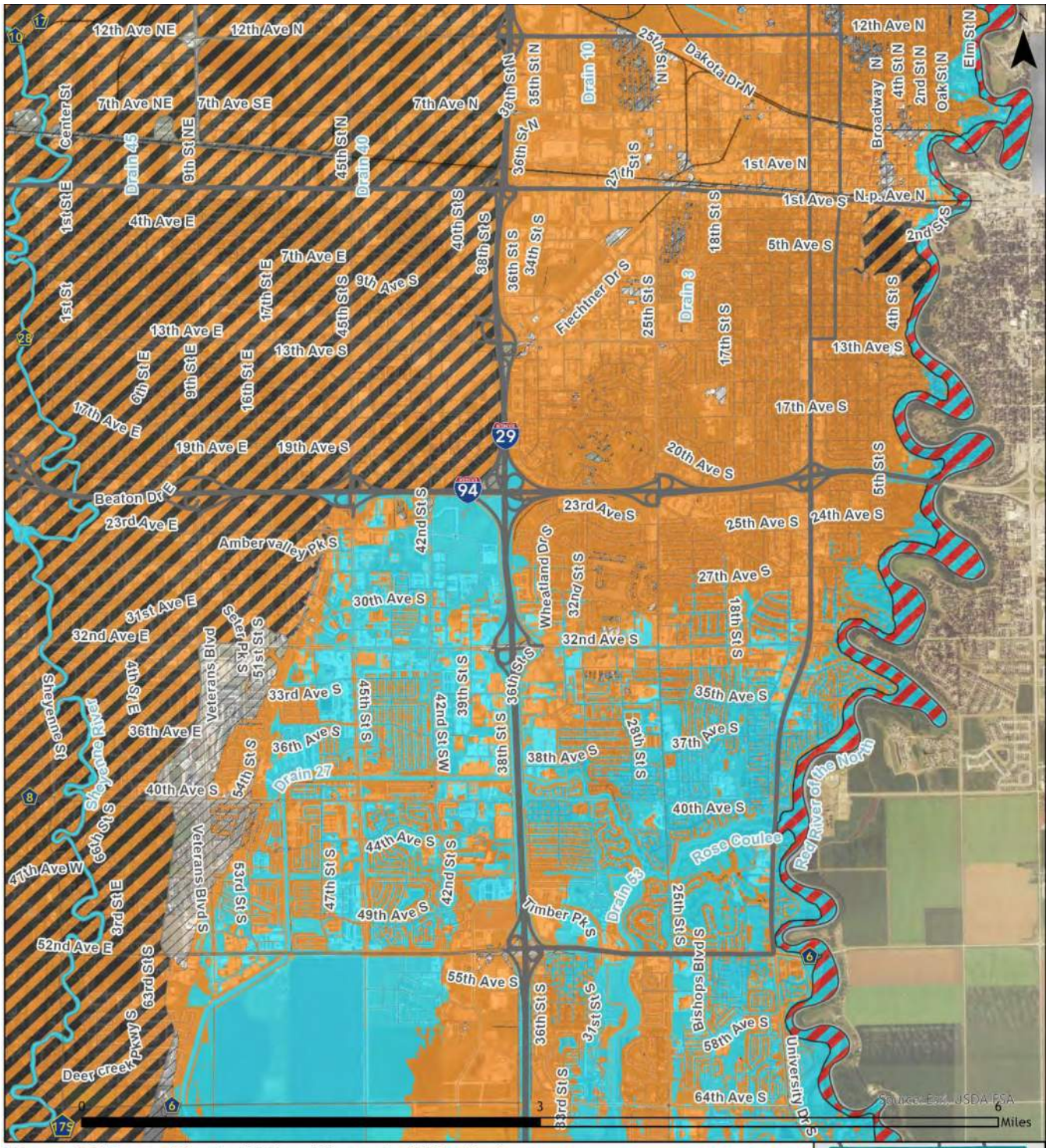


Figure 3.9 Fargo (Central) Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



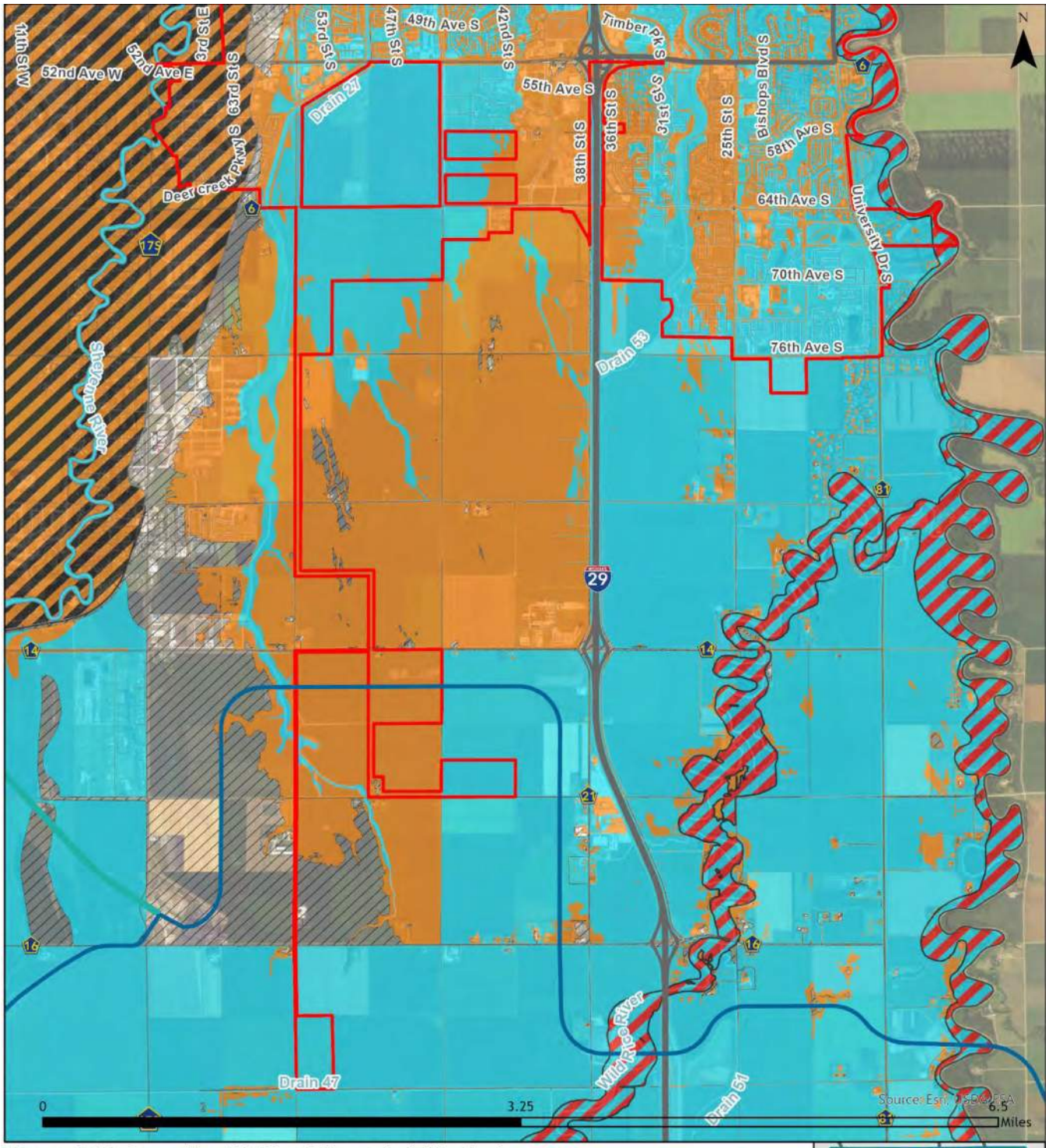


Figure 3.10 Fargo (South) Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment





Figure 3.11 Frontier Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



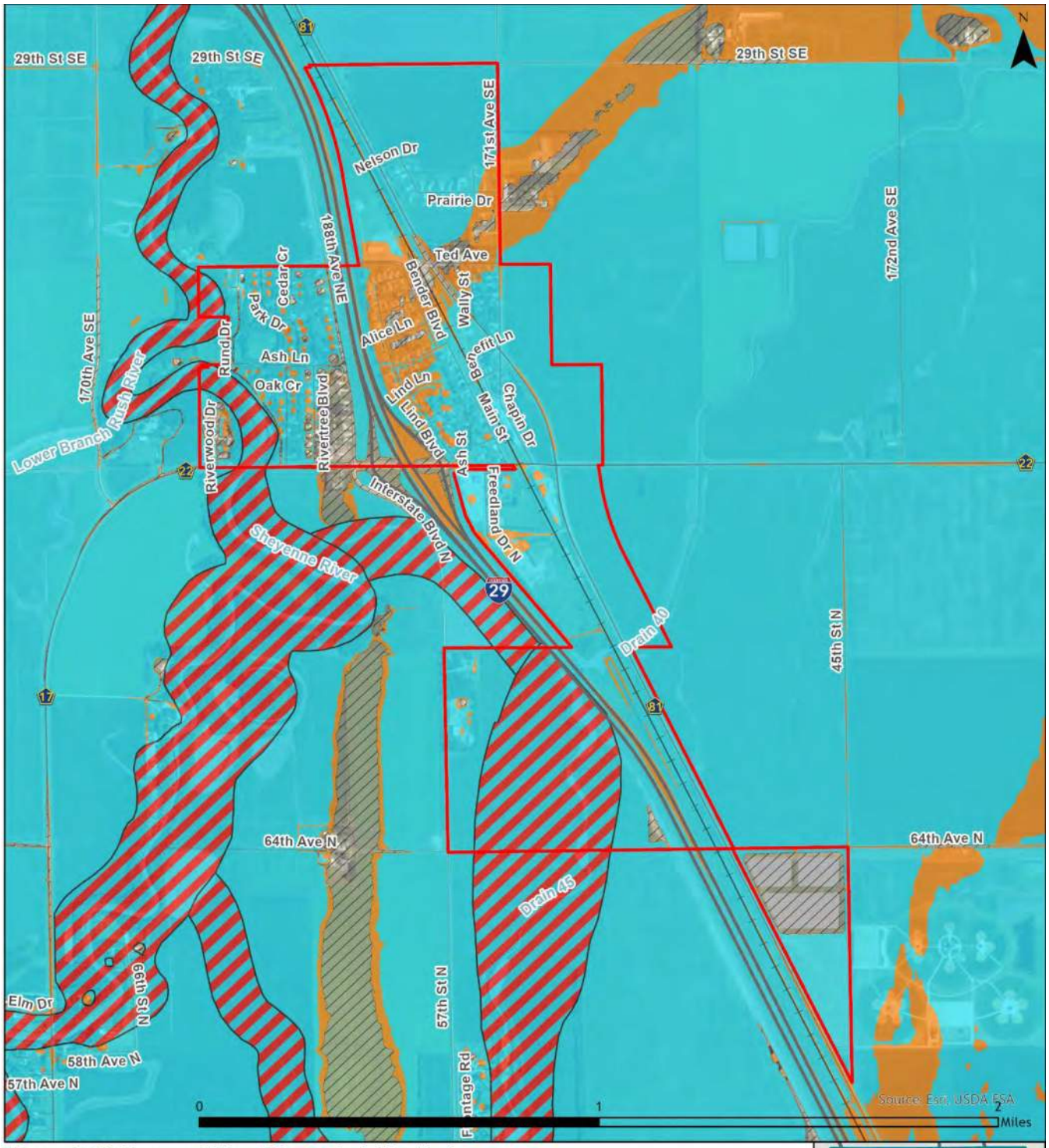


Figure 3.12 Harwood Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment

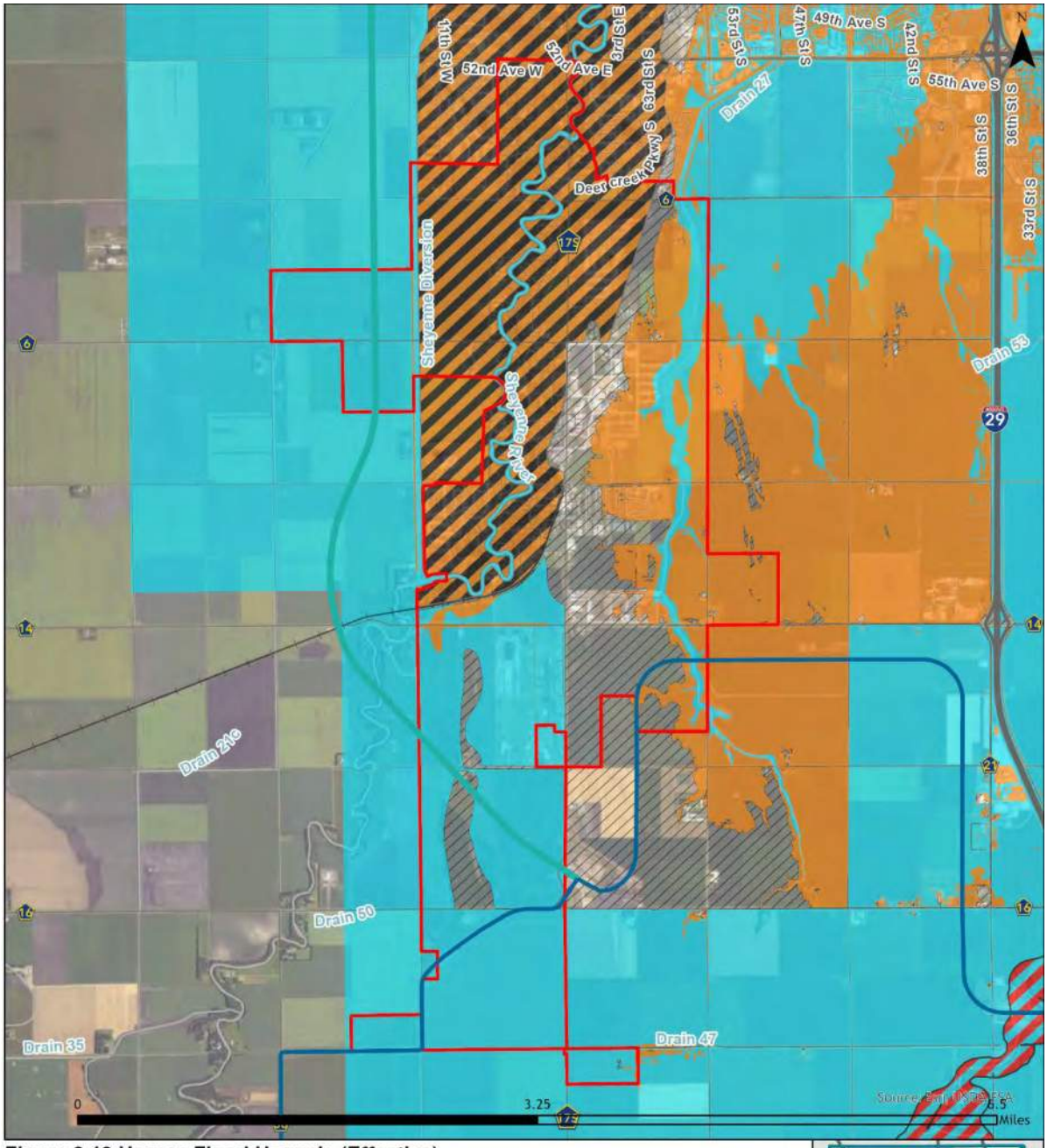


Figure 3.13 Horace Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment

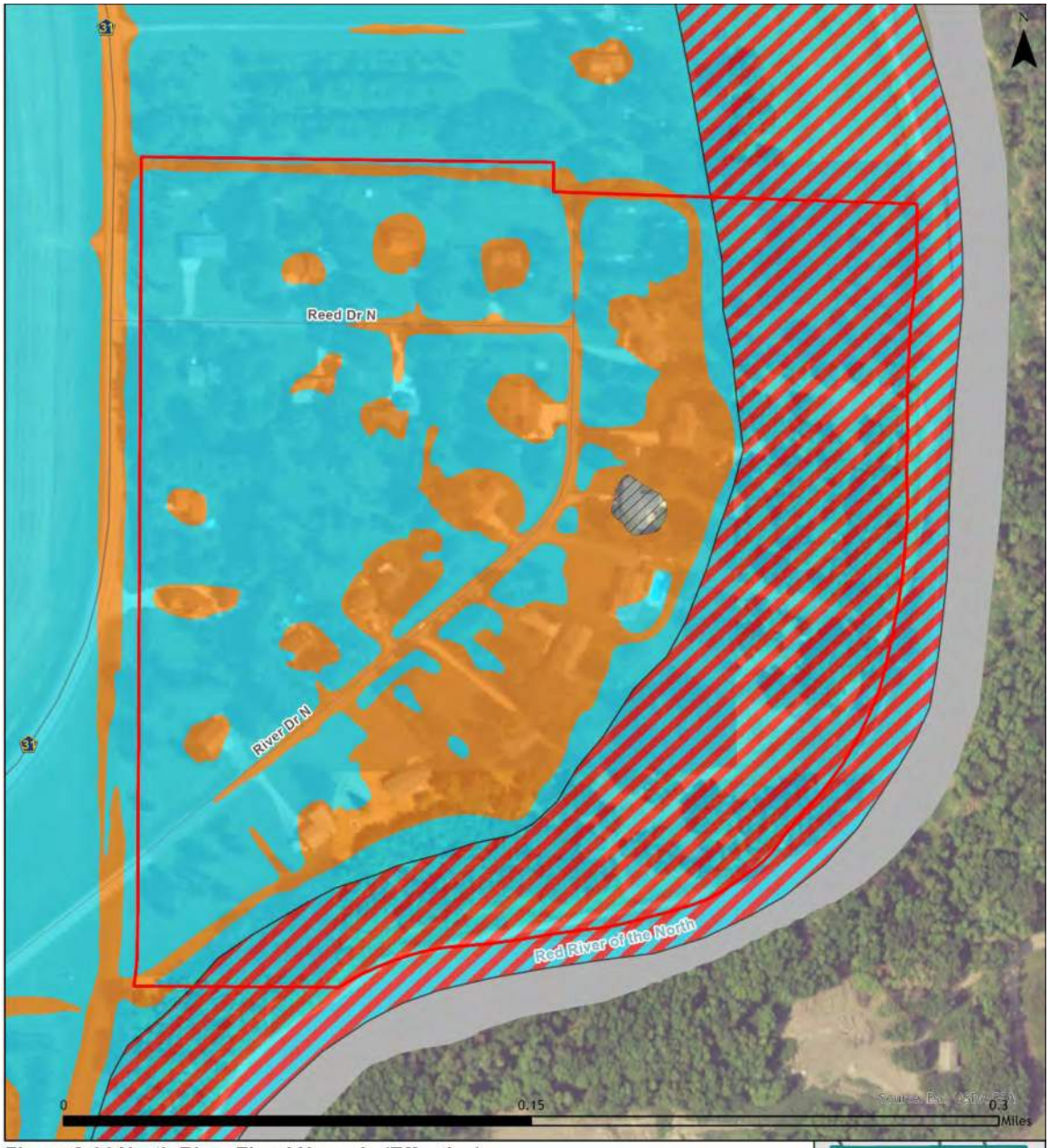


Figure 3.14 North River Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



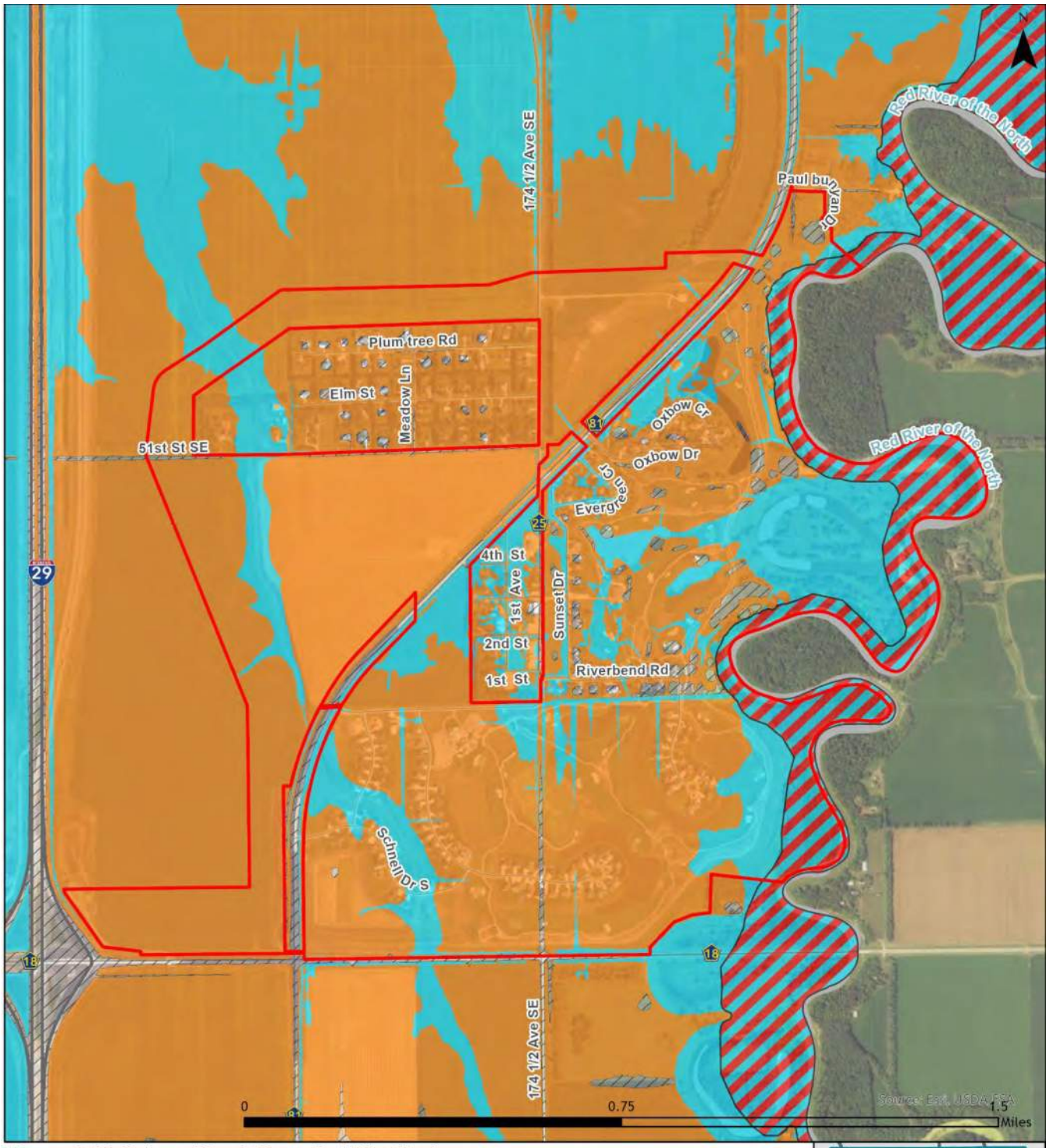


Figure 3.15 Oxbow Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



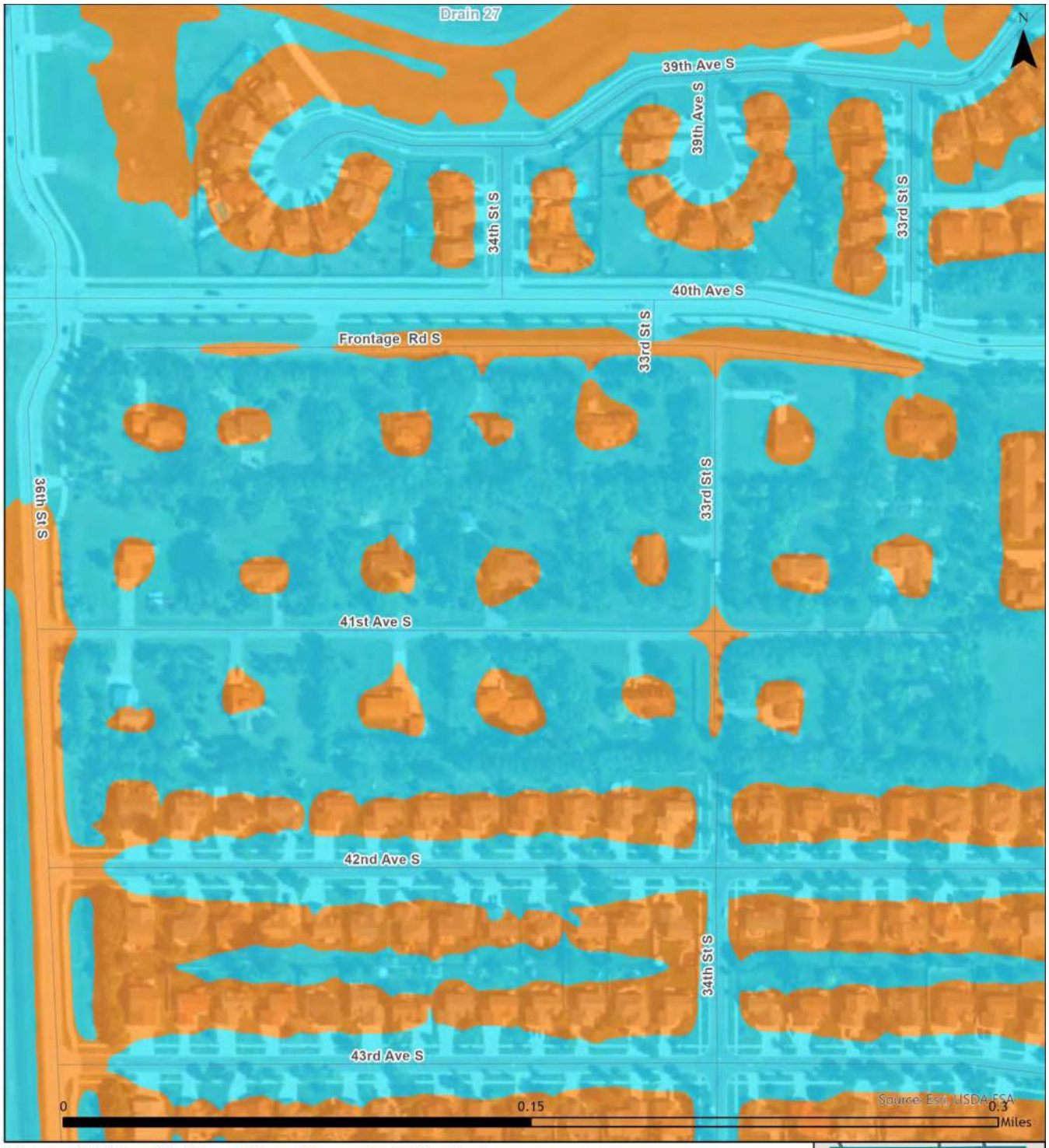


Figure 3.16 Prairie Rose Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



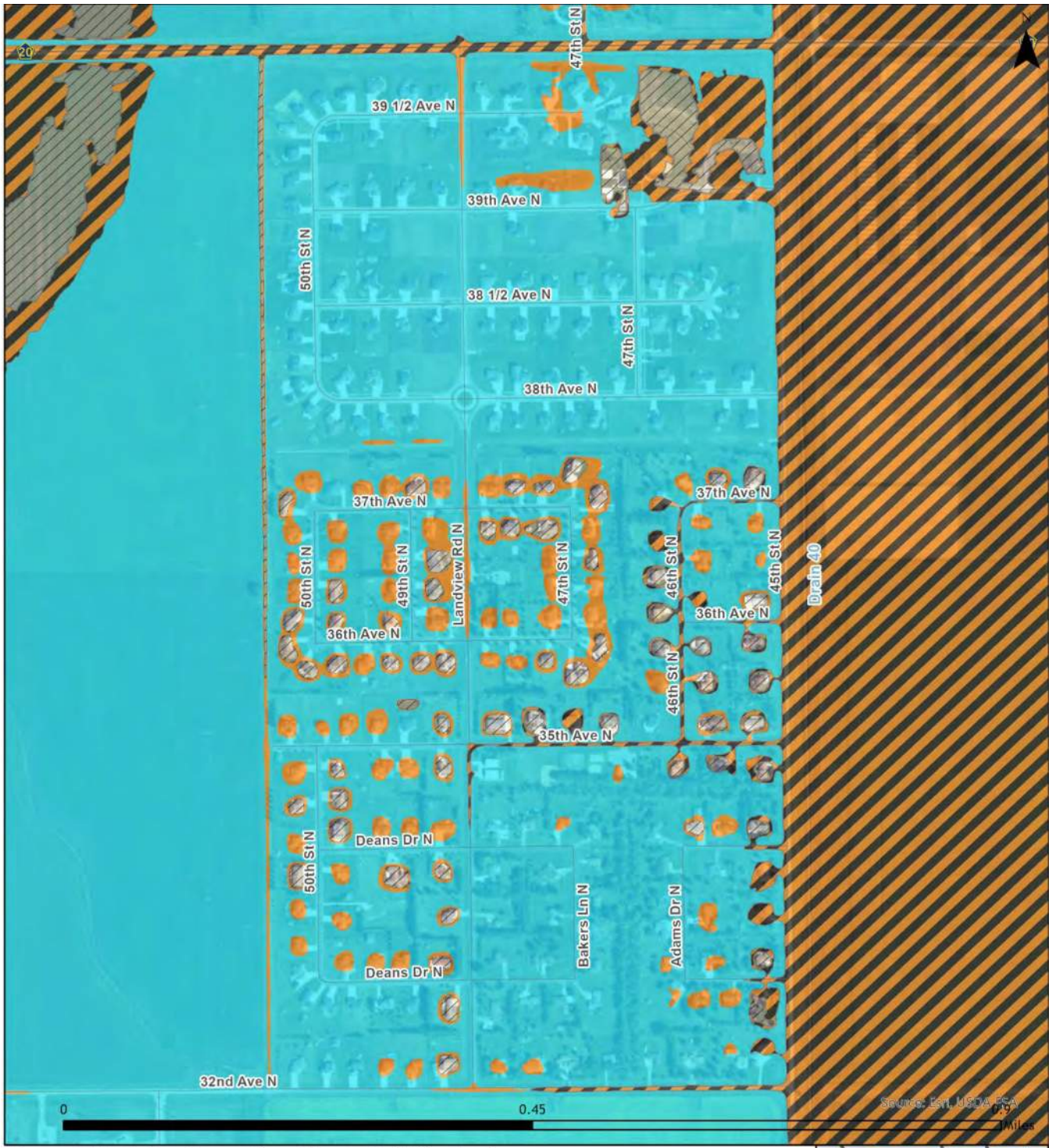


Figure 3.17 Reiles Acres Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment





Figure 3.18 West Fargo (North) Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



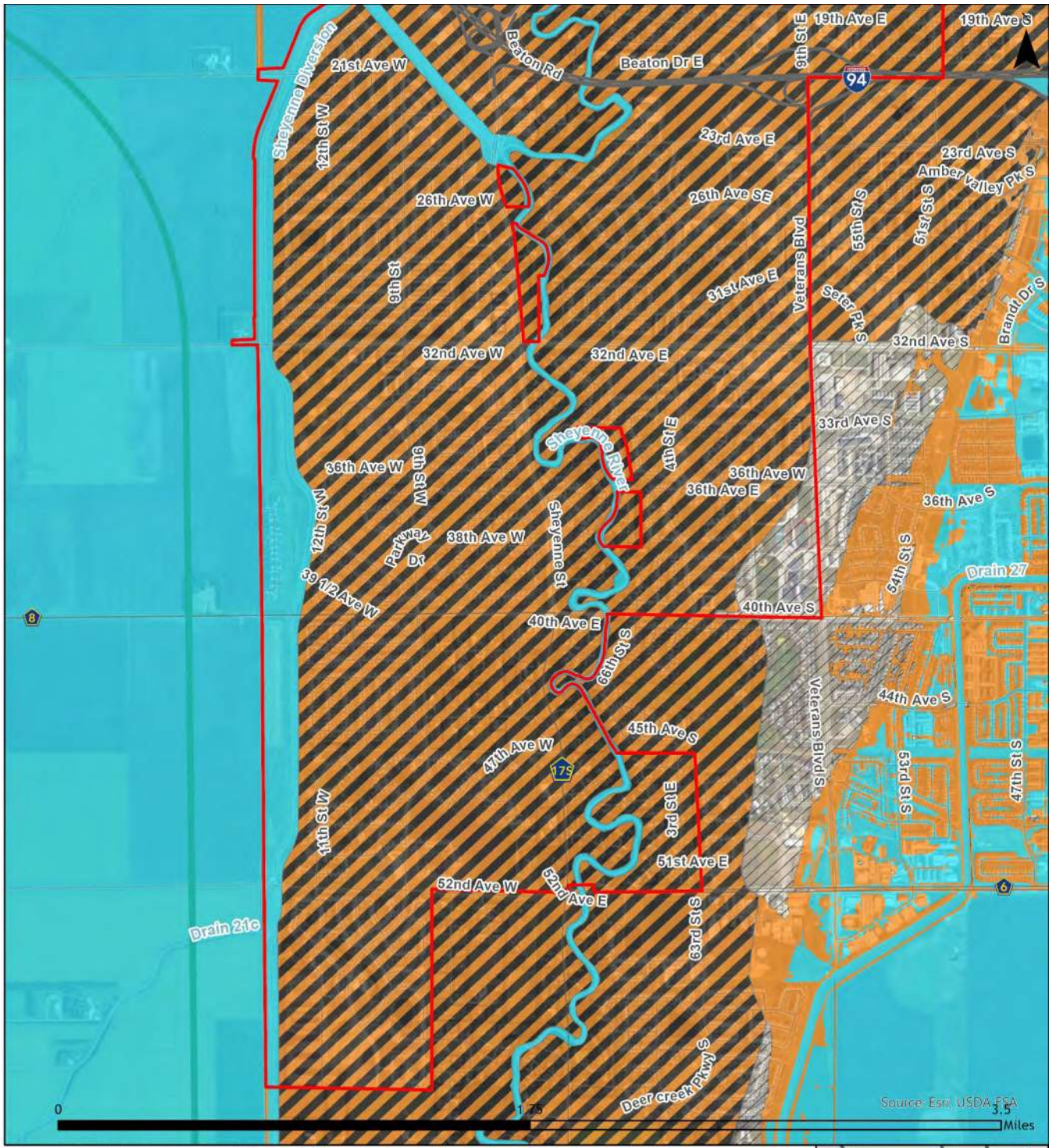


Figure 3.19 West Fargo (South) Flood Hazards (Effective)

Effective FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment



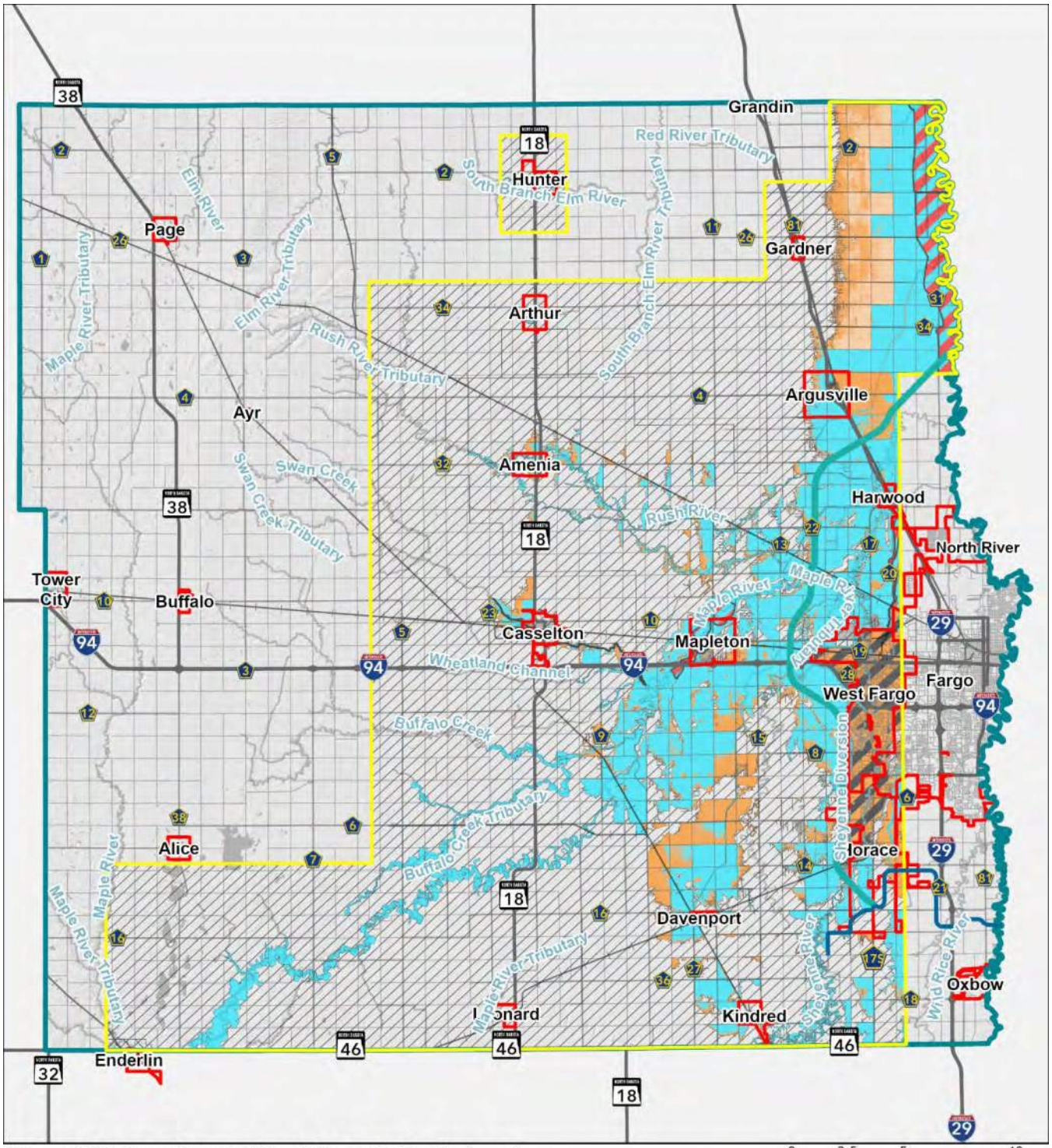


Figure 3.20 Cass County Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Avg. Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Area Not Included
- Limit of Preliminary Flood Hazard Mapping
- Rivers, Streams, and Drains

Diversion Alignment

- Channel
- Southern Embankment

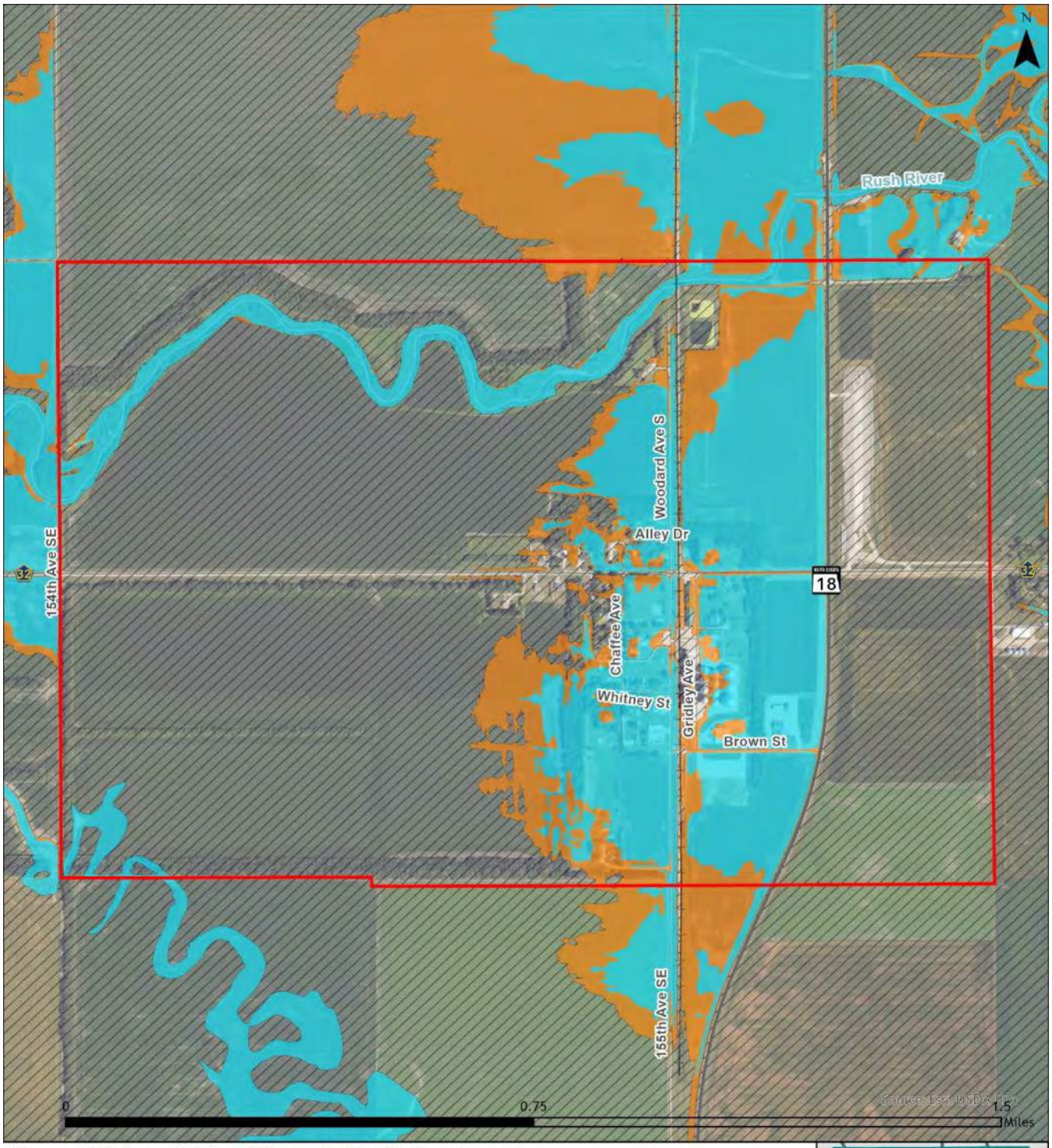


Figure 3.21 Amenia Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



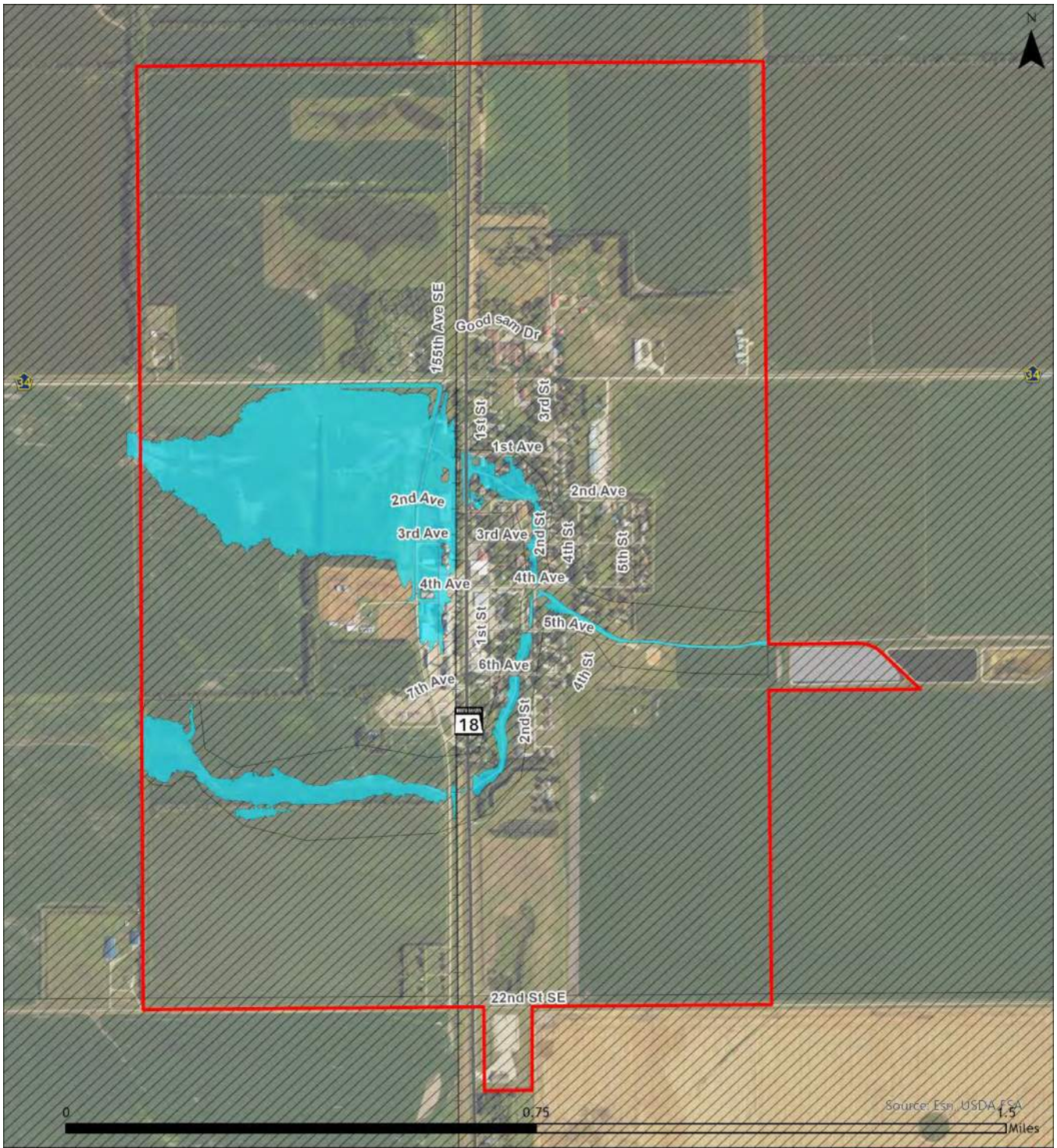


Figure 3.22 Arthur Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



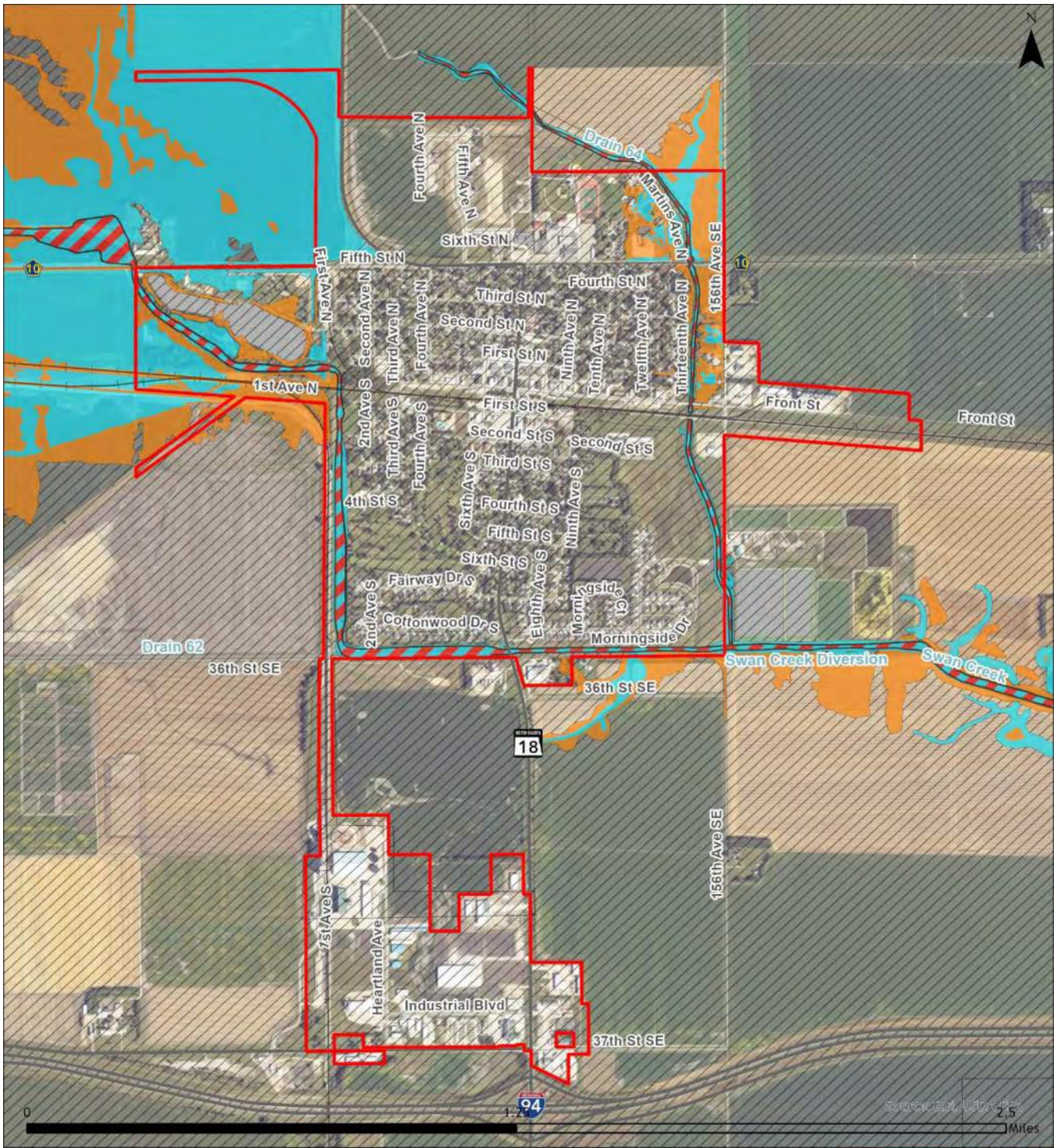


Figure 3.23 Casselton Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



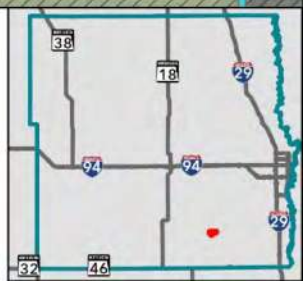


Figure 3.24 Davenport Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



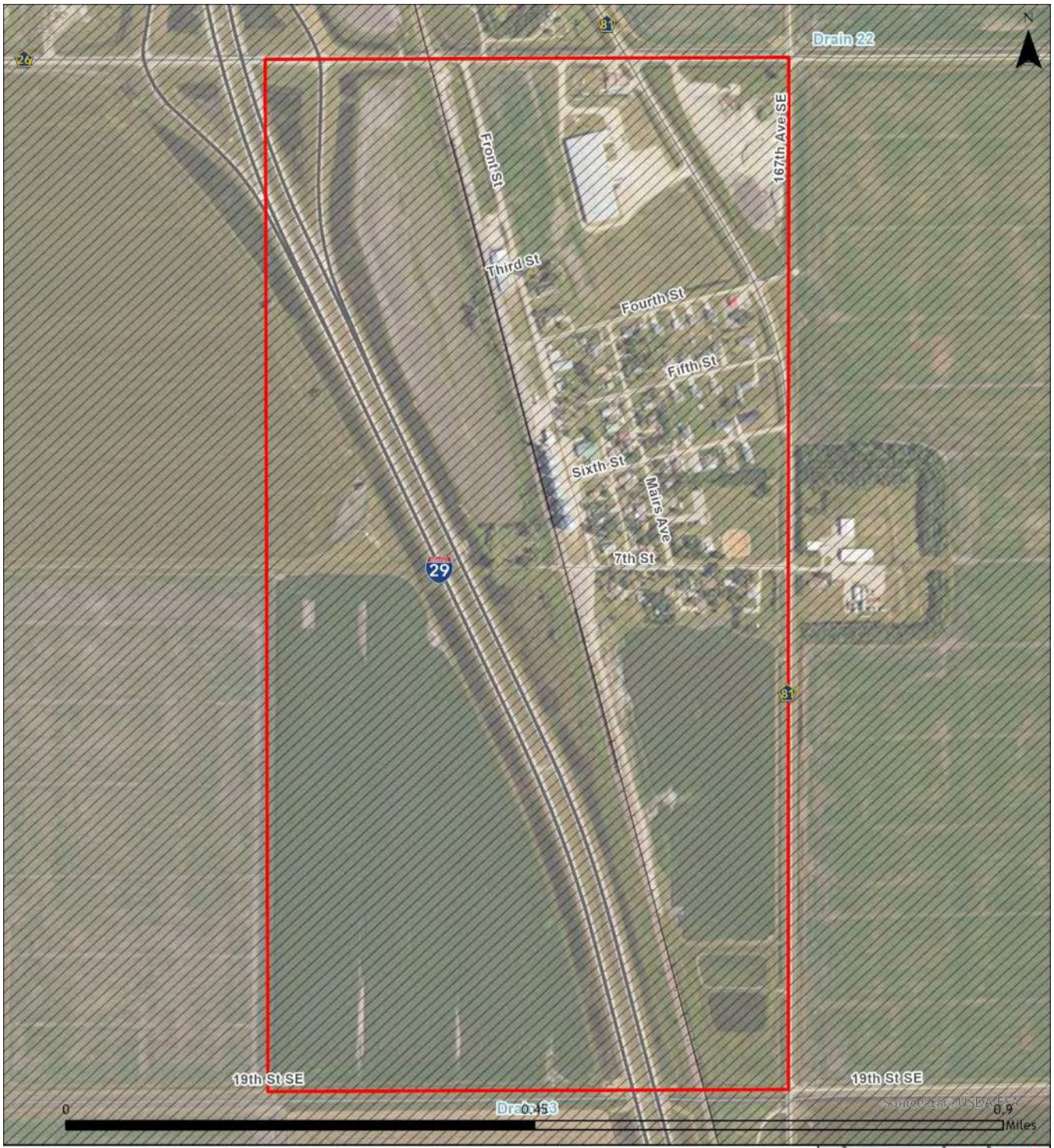


Figure 3.25 Gardner Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



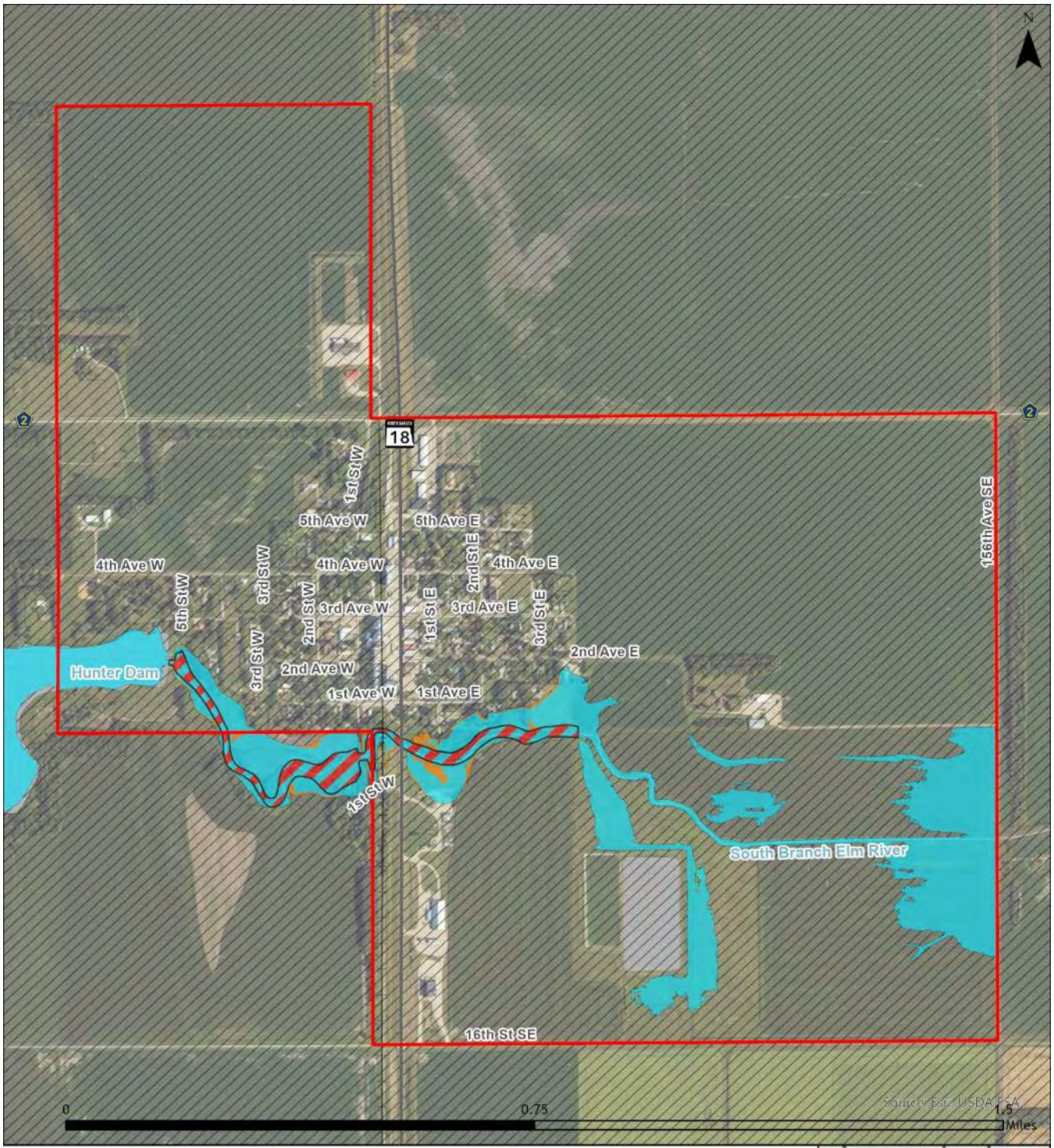


Figure 3.26 Hunter Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



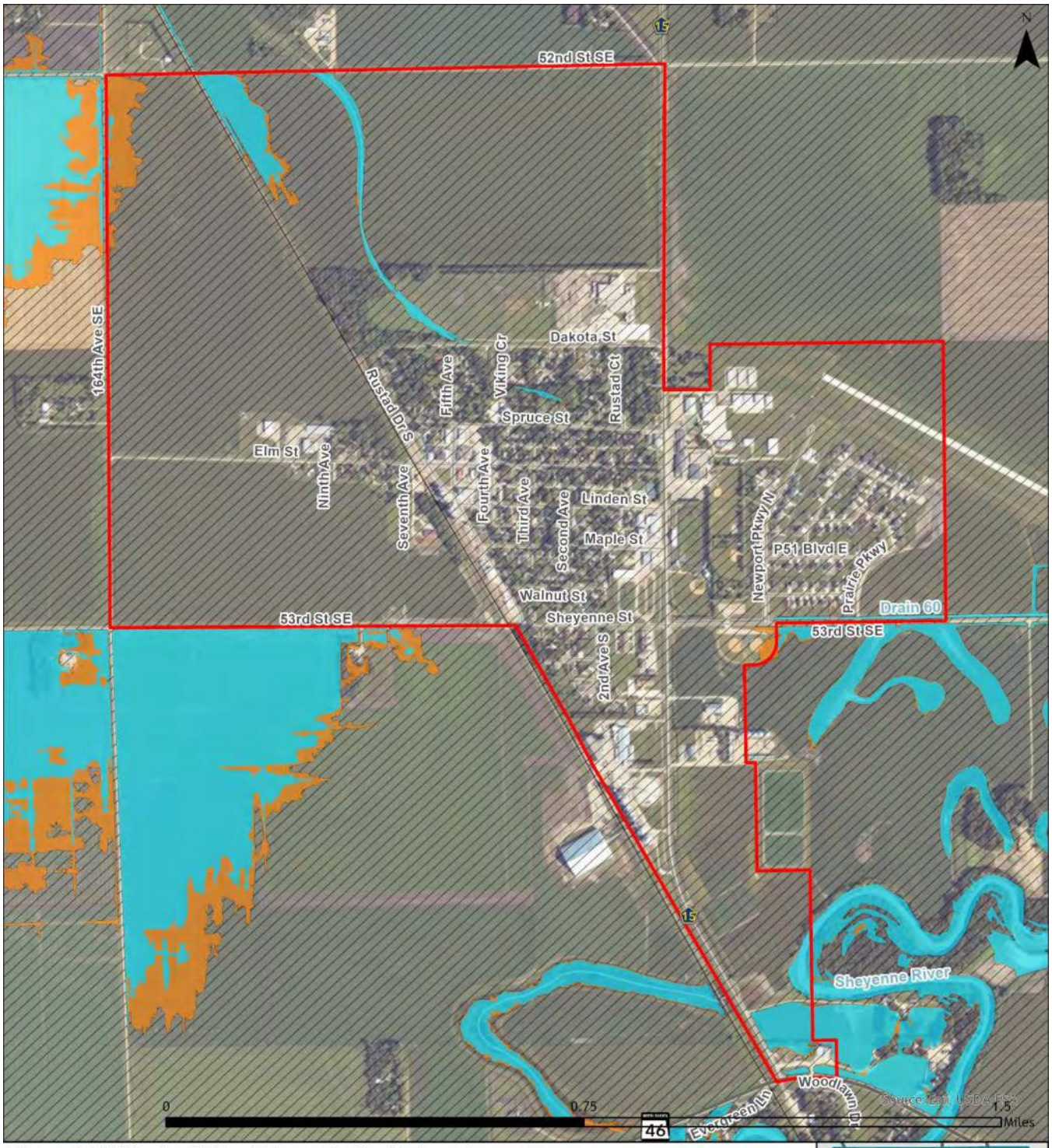


Figure 3.27 Kindred Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains





Figure 3.28 Leonard Flood Hazards (Preliminary)

Preliminary FEMA National Flood Hazard Layer (NFHL)

Flood Hazard Zone

- Regulatory Floodway
- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard with Average Depth Less than One Foot
- Area with Reduced Risk Due to Levee
- Minimal Flood Hazard
- Rivers, Streams, and Drains



Geologic Hazards

All Municipalities
Overall Risk: Low
Probability: Low
Impact: Low

Rural County
Overall Risk: Low
Probability: Moderate (due to some areas of high landslide incidence)
Impact: Low

Impacts
Not Applicable (no significant potential impacts from earthquakes, landslides, or sinkholes)

HAZARD PROFILE

Geologic hazards include landslides, earthquakes and sinkholes related to underground mining.

The US Geological Survey (USGS) defines a landslide as a movement of rock, soil, artificial fill, or a combination thereof on a slope in a downward or outward direction. The primary causes of landslides are sloping saturation by water from

Intense rainfall, snowmelt, or changes in groundwater levels on primarily steep slopes, earthen dams, and the banks of lakes, reservoirs, canals, and rivers. Fargo clay is the most prevalent soil type in Cass County. This type of soil does increase the risk of landslides. The steepness of slopes and occurrence of the Fargo Clay soil type may cause landslides to be more likely in some parts of Cass County.

An earthquake is defined by USGS as a sudden movement of the earth, caused by the abrupt release of strain that has accumulated over a long time. North Dakota is not an area known for earthquake activity; however, many small earthquakes may occur throughout the state. Earthquake severity can be measured by looking at magnitude and intensity. Magnitude is based on the area of the fault plane and amount of slip, and it can be measured using the Richter scale. An earthquake below Richter magnitude 5.0 rarely causes damage 5.5-6.0 may cause minor damage but anything higher than a 6.0 can cause major damage. Intensity is based on how strong the shock is felt and the degree of damage at a given location. It can be measured using the modified Mercalli scale. Damage usually occurs with earthquakes of intensity level V or higher.

The USGS defines a sinkhole as a depression in the ground that has no natural external surface drainage. The primary cause of sinkholes is typically the dissolution of soluble rock by groundwater. This creates underground spaces. If there is not enough support for the land above the spaces, sudden collapse of the land surface can occur. Sink holes are uncommon for the state of North Dakota as well as in Cass County.

HISTORY AND EXTENT

There is no record of earthquakes in Cass County. Although the risk of an earthquake capable of causing significant damage is slight, there have been earthquakes in recent North Dakota history. The closest identified earthquake to Cass County occurred in Dunn County on August 31, 2009, with a reported magnitude of 1.9.

The ND Geologic Survey has documented locations of landslide deposits in Cass County. The number of landslides and their acreage is shown in figure 3.29 and includes landslides located along the Red, Sheyenne, Maple, and Wild Rice River. There are no abandoned mines in Cass County which have the potential to create sinkholes.

The primary geologic hazard risk in Cass County comes from landslides, particularly near the Red River and its tributaries. The soils in this region are naturally weak, and as the river channel constantly shift, these soils, characterized by poor engineering properties, that may lead to foundation shifts and pavement failures. Despite the vulnerability of development adjacent to river channels, extensive urban development in recent years has artificially accelerated the natural process of riverbank instability and slumping.

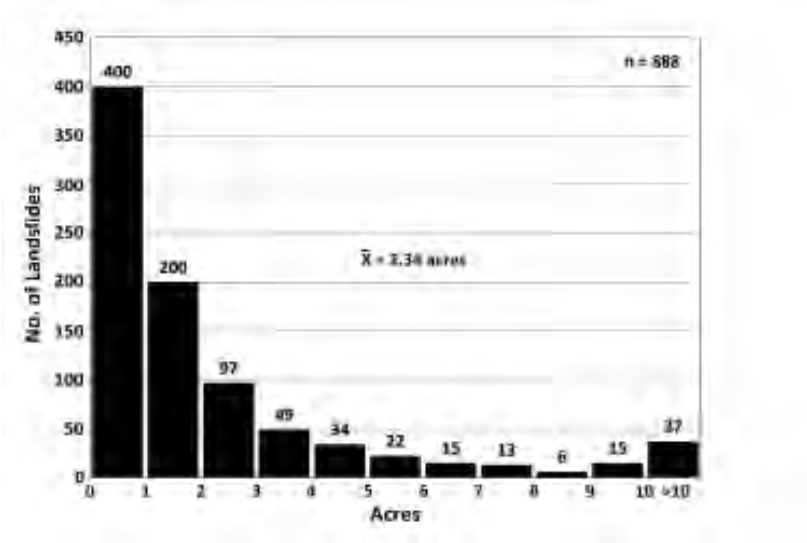
Several factors contribute to this acceleration:

- Houses are often built too close to unstable riverbanks. The weight of these structures increase pressure on the bank and leads to soil saturation from stormwater runoff, which can trigger slumping. When slumping occurs, homeowners have limited options, often needing to move the house.
- Irrigation systems and septic drain fields add excessive water and weight to the riverbanks, further reducing the already weak soil strength. Soil saturation is one of the leading causes of accelerated slumping.
- Additional weight from house, retaining walls, riprap, landscaping, and fill materials increase pressure on the riverbanks, further intensifying slumping.
- The replacement of deep-rooted native vegetation with shallow-rooted plants, like turf grass, weakens the soil. Shallow roots provide little stability, and the absence of tress decreases the soil's natural water absorption.

Riverbank slumping is a natural and often unavoidable process. Efforts to prevent it, such as lime stabilization and retaining walls have produced limited success. Many homeowners also mistake slumping for erosion and place heavy materials like riprap on the slope to stop it. However, this added weight often worsens the problem, accelerating the slumping process.

According to the North Dakota Geological Survey, there have been 888 landslides in Cass County. Of which, most have occurred along the Red, Sheyenne, Maple, and Wild Rice Rivers and have been less than one acre in size. Figure 3.29 shows landslides by acre that have occurred in Cass County since 1959.

Figure 3.29 – NDGS Cass County Landslides by Acres



Source: North Dakota Geological Survey

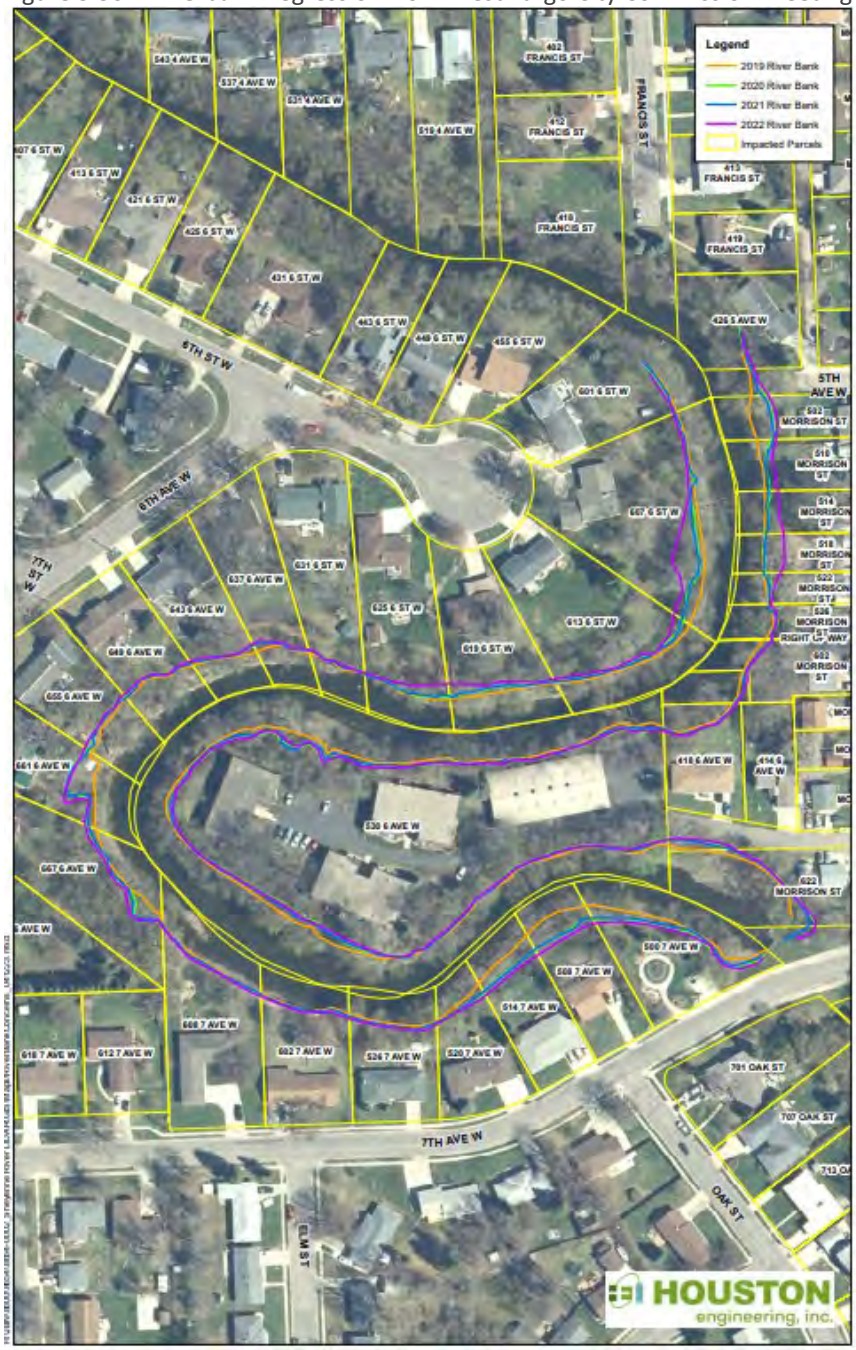
A condo complex and approximately 12 residences have been identified in West Fargo with slumping issues along the Sheyenne River. Other areas in the County have been identified where riparian projects may be a solution or buildings may need to be acquired and removed or relocated to areas further from the unstable riverbanks. These areas are primary along the Red River, Sheyenne River, and Wild Rice River in the unincorporated County.

The Landslide Incidence and Susceptibility Scale uses a 7-part scale ranging from high incidence to low incidence to no data. This scale is from *Geological Survey Professional Paper 1183: Landslide Overview Map of the Conterminous United States* https://pubs.usgs.gov/pp/p1183/pp1183.html and is summarized in Table 3.12. This scale is based on number of landslides and the probable degree of response of areal rocks and soils to natural or artificial cutting or loading of slopes or to anomalously high precipitation.

Table 3.12 – Landslide Incidence and Susceptibility Scale	
Incidence/ Susceptibility Level	**Characteristics**
High Incidence	More than 15% of area within a map unit involved in landslide
High susceptibility, moderate incidence	More than 15% of area within a map unit is characterized by rock or soil unit susceptible to displacement, and between 1.5 and 15% of the area was involved in a landslide
High susceptibility, low incidence	More than 15% of area within a map unit is characterized by rock or soil type susceptible to displacement, and less than 1.5% of the area was involved in a landslide
Moderate Incidence	Between 1.5 and 15% of the area within a map unit was involved in a landslide
Moderate susceptibility, low incidence	Between 1.5 and 15% of the area within a map unit is characterized by rock or soil type susceptible to displacement, and less than 1.5% of the area was involved in a landslide
Low Incidence	Less than 1.5% of the area within a map unit was involved in a landslide

The Sheyenne River at West Fargo has experienced significant erosion since 2019. The riverbank has receded as shown in the image below shared at a West Fargo City Commission Meeting on September 3, 2024. As shown in Figure 3.30, structures are now closer to the water's edge than they were in 2019. Multiple properties are at risk of falling into the river from the erosion.

Figure 3.30 – Riverbank Regression from West Fargo City Commission Meeting



Source: West Fargo City Commission Meeting, September 3. 2024

There is no universally recognized scientific scale for sinkhole size and frequency. One study completed by representatives of the U.S. Geological Survey (USGS) and released in July 2023 offers an approach that provides a uniform index of sinkhole potential which could support national planning as opposed to the existing assessment methodologies which may be used within individual states or smaller areas. *(Current and future sinkhole susceptibility in karst and pseudokarst areas of the conterminous United States. Front. Earth Sci. 18 July 2023, Sec. Solid Earth Geophysics. Volume 11-2023. https://doi.org/10.2289/feart.2023.1207689)* The USGS defines three common types of sinkholes:

- Dissolution – typically occurs when water percolates through joints in carbonate bedrock and carries away dissolved carbonate rock resulting in a depression in the bedrock and the ground surface.

- Cover-collapse – may occur abruptly where covering sediments contain significant amounts of clay that spall into a cavity in the bedrock which over time creates a cavity above the bedrock that eventually collapses when the covering sedimental structure loses its loadbearing capacity.
- Cover-subsidence – usually occurs slowly when granular sediments spall into secondary openings in underlying bedrock resulting in gradual settling of the surface and creating a noticeable depression in the land surface.

However, a final type of sinkhole is created primarily from a variety of human activities such as drilling, mining, underground pipe failures, and water diversion systems.

The USGS study report indicated that the presence of existing sinkholes is a major indicator of higher potential for sinkholes, and by extension, where there are not existing sinkholes there is only a low potential for future incidence of naturally occurring sinkholes.

Earthquake extent is often measured by magnitude and intensity. Magnitude, measured on the Moment Magnitude Scale, is based on the total moment release of the earthquake. Moment is a product of the distance a fault moved, and the force required to move it. Moment Magnitude estimates are about the same as commonly referenced Richter magnitudes but is capable of measuring M8 and greater events more accurately. Moment Magnitudes are based on a base 10 logarithmic scale. This means that for a given Magnitude (M) there is ten times the level of ground shaking as an M-1 event. Table 3.13 summarizes the Earthquake Moment Magnitude Scale. Intensity, measured on the non-scientific modified Mercalli scale, is based on how strong the shock is felt and the degree of damage at a given location. It does not use scientific equipment to measure seismic waves. Slight damage happens at Intensity VI on a ten-point scale.

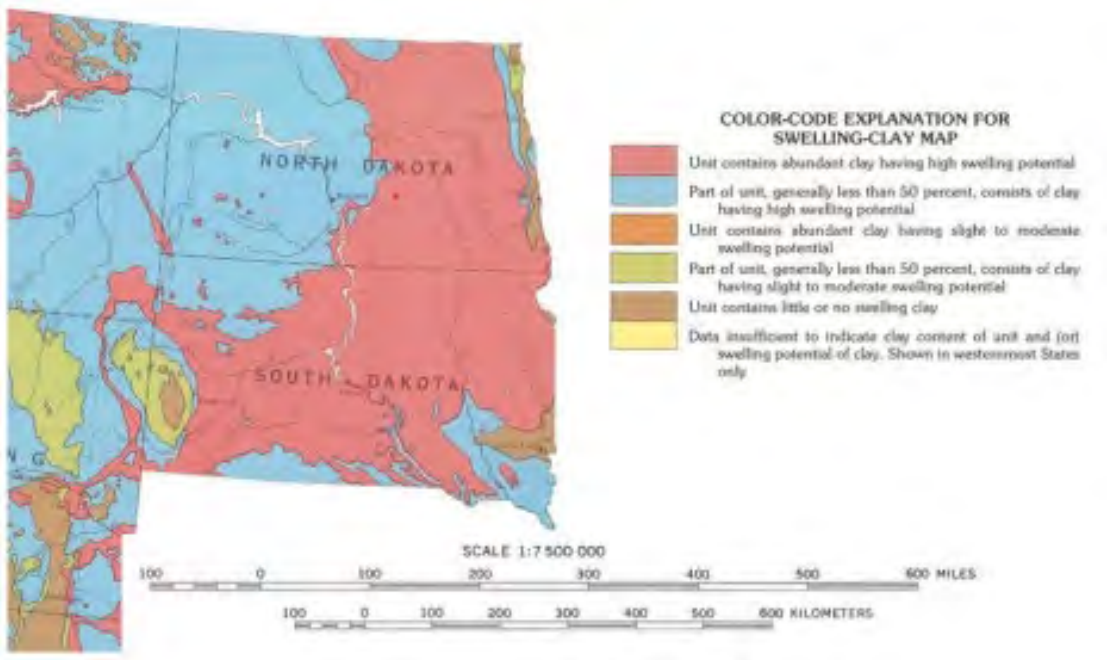
Table 3.13 – Earthquake Magnitude Moment Scale

Magnitude	Earthquake effects	Estimated number each year
2.5 or less	Usually not felt, but can be recorded by seismograph	Millions
2.5 to 5.4	Often felt, but only causes minor damage	500,000
5.5 to 6.0	Slight damage to buildings and other structures	350
6.1 to 6.9	May cause a lot of damage in very populated areas	100
7.0 to 7.9	Major earthquake. Serious damage.	10-15
8.0 or greater	Great earthquake. Can totally destroy communities near	One every year or two
9.5	Largest recorded earthquake. Chile, 1960	

Source: Michigan Tech, Earthquake Magnitude Scale

Expansive soils are soils that expand when they absorb water, expansive soils also shrink as they dry out. This causes damage to foundations, floors, and basement walls. Due to the repetitive shrinking and expanding properties of expansive soils, overtime damage to foundations, floors, and basements can worsen. Figure 3.31 shows the amount of clay soils that have high swelling potential. Fargo clay, the predominate soil type in the county, is considered a high swelling clay.

Figure 3.31 – Expansive Soils in the Northern great plains

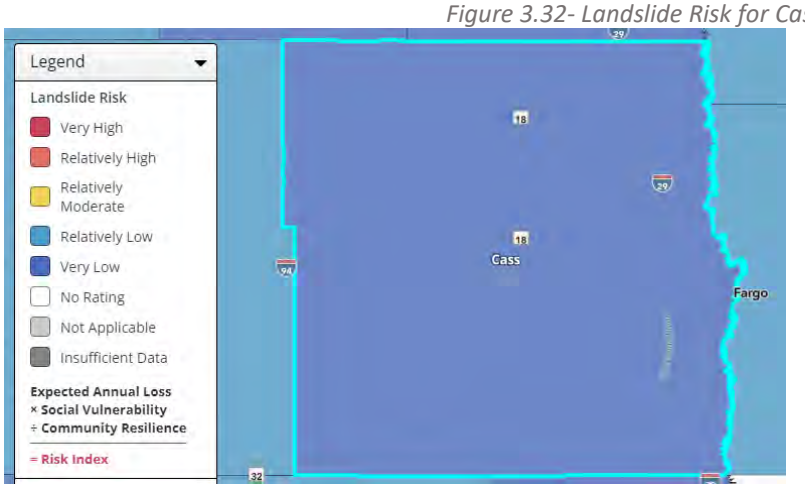


Source: USGS, Swelling clays map of the conterminous United States

PROBABILITY

Figure 3.32 shows the NRI for landslides in Cass County, which is considered "very low".

Figure 3.32- Landslide Risk for Cass County



[Map | National Risk Index (fema.gov)]

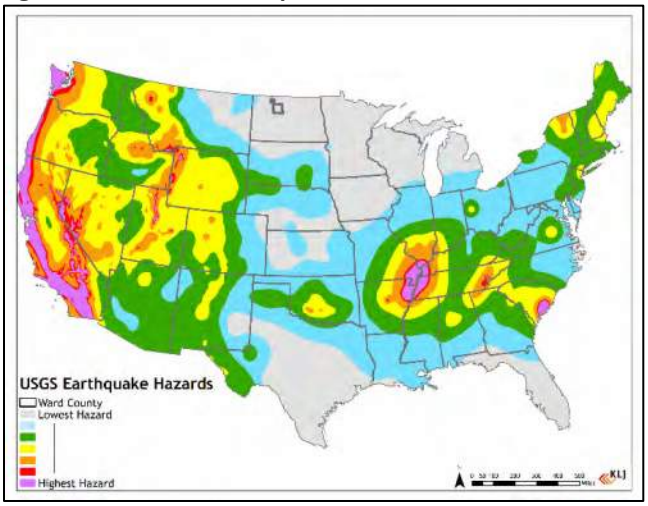
EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

The increase in precipitation may lead to increased soil saturation which potentially weakens rock or soils on slopes. https://eos.org/features/a-slippery-slope-could-climate-change-lead-to-more-landslides. While sinkhole occurrence may also be affected by climate change (https://education.nationalgeographic.org/resource/sinkhole/), it seems likely that landslides are more prevalent in Cass County. Earthquakes are extremely rare in North Dakota. So, by default, it is likely that landslides are the geologic hazard in North Dakota most likely to occur as a result of climate change. A pattern of wet conditions followed by extreme drought or vice versa may increase the potential for soil structural failure.

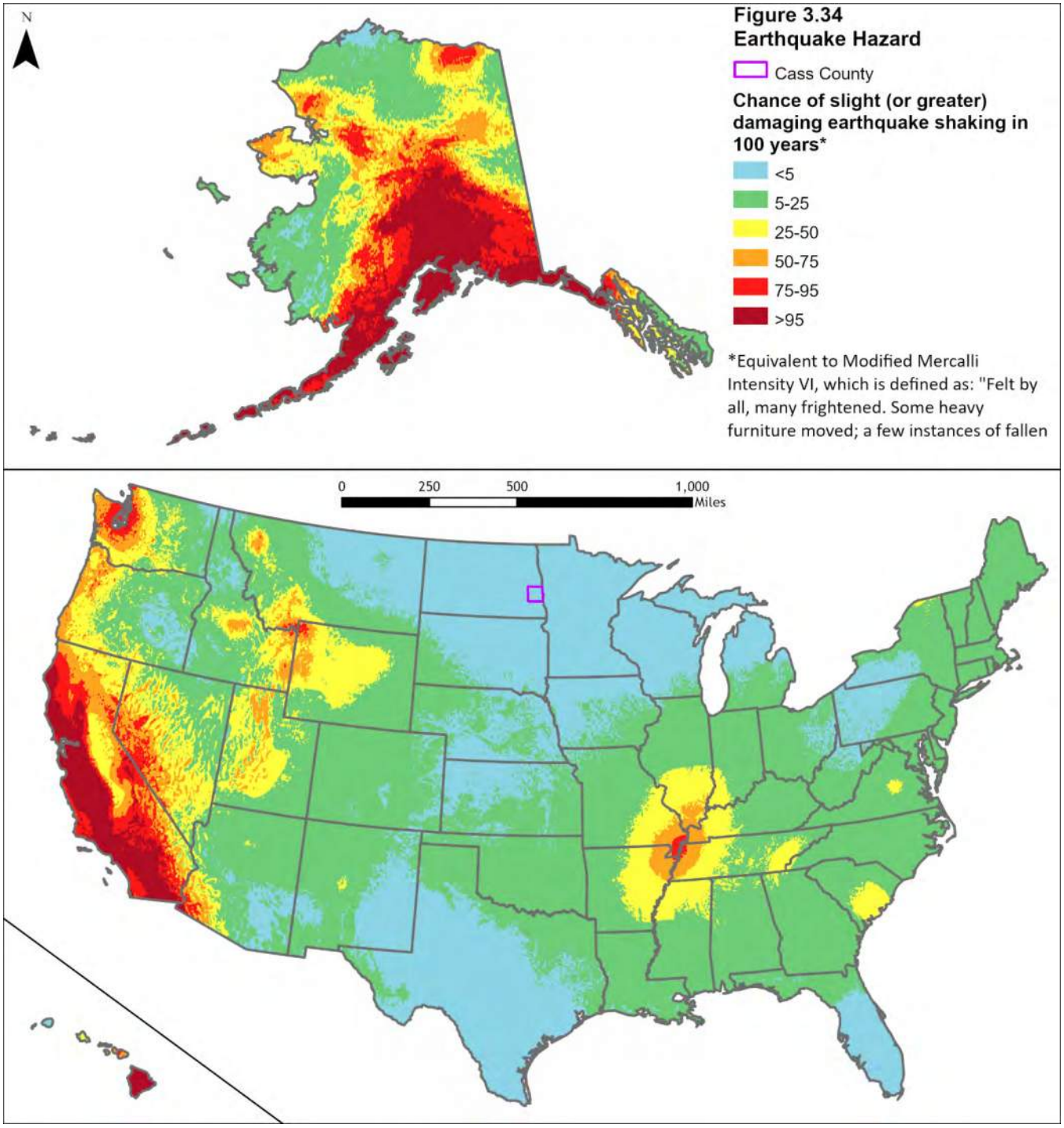
LOCATION

Figure 3.33 shows that Cass County, and practically all of North Dakota, has the lowest earthquake hazard level according to the USGS.

Figure 3.33 – USGS Earthquake Risk Levels



The 2018 Long-term National Seismic Hazard Map, pictured above, displays earthquake risk by showing probability of specific ground accelerations over 50 years from solid rock terrain, using a recent USGS model for the contiguous U.S, Hawaii, and Alaska. It factors in seismic activity, fault-slip rates, and earthquake magnitudes, but local variations can occur due to geological site conditions.


N
Figure 3.34
Earthquake Hazard
Cass County
Chance of slight (or greater) damaging earthquake shaking in 100 years*
<5
5-25
25-50
50-75
75-95
>95
*Equivalent to Modified Mercalli Intensity VI, which is defined as: "Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen
0
250
500
1,000
Miles

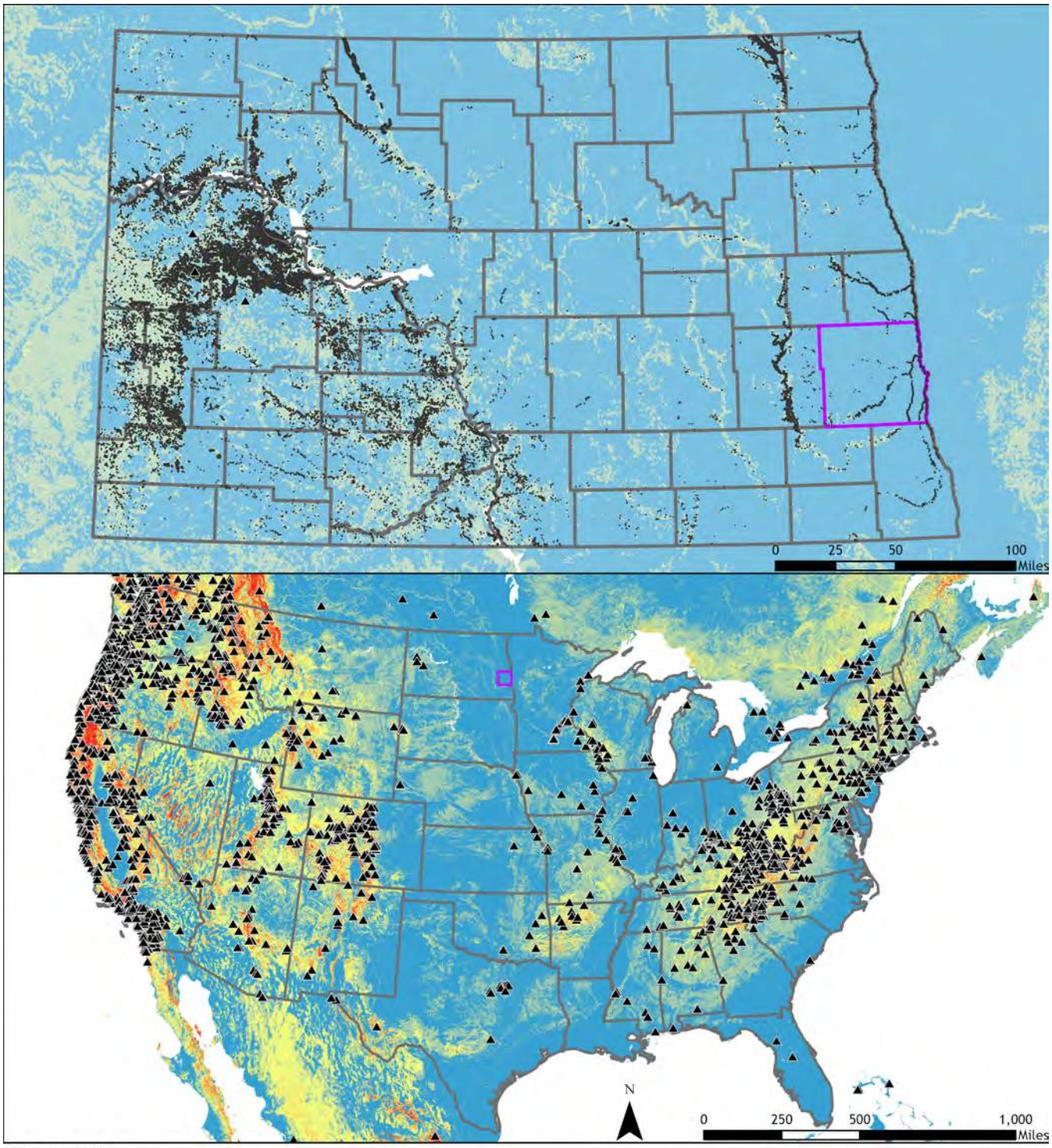


Figure 3.35
Landslide Hazards

Landslide Susceptibility
- Very Low
- Low
- Moderate
- High
- Very High
- ND Landslide Deposit Areas
- Landslide Locations

Sources:
NASA Global Landslide Susceptibility Map 2017
NASA Cooperative Open Online Landslide Repository (COOLR) 2023
North Dakota Geological Survey Landslide Deposit Layer 2022

VULNERABILITY

Population, Property, Critical Facilities, Economy, Future Development

- There is no discernable vulnerability to Cass County's population, property, critical facilities, economy, or potential future development from geologic hazards.

EXISTING CAPABILITIES

The State Building Code prohibits construction on steep slopes and provides general standards that contribute to earthquake resiliency. Alice, Amenia, Argusville, Arhtur, Briarwood, Buffalo, Casselton, Davenport, Fargo, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres Tower City West Fargo, and Cass County have adopted the State Building Code.

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: There are erosion issues related to geologic hazards in Cass County primarily along watercourses.

- *Potential Action Item*: Maintain or enhance setbacks from watercourses
- *Potential Action Item:* Encourage reduced watering or introduction of xeriscaping for developed areas
- *Potential Action Item:* Consider structural and natural mitigation methods to stabilize vulnerable areas

Severe Summer Weather

All Jurisdictions
Overall Risk: High
Probability: High
Magnitude: High

Seasonal Pattern
May - October

Duration
A few minutes to six hours.

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Human loss and injuries
Increased stress on medical services
Permanent loss of businesses
Power loss
Property damage or loss
Release of hazardous materials

HAZARD PROFILE

The elements of severe summer weather include tornadoes, wind, hail, lightning, and extreme heat.

Tornadoes are the most destructive weather phenomenon on earth. They can produce winds ranging from 65 MPH to more than 300 MPH and pose severe danger to life and property. Peak tornado season is from June to August, and most occur during evening hours. Tornadoes typically travel from southwest to northeast at a speed between 30 and 70 MPH and are generally on the ground for less than 10 minutes; however, tornado characteristics are highly unpredictable and can change rapidly.

Most tornado fatalities are caused by flying debris. Wind, hail, and scud clouds may mask the presence of a tornado and associated debris, which makes a public warning system critical for preventing loss of life and injuries.

Straight-line winds are a common element of severe summer storms, and typically responsible for most damage associated with the storms. Strong winds often form on the leading edge of severe storms, and gusts of more than 100 MPH are possible.

Hail presents a hazard for property, crops, livestock, and occasionally human life. Hail events range from an area of a few acres up to hundreds of square miles, although small events are most common. Hailstones can fall to the surface at more than 100 MPH and reach more than seven inches in diameter; however, most hailstones do not exceed two inches in diameter.

Lightning strikes pose multiple threats to life and property. A lightning strike can electrocute humans and animals, vaporize materials, cause fire, and cause an electrical surge that may damage equipment. Human deaths from lightning strikes are somewhat uncommon. According to the National Oceanic and Atmospheric Administration, there were 12 recorded lightning fatalities in North Dakota from 1959-2013. Florida led the nation during that time period, with 471 lightning fatalities. Livestock deaths and property damage are the most common lightning-related threats in North Dakota.

Extreme heat is a significant weather-related hazard that causes the highest number of annual deaths in the United States. It is characterized by prolonged periods of excessive hot weather, often with high humidity, leading to dangerous heat indices above normal seasonal temperatures. Extreme heat events typically occur between mid-July and mid-August but can happen at any time during the summer. In most regions, extreme heat is defined as temperatures exceeding 90°F for two or more consecutive days, with heat index reaching or surpassing 105°F. High humidity worsens the impact by reducing the body's ability to cool itself through evaporation, and vulnerable populations such as the elderly, children, and individuals with chronic health issues are particularly at risk. The NWS issues advisories or warnings when heat conditions are expected to reach critical levels.

HISTORY AND EXTENT

Cass County was included in four summer storm-related Presidential Disaster Declarations between 1950 and 2021.

Severe summer weather events in Cass County are summarized in Table 3.14. Hail and wind events occur approximately 9 and 4 times per year on average, respectively. Summer weather classification criteria and a detailed listing of events can be found in Appendix C.

Table 3.14 - Severe Summer Weather Events in Cass County, 1996-2023

Summer Storm Events	Event Days*	Annual Probability	Event Days per Year
Total	454	100.0%	16.8
Hail	217	100.0%	8.0
High/Thunderstorm Wind	177	100.0%	6.6
Tornado/ Funnel Cloud	57	100.0%	2.1
Excessive Heat	3	11.1%	0.1

**Number of days with a reported event*
Source: National Climatic Data Center Storm Events Database

A severe hail event is defined as a storm producing hailstones greater than 0.75 inches in diameter. According to the National Weather Service, the largest hailstone recorded in Cass County from 1950 to 2024 is 4.5 inches in diameter, which occurred on July 17, 2001. July is the most common month for severe hail in the county, accounting for 35 percent of all reported hail events between 1996 and 2024. Common impacts from hail include broken windows, damaged shingles, dented or broken gutters, and damaged vehicles. Heavy hail events can also injure livestock and destroy crops.

A severe wind event is defined as gusts of at least 50 kts or 58 MPH. According to the National Climatic Data Center the greatest straight-line wind gust recorded in Cass County from 1950 to 2024 is 66 kts (76 MPH), which occurred on November 1, 1999. July is the most common month for high wind in the county, accounting for 18 percent of all reported wind events between 1996 and 2024. Common impacts from severe winds include broken trees and limbs, damaged agricultural structures, and damaged power poles.

Severe tornadoes are relatively rare in the county, as shown in Figure 3.X. There were 80 tornadoes/funnel clouds reported in the county between 1996 and 2024. However, a majority were rated at EF0 or EF1 meaning they caused minimal damage to property. The impact would be devastating if a large tornado were to directly strike a city. Refer to the 1957 Fargo tornado

Anecdotal evidence suggests that lightning presents an ongoing risk to people and property in the county. There are four documented instances of lightning from 1950-2024 in Cass County, two of which caused property damage.

A selection of recent summer storm events within Cass County as noted in the National Climatic Data Center Storm Events Database are summarized below.

- ***June 1957.*** A F5 tornado along with four other tornadoes touches down from Buffalo, ND to Dale, MN. The F5 tornado that touched down in Fargo had a path of 9 miles long and 70 feet wide. According to the National Weather Service, remarkably, a tornado warning was issued an hour and three minutes before touchdown. There were 10 casualties and 103 injuries, but many more were avoided within an hour of evacuation time. Debris from the storm was found 54

miles northeast of Fargo. Property damaged from this supercell thunderstorm that created the tornados totaled $25,000,000.

- ***July 1, 1997***. Lightning struck near Davenport and two sugar beet workers were injured and another was killed.
- ***July 4, 1999***. In the morning of July 4th, a thunderstorm struck Cass County. Trees and power lines were brought down, roofs were destroyed, and Fargo's Hector International Airport had lost a hanger from the strong winds peaking at 91 mph. Over $80,000,000 in property damage was accrued.
- ***July 2000***. High Winds of an unidentified magnitude killed 1 and injured 11 construction workers working in a three-story apartment building in southwest Fargo collapsed. Property damage from the high winds resulted in $3,000,000.
- ***July 2003***. A storm cell with hail measuring 0.88 inches struck Gardner ($1,250,000 in damages), and thunderstorm winds ranging from 48-60 mph in Argusville, Arthur, Gardner, and Tower City resulted in a combined total of $2,966,000 (including hail damage). Damage included seven 80ft high voltage towers that were blown down, numerous trees were snapped at their bases, and Cass County Electric reported 40 downed power poles causing 1,300 customers without power. Some residents in Tower City reported sewage backups from loss of power. One person was injured from the storm in Argusville.
- ***July 2007***. A storm cell (hail, thunderstorm winds from 60-100 mph, an EF1 and EF2 tornado, funnel cloud) resulted in a combined property damage of $13,500,000 and crop damage of $150,000,000 between the jurisdictions of Alice Buffalo, Chaffee, Embden, Hunter, Leonard, Mapleton, Page, Prosper, and Tower City.
- ***September 2007***. A hailstorm in the Fargo area produced 3.50-inch diameter hail and resulted in $30,000,000 of property damage.
- ***June 2008***. Thunderstorm wind in Buffalo, Fargo, and West Fargo topping out at 63-64 mph and 0.75-inch diameter hail in Grandin ($500,000 in crop damage alone) resulted in a combined property damage of $370,000 and crop damage of $1,800,000.
- ***July 2010***. Thunderstorm winds topped out at 90 mph resulted in $1,000,000 in property damage in West Fargo.
- ***May 2011***. Three tornados rated as high as EF2 cause $1,650,000 in property damage between Kindred, St. Benedict, Horace, and West Fargo. The first tornado, the only one rated as an F2, had top wind speeds of 110-115 mph. This tornado damaged a WDAY radio tower and toppled another, and some buildings had roof damage and steel sheeting ripped from their walls. The second tornado, the first of the F1s, followed a path from North of Walcott to 3-4 miles of Kindred and Horace. This tornado is responsible for snapping wooden power poles and crushed metal towers that supported high voltage lines. The third tornado, the other F1, crinkled two metal high-voltage towers south of 52nd Ave's South Walmart in Fargo as it entered from the southeast of Fargo and moved across Fargo into northwest Moorhead.
- ***May 2017***. In the Cotter area, two people were injured by a thunderstorm wind with max speed of 60 mph.

According to the National Weather Service the Enhanced Fujita Scale is a set of wind estimates (not measurements) used to rate tornados based on wind speeds and related damages. This suggests that it may not be on a scientific scale. It uses 3 second wind gusts estimated at the point of damage based on a judgment of 8 levels of damage to 28 indicators. The EF rating ranges from 0-5 (See Table 3.15).

Table 3.15 – Enhanced Fujita Scale

EF Rating	3 Second Gust (MPH)
0	65-85
1	86-110
2	111-135
3	136-165
4	166-200
5	Over 200

Source: National Weather Service

The Beaufort Wind Scale is commonly used to describe the extent or magnitude of straight-line winds. It starts at 0 and ends at a force of 12 (See Table 3.16).

Figure 3.16 - Beaufort Wind Scale – Sustained Wind				
Beaufort Number	MPH Range	MPH Average	Terminology	Description
0	0	0	Calm	Calm. Smoke rises vertically
1	1-3	2	Light air	Wind motion visible in smoke
2	4-7	6	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	11	Gentle breeze	Leaves and smaller twigs in constant motion.
4	13-18	15	Moderate breeze	Dust and loose paper are raised. Small branches begin to move.
5	19-24	22	Fresh breeze	Smaller trees sway
6	25-31	27	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrellas use becomes difficult.
7	32-38	35	Near gale	Whole trees in motion. Some difficulty when walking into the wind.
8	39-46	42	Gale	Twigs broken from trees. Cars veer on road.
9	47-54	50	Severe gale	Light structure damage.
10	55-63	60	Storm	Trees uprooted. Considerable structural damage.
11	64-73	70	Violent storm	Widespread structural damage
12	74-95	90	Hurricane	Considerable and widespread damage to structures.

Source: National Weather Service

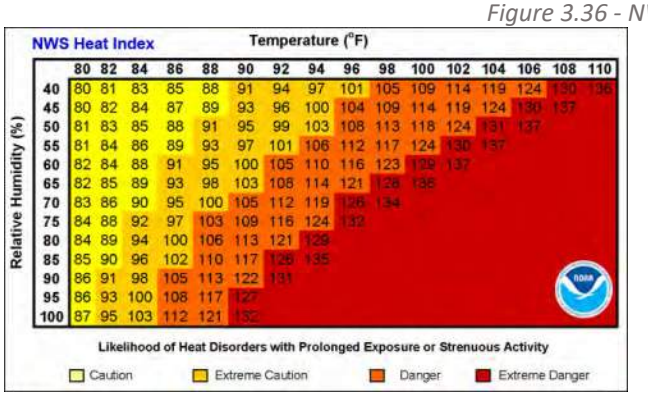
Table 3.17 describes damaging wind gusts are measured using surface wild sensors or estimated based on observed or reported phenomena, flowing the NWS guidelines for Strom Data Preparation. Wind gusts of 50 knots (58 mph) or higher typically cause damage similar to sustained winds of around 40 knots (47 mph) or more. However, sustained thunderstorm outflow winds lasting two minutes or longer, as defined by the Beaufort wind scale, generally cause significantly more damage than a 3-seconf wind gust of the same strength, according to the wind gust damage scale.

Figure 3.17 - Estimating Wind Speed from Damage – Wind Gust	
Wind Speed	**Observations**
26-38 kts (30-44 mph)	Trees in motion. Light-weight loose objects (e.g., lawn furniture) tossed or toppled.
39-49 kts (45-57 mph)	Large trees bend; twigs, small limbs break, and a few larger dead or weak branches may break. Old/weak structures (e.g., shed, barns) may sustain minor damage (roof, doors). Building partially under construction may be damaged. A few loose shingles removed from houses. Carports may be uplifted minor cosmetic damage to mobile homes and pool lanai cages.
50-64 kts (58-74 mph)	Large limbs break; shallow rooted trees pushed over. Semi-trucks overturned. More significant damage to old/weak structures. Shingles, awnings removed from houses; damage to chimneys and antennas; mobile homes, carports incur minor structural damage; large billboard signs may be toppled.
65-77 kts (75-89 mph)	Widespread damage to trees with trees broken/uprooted. Mobile homes may incur more significant structural damage; be pushed off foundations or overturned. Roof may be partially peeled off industrial/commercial/warehouse buildings. Some minor roof damage to homes. Weak structures (e.g., farm buildings, airplane hangars) may be severely damaged.
78+ kts (90+ mph)	Many large trees broken and uprooted. Mobile homes severely damaged; moderate rood damage to homes. Roofs partially peeled off homes and buildings. Moving automobiles pushed off dry roads. Barns, shed demolished.

Source: NWSI 10-1605, Storm Data Preparation

The National Weather Service Heat Index Scale shown below in Figure 3.36 uses temperature and humidity in combination to designate the impacts heat can have on people. The scale ranges from caution to extreme danger.

Figure 3.36 - NWS Heat Index Scale



Source: National Weather Service

It is important to note that the heat index values were devised for shady, light wind conditions. Exposure to full sunshine can increase the heat index up to 15°F.

Figure 3.37 illustrates the Lightning Activity Level scale measures the frequency and intensity of lightning strikes in a specific geographic area during a specific time frame and assigns values from 1 to 6. Meteorologists use specialized equipment to monitor lightning strikes and assess their severity and risk. Lightning activity levels can vary seasonally and regionally, affecting the potential for severe weather. Monitoring lightning activity is crucial for wildfire management and public awareness. The Lightning Activity scale is shown below.

Figure 3.37 - NWS's Lightning Activity Scale

LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a five minute period.
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a 5 minute period.
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced Lightning is frequent, 11 to 15 cloud to ground strikes in a 5 minute period.
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater then 15 cloud to ground strikes in a 5 minute period.
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag Warning.

Source: National Weather Service

Table 3.18 uses NOAAS relations of hail size to commonly known objects to help meteorologists and the public better understand the severity of hailstorms. NOAA encourages measuring rather than estimating hail size. Relating hail size to everyday objects helps communicate the potential danger, enabling individuals to make informed decisions to safeguard themselves and their property.

Table 3.18 – Hail Size Related to Objects	
Hail Diameter Size (Inches)	Object
1/4	Pea Size
1/2	Mothball, Peanut, USB Plug
3/4	Penny Size
7/8	Nickle Size
1	Quarter Size
1 1/4	Half Dollar Size
1 1/2	Ping Pong Ball Size
1 3/4	Golf Ball Size
2	Lime or Medium Sized Hen
2 1/2	Tennis Ball Size
2 3/4	Baseball Size
3	Large Apple
4	Softball
4 1/2	Grapefruit

Source: NOAA

The Tornado and Storm Research Organization (TORRO), based in Great Britain, introduced the Hailstorm Intensity Scale (H-Scale) in the 1986. While it is primarily used in Great Britian and Ireland, it may require adjustments for application in other regions. Similar to the National Weather Service size scale, the H-Scale allows for hail size to be determined in the field either by direct measurement or by comparing it to familiar objects. As illustrated in Table 3.19, the H-Scale ranges from H0 to H10, with each level reflecting variations in intensity and potential damage. These increments are based on factors such as hail size (distribution and maximum), texture, quantity, fall speed, storm movement speed, and the strength of accompanying wind.

Table 3.19 – TORRO Hailstorm Intensity Scale				
Scale	**Intensity Category**	**Typical Hail**	**Probable Kinetic**	**Typical Damage Impacts**
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants and crops
H2	Significant	10-20	>100	Significant damage to fruit, crops, and vegetations
H3	Severe (U.S., thru	20-30	>300	Severe damage to fruit and crops, damage to glass
H4	Severe (U.S., after	25-40	>500	Widespread glass damage, vehicle bodywork
H5	Destructive	30-50	>800	Wholesale destruction of glass, damage to tiled
H6	Destructive	40-60		Bodywork of grounded aircraft dented; brick walls
H7	Destructive	50-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Extensive structural damage. Risks of severe or even fatal injuries to person caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to person caught in the open

Source: Tornado and Storm Research Organization

Thunderstorm probability and the corresponding Lightning Activity Level (LAL), as represented on the scale in Figure 3.20, reflect the expected frequency of cloud-to-ground lightning within a 30-mile radius of an observation site over a five-minute period. The midrange of the scale, LALs 2 through 5, pertains to lightning occurring in areas experiencing rainfall. LAL 6, however, specifically identifies the potential for dry lightning. This type of lightning typically originates from scattered

or high-based thunderstorms, often found in arid regions lacking recent precipitation. Such conditions are frequently linked to an increased risk of wildfire ignition. Dry lightning poses a significant hazard in the spring, before vegetation has greened up, as grasslands, rangelands, and roadsides often contain an abundance of highly flammable fry fuels.

Figure 3.20 – Thunderstorm Probability and Related Lightning Activity Level (LAL)

Thunderstorm Probability	Thunderstorm Category	Rain Intensity	LAL	Lightning Characteristics (CG: Cloud-to-Ground)
None	None	Variable	1	None
10%	Isolated	Light Rain occasionally reaching the ground	2	1 to 5 CG lightning strikes in 5-minute period
20%	Widely Scattered	Light to moderate rain reaching the ground	3	6 to 10 CG lightning strikes in a 5-minute period
30-50%	Scattered	Moderate rain is common	4	Frequent, 11 to 15 CG strikes in a 5-minute period
60-70%	Numerous	Moderate to heavy rainfall	5	Frequent and intense, 15+CG strikes in 5-minute period
20% (Dry)	Dry Lightning	Little to no rain	6	Like LAL 3 but without rain, with higher wildland fire threat

Source: National Weather Service, 2023

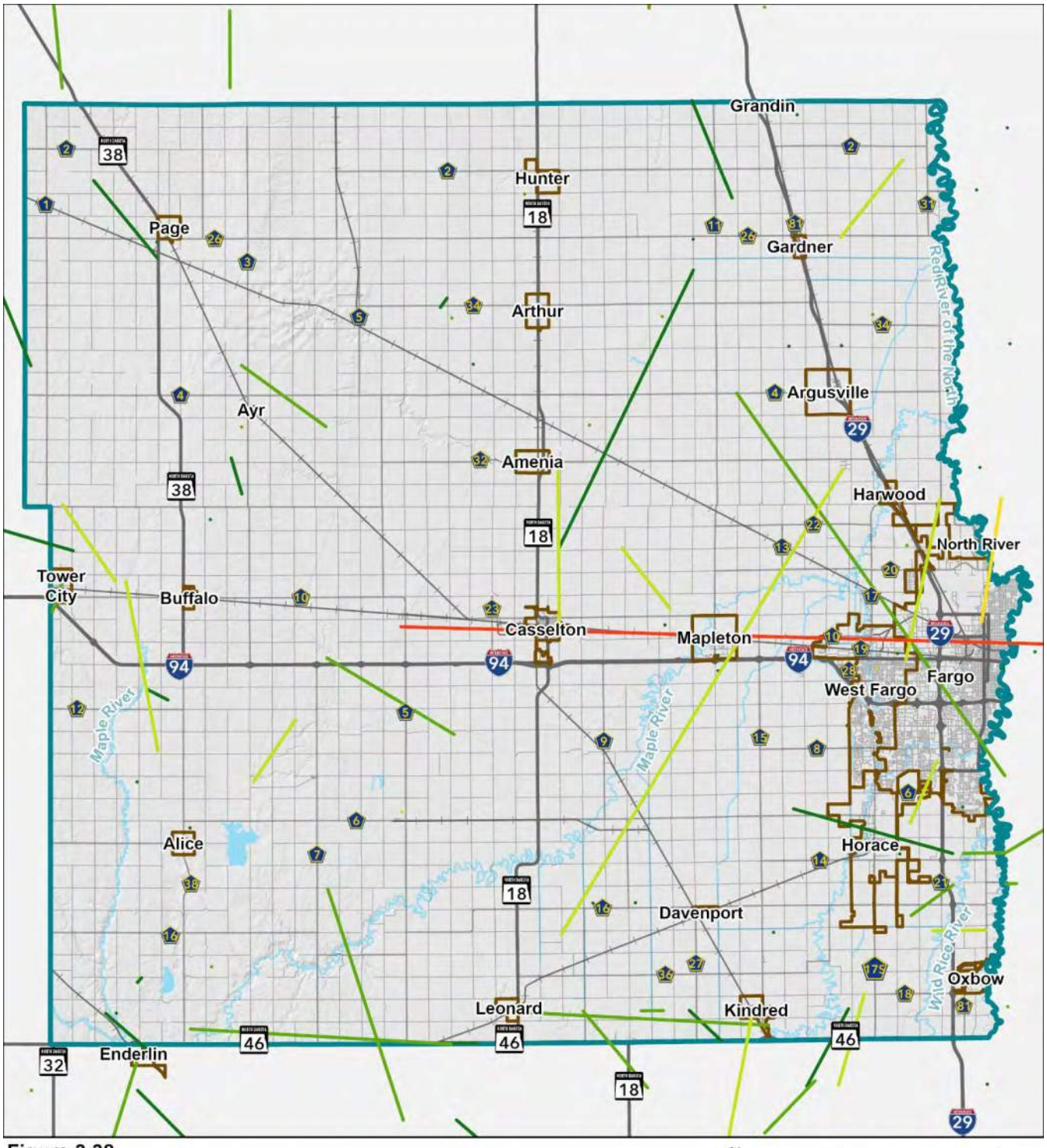


Figure 3.38
Tornadoes

PROBABILITY

Recent severe summer weather events in Cass County are summarized in Table 3.14. The county has about 16 event days per year. Summer weather event classification criteria and a detailed listing of events can be found in Appendix C. There is essentially a 100% annual probability of severe summer storms in Cass County.

Figure 3.39 shows the NRI for a tornado in Cass County, which is considered "relatively high".

Figure 3.39 - Cass County Tornado



Source: National Risk Index

Figure 3.40 shows the NRI for strong wind in Cass County, which is considered, "very high".

Figure 3.40 - Cass County Strong Wind Risk



Source: National Risk Index

Figure 3.41 shows the NRI for a heat wave in Cass County, which is considered “relatively moderate”.

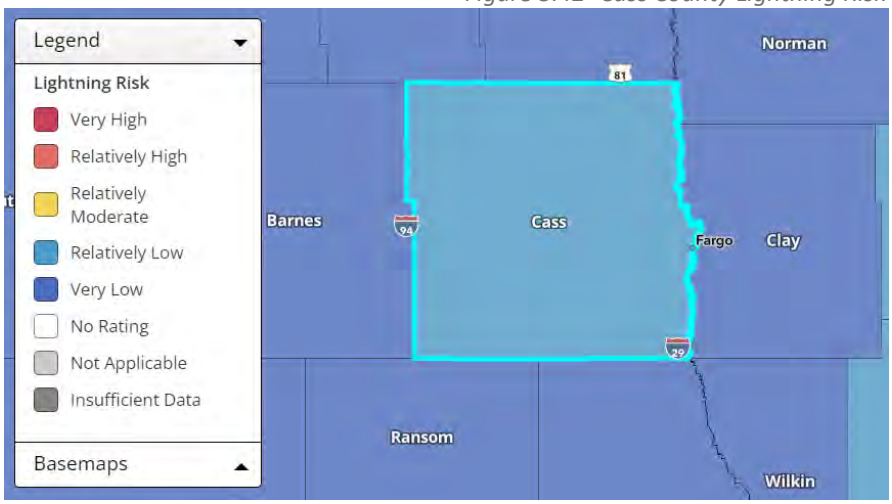
Figure 3.41- Cass County Heat Wave Risk



Source: National Risk Index

Figure 3.42 show the NRI for lightning in Cass County, which is considered “very low”.

Figure 3.42- Cass County Lightning Risk



Source: National Risk Index

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

For severe summer weather, the extreme heat and drought risks have already been mentioned. With higher temperatures and increased atmospheric moisture, severe storms are more likely to have more intense rainfall and/or cover a larger area. Though the overall severity of thunderstorm winds, hail, and tornadoes may not increase, the relative impact area could increase, causing further damage to the county. Extreme heat may have even more impact in urban settings where urban heat islands occur.

LOCATION

Severe summer weather occurs at a regional level and is not a micro-climatic event. It generally occurs across the entire geographical area of the county. As noted in the Hazard Profile, the scale of its elements can vary widely, and the location of their occurrences are unpredictable.

VULNERABILITY

Population

Population centers are more vulnerable to the impacts of severe summer weather. In Cass County the population centers are Alice, Argusville, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo. The largest population center is Fargo.

The entire population is vulnerable to a severe summer storm event. A tornado hitting any city in the county could result in scores of injuries or deaths. Residents living in mobile homes or recreational vehicles are particularly vulnerable to tornado and wind events. There are an estimated 1,020 mobile homes in Fargo, 401 mobile homes in West Fargo, and 29 mobile homes in other cities in Cass County. Assuming 2.25 persons per mobile home, the vulnerable population estimates would be:

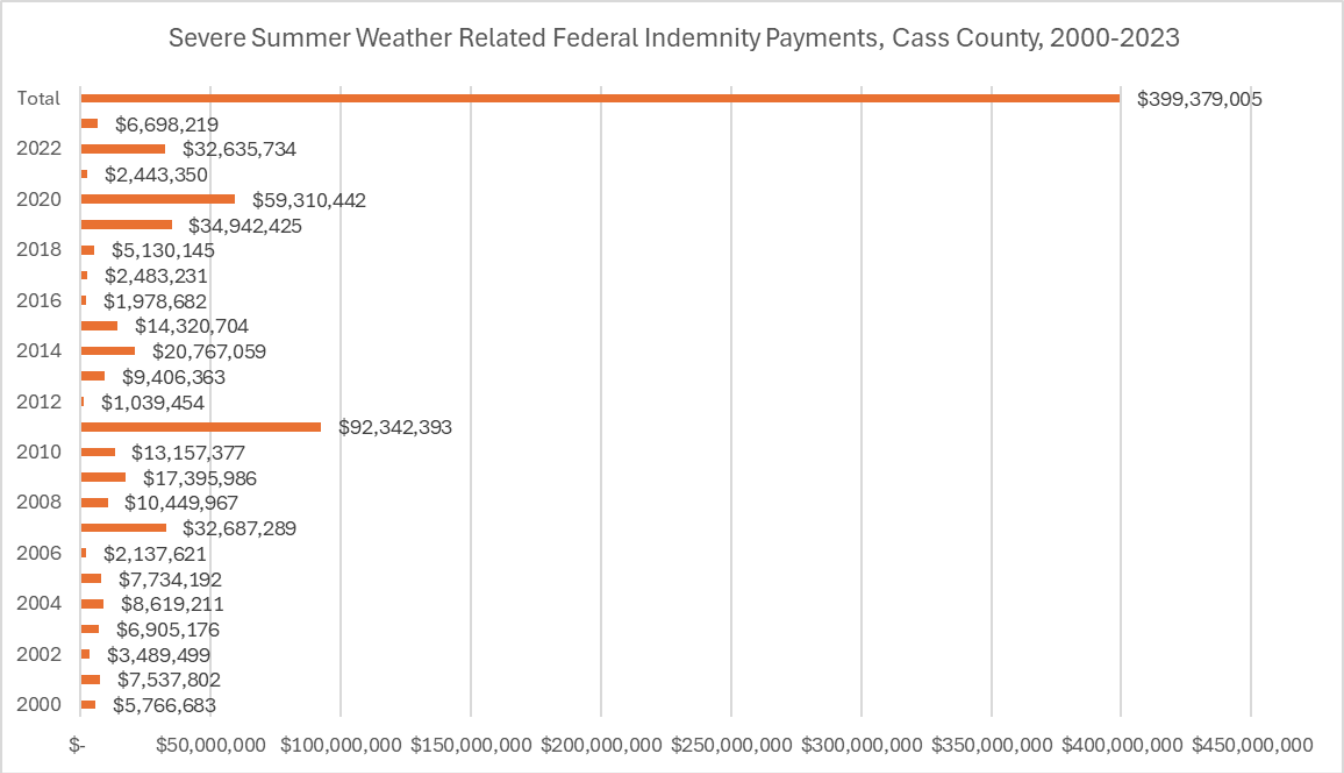
- Alice: 0 people (0 mobile homes)
- Amenia: 0 people (0 mobile homes)
- Argusville: 0 people (0 mobile homes)
- Arthur: 11 people (5 mobile homes)
- Ayr: 2 people (1 mobile home)
- Briarwood: 0 people (0 mobile homes)
- Buffalo: 7 people (3 mobile homes)
- Casselton: 20 people (9 mobile homes)
- Davenport: 2 people (1 mobile home)
- Fargo: 2,295 people (1,020 mobile homes)
- Frontier: 0 people (0 mobile homes)
- Gardner: 0 people (0 mobile homes)
- Grandin: 0 people (0 mobile homes)
- Harwood: 0 people (0 mobile homes)
- Horace: 68 people (30 mobile homes)
- Hunter: 0 people (0 mobile homes)
- Kindred: 34 people (15 mobile homes)
- Leonard: 5 people (2 mobile homes)
- Mapleton: 0 people (0 mobile homes)
- North River: 0 people (0 mobile homes)
- Oxbow: 0 people (0 mobile homes)
- Page: 0 people (0 mobile homes)
- Prairie Rose: 0 people (0 mobile homes
- Reile's Acres: 0 (0 mobile homes)
- Tower City: 0 people (0 mobile homes)
- West Fargo: 902 people (401 mobile homes)

Persons living at or below the poverty line as well as homeless individuals are more likely to be affected by heat-related illness. The City of Fargo estimates that there are around 760 homeless individuals in the Fargo area at any given time. The estimated number of persons living at or below the poverty level in Cass County is 24,726.

Property

- One of the most damaging summer storm events recorded by the National Climate Data Center since 2000 is an EF2 tornado in July 2007 that caused an estimated $2,500,000 in damages
- Agricultural indemnity payments in Cass County for severe summer weather from 2000 through 2023 totaled nearly $400,000,000 million. Based on an 89% participation rate in the County, total damages on an annualized basis would be over $448,740,455 million. Statistics can be seen in Figure 3.43.

Figure 3.43 –Severe Summer-Related Federal Indemnity Payments, Cass County, 2000-2023



Source: *National Drought Mitigation Center (USDA Risk Management Agency 2018-2024*)*

Critical Facilities

- All critical facilities are vulnerable to a severe summer storm event. Facilities with an increased vulnerability include schools, special care centers, tall buildings or structures, electrical infrastructure and outdoor recreation or event facilities.

Economy

- The economic impact of severe summer weather may be greatest on the agricultural industry since crop damage due to extreme heat, hail or other severe weather can ruin large swaths of growing products. Annualized crop loss is estimated at $17,379,957. Other economic impacts from severe summer weather are unknown.
- There are also impacts on the oil industry, severe summer weather can shut down operations or create costly damage to equipment.

Future Development

- Cass County, Alice, Amenia, Argusville, Briarwood, Buffalo, Casselton, Davenport, Fargo, Gardner, Grandin, Harwood, Horace, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo have adopted the State Building Code which consists of the 2018 International Building Code, International Residential Code, International Mechanical Code, International Energy Conservation Code, and International Fuel Gas Code published by the International Code Council. The code includes a provision that buildings must be constructed to withstand a wind load of 76 MPH constant velocity and three-second gusts of 115 MPH. This will reduce impacts and risk from severe summer weather, particularly from wind.

EXISTING CAPABILITIES

- All cities except Alice, Argusvile, Briarwood, North River, and Page at least one emergency warning siren. Briarwood and North River do not have their own warning sirens but are in close enough proximity to neighboring cities that do,

allowing residents to hear the sirens and take appropriate actions during clear weather. However, during rain, snow, or windy conditions, the sound may be harder to hear, which could impact residents' ability to respond.
- Red River Regional Dispatch tests sirens on the first Wednesday of each month at 1 pm to make sure the sirens are working properly.
- Buffalo, Casselton, Gardner, Harwood, Kindred, Mapleton, Tower City, and West Fargo have an informal or formally designated emergency shelter

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Cass County averages about 17 severe summer storm event days per year. Severe wind and hail are the most common summer storm events in the County, and tornadoes are also a possibility in the region. Lightning strikes have the possibility to cause significant property damage. The Cities of Alice, Amenia, Argusville, Arthur, Ayr, Briarwood, Davenport, Grandin, Horace, Leonard, North River, Oxbow, Page, Prairie Rose, and Reile's Acres) need emergency shelters.

- *Potential Action Item*: Install and maintain surge protection on critical equipment.
- *Potential Action Item*: Upgrade each jurisdiction's warning siren receivers to the new statewide 800 Mhtz standard.
- *Potential Action Item*: Construct an emergency shelter at Alice, Amenia, Argusville, Arthur, Briarwood, Davenport, Grandin, Horace, Leonard, North River, Oxbow, Page, and Prairie Rose.
- *Potential Action Item*: Encourage Arthur, Ayr, Frontier, Reile's Acres to adopt the new State Building Code based on the 2021 International Building Codes and to require building permitting to ensure construction happens to code.
- *Potential Action Item*: Increase hail, lightning, and severe wind risk awareness.

Severe Winter Weather

All Jurisdictions
Overall Risk: High
Probability: High (Approximately 6 event days per year countywide)
Magnitude: High (Potential for damages totaling millions of dollars with fatalities)

Seasonal Pattern
October - April

Duration
One to three days

Primary Impacts
Agricultural loss (crops, livestock)
Blocked roads
Economic loss
Exposure risks to people, pets, livestock, and wildlife
Freezing pipes
Human loss and injuries
Increased stress on medical services
Power loss
Property damage or loss
School closure
Vehicle accidents

HAZARD PROFILE

Elements of severe winter weather include blizzards, heavy snow, ice storms and extreme cold. These elements can produce life-threatening situations and are a threat to people and property.

A blizzard is defined by the National Weather Service as a storm producing winds of 35 mph or more, with snow and/or blowing snow reducing visibility to less than 0.25 miles for at least three hours. A closely related weather event known as a surface blizzard occurs when heavy winds blow snow that has already fallen. Both traditional and surface blizzards can reduce visibility, disrupting transportation and communication systems in the area.

Heavy snow is defined as six or more inches of snow in 12 hours, or eight or more inches of snow in 24 hours. Heavy snow can damage property and make roads impassable for extended periods.

An ice storm produces heavy and damaging accumulations of ice due to a combination of rain and below freezing surface temperatures. Accumulated ice can bring down trees and power lines and poses a threat to motorists, pedestrians, and livestock.

Extreme cold is a common occurrence in North Dakota during the winter months. The National Weather service defines extreme cold in the northern U.S. as “temperatures well below zero.” Cold temperatures are amplified when combined with wind, creating dangerous wind chills. Exposure to extreme cold temperatures and wind chill can damage tissue (frostbite) and lower the body’s core temperature (hypothermia), presenting a risk to both humans and livestock.

A snow squall is a short intense period of winter weather but is not considered a blizzard due to the short duration.

A winter storm is any combination of three or more advisory or warning conditions where impacts are below the threshold described above for all other forms of severe winter weather.

HISTORY AND EXTENT

Cass County was included in three winter storm-related Presidential Disaster Declarations between 1953 and 2021.

A summary of the severe winter weather events in Cass County is shown in Table 3.21. On average, a severe winter weather event occurs in the county approximately six days per year.

Table 3.21 - Severe Winter Weather Events in Cass County, 1996-2024

Winter Storm Events	Event Days*	Annual Probability	Event Days per Year
Total	251	100.0%	9.0
Extreme Cold/Wind Chill	47	100.0%	1.7
Blizzard	80	100.0%	2.9
Winter Storm	51	100.0%	1.8
High Wind	39	100.0%	1.4
Heavy Snow	33	100.0%	1.2
Other winter Weather	1	0.3%	0.0

**Number of days with a reported event*
Source: National Climatic Data Center Storm Events Database

Extreme cold, blizzard, and winter storm events occurring in this umbrella category of Severe Winter Weather. Power outages during severe winter storms are an occasional concern throughout the county, but electricity is generally restored quickly.

Another significant concern raised by the Planning Team and stakeholder involves motorists driving on closed roads or interstates during blizzards, winter storms, and high winds events coupled with heavy snow. Despite road closures warnings and postings, some drivers choose to ignore them and proceed, often resulting in vehicles becoming stranded in the inclement weather. When this happens, NDDOT staff, Cass County Sheriffs, and other first responders risk their lives to rescue stranded motorists. This not only creates a dangerous situation for those involved but also puts costly equipment at risk of damage. The common consensus during stakeholder meetings is that such incidents are entirely preventable if motorists simply follow road closure notices.

The greatest one day officially recorded snowfall event in Cass County was 21 inches on January 18, 1996, according to the NOAA National Center for Environmental Information.

Significant past severe winter weather events include:

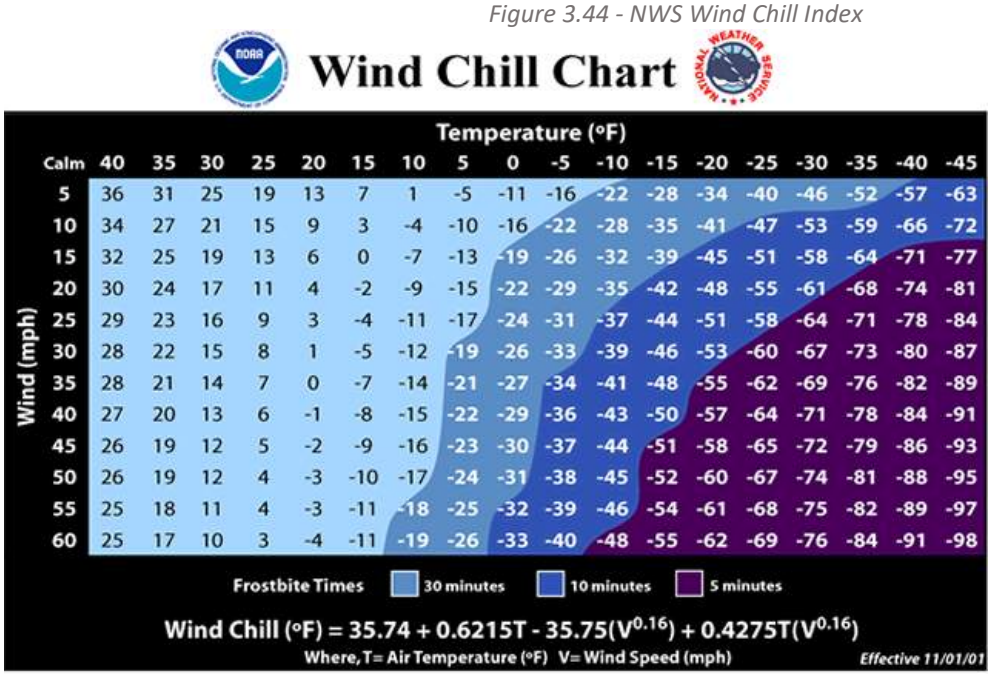
- ***January 17, 1996.*** In Fargo, a powerful low-pressure system combined with artic high pressure brought record-setting snowfall and extreme winter conditions. The city received 18 inches of snow within 24 hours, breaking previous records. Winds gusting up to 55 mph created snowdrifts as high as 10 feet, severely impacting transportation. I-94 was closed from Bismarck to Fargo, and law enforcement officials advised against travel, though some drivers who ignored the warnings became stranded for hours. Schools and businesses in Fargo shut down on the 17th, many remaining closed for several days. Temperatures plummeted to 10 to 20 degrees below zero, with wind chills reaching a brutal 60 to 80 below zero. Snow removal efforts were hindered as hydraulic and cooling systems on snowplows froze in the extreme cold. The storm also caused several water main breaks and minor power outages, disrupting daily life. Despite the severe conditions, no fatalities or property damages were reported.
- ***April 4, 1997***. A severe storm system brought freezing rain, ice pellets, and heavy snow to eastern North Dakota and western Minnesota. As temperatures dropped a blizzard moved in dropping snow at a rate of 1.5-2 inches per hour and winds gusted up to 65 mph, visibility was reduced to zero. The high winds and ice accumulation in impact zone between North Dakota and Minnesota caused thousands of livestock deaths and thousands of power poles to snap, leaving over 100,000 people without electricity. Power outages lasted over a week in some areas, forcing residents to seek shelter with generators to stay warm. Major highways, including I29 and I94, were closed. Property damage for Cass County totaled $6,000,000.

- ***November 2005***. A winter storm in the County resulted in over a foot of snow combined with wind gusts over sixty mph, creating blizzard conditions and widespread power outages and $250,000 in property damage.
- ***December 25, 2023.*** An ice storm hit the region, depositing 3-4 inches of rain over two days. This led to 0.5-1 inch of ice accumulation and strong winds, snapped trees and downed power lines, Freezing rain coated trees, roads, water systems, and electrical poles, which lead to 0.5-1 inch of ice accumulation. High winds that followed the freezing rain downed poles, leaving thousands without power, some for several days. Initial damages estimates ranged from $1 million to $2 million in Cass County alone, with total damages across the state amounting to $11.5 million across the state. Collectively, Excel Energy, Cass County Electric Cooperative, and Otter Tail Power Company report over 74 outages and 3,888 customers impacted. Cass County Electric Cooperative received mutual aid from eight outside power companies from North Dakota and Minnesota to replace hundreds of broken poles to restore power. The storm's heavy precipitation also caused rivers in the area to rise, triggering an unusual late-December flood warning for the Red River at Fargo-Moorhead. Transportation was heavily impacted, with interstate closures and flight delays the week of Christmas. This event marked the National Weather Service's first ice storm warning in the state since 2016

  The National Weather Service Wind Chill Index uses computer modeling of wind speed, temperature, heat transfer theory, and a measure of human skin tissue resistance along with certain assumptions to calculate how long it would take for frostbite to occur on humans.

  As noted in Table 3.44 extreme cold occurs in Cass County every year. https://www.weather.gov/ama/WindChill

Figure 3.44 - NWS Wind Chill Index



Source: National Weather Service

The Wind Chill Chart included here does not show the full extent of the hazard because the lowest recorded temperature in Cass County is -36F, and the highest recorded wind speed is 63 mph but could be higher. For example, a wind speed of 70mph with a temperature of -60F would result in a Wind Chill Index value of -121F.

The National Oceanic and Atmospheric Administration uses the Regional Snowfall Index (RSI) to measure snowstorms. The rating scale from 1-5 is described in Table 3.22. The index is based on the spatial extent of the storm, snowfall amounts, and their interaction with population density.

Table 3.22 - Severe Winter Storm RSI Scale		
Rating	RSI Value	Description
1	1-3	Notable
2	3-6	Significant
3	6-10	Major
4	10-18	Crippling
5	18+	Extreme

Source: NOAA

The National Weather Service (NWS) Weather Prediction Center uses the Winter Strom Severity Index (WSSI) shown in Table 3.23 to illustrate the location, intensity, and potential impacts of developing winter storms. WSSI provides a spatial assessment of societal impacts from winter storms, identifying areas with the forecasted potential for hazardous and life-threatening winter weather effects (NOAA, 2023). This tool supports forecasters, emergency managers, and the public in making informed, tactical decision about significant weather-related threats. According to NOAA (2023), WSSI is comprised of six key components of winter storms:

- **Snow amount:** Impacts due to the total snowfall or accumulation rate
- **Snow load:** infrastructure impacts due to the weight of snow
- **Ice accumulation:** infrastructure impacts due to the weight of ice
- **Flash freeze:** risk for rapid ice from sudden temperature drops during or after precipitation
- **Blowing snow:** disruption due to blowing and drifting snow
- **Ground blizzards:** travel-related impacts of strong winds interacting with pre-existing snow

Table 3.23 - Potential Winter Storm Impacts	
Winter Storm Severity	Expected Impacts
Winter Weather Area	**Expect Winter Weather.** ▪ Winter driving conditions. **Drive carefully.**
Minor	**Expect dew inconveniences to daily life** ▪ Winter driving conditions. **Use caution while driving.**
Moderate	**Expect disruptions to daily life.** ▪ Hazardous driving conditions. **Use extra caution while driving.** ▪ Closures and disruptions to infrastructure may occur.
Major	**Expect considerable disruption to daily life.** ▪ Dangerous or impossible driving conditions. **Avoid travel if possible.** ▪ Widespread closures and disruptions to infrastructure may occur.
Extreme	**Expect substantial disruptions to daily life.** ▪ Extremely dangerous or impossible driving conditions. **Travel is not advised.** ▪ Extensive and widespread closures and disruptions to infrastructure may occur. ▪ Lifesaving actions may be needed.

Source: NOAA Weather Prediction Center, 2023

The Beaufort wind scale described in Table 3.24 is a standardized system for estimating wind speed based on observed conditions, ranging from 0 (calm) to 12 (hurricane-force). It links wind speeds to visible effects on land and sea, such as tree movement, structure damage, or wave heights. For example, a Beaufort 5 (fresh breeze) corresponds to 19-24 mph winds, causing small trees to sway, while a Beaufort 10 (storm) indicates 55-63 mph winds with significant structural damage. The scale provides a practical way to describe wind intensity in various settings.

Table 3.24 – Straight Line (Beaufort) Wind Scale			
Force	Speed (MPH)	Description	Specification
0	0-1	Calm	Calm: Smoke rises vertically
1	1-3	Light Air	Direction of wind shown by smoke drift but not wind vanes
2	4-7	Light Breeze	Wind felt on face
3	8-12	Gentle Breeze	Leaves and small twigs in constant motion
4	13-18	Moderate Breeze	Raises dust and loose paper
5	19-24	Fresh Breeze	Small trees in leaf begin to sway
6	25-31	Strong Breeze	Large branches in motion
7	32-38	Near Gale	Whole trees in motion
8	39-46	Gale	Breaks twigs off trees
9	47-54	Severe Gale	Slight structural damage occurs
10	55-63	Storm	Trees uprooted
11	64-72	Violent Storm	Widespread damage
12	72-83	Hurricane	Only experienced at sea

Source: National Weather Service

PROBABILITY

Recent severe winter weather events in Cass County are summarized in Table 3.21. The county experiences over 6 event days per year. Winter storm event classification criteria and a detailed listing of events can be found in Appendix C. There is essentially a 100% annual probability of severe winter weather in Cass County.

Figure 3.45 shows the NRI for a cold wave in Cass County, which is considered “very high”.

Figure 3.45- Cass County Cold Wave Risk



Source: National Risk Index

Figure 3.46 shows the NRI for an ice storm in Cass County, which is considered “relatively high”.

Figure 3.46- Cass County Ice Storm Risk



Source: National Risk Index

Figure 3.47 shows the NRI for “winter weather”, an umbrella term for heavy snow and blizzard, in Cass County, which is considered “relatively high”.

Figure 3.47- Cass County Winter Weather Risk



Source: National Risk Index

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

There is potential for more severe winter weather in the future. With warmer overall winter temperatures, the snow water content will likely be higher, while overall snowfall amounts may increase as well. This raises the risk of heavy snowfall and/or blizzard related property damage. With higher winter temperatures, especially in the late fall and early spring, there is an increased chance of sleet and/ or ice storms, leading to a higher frequency of ice storms and crashes on the road related to ice.

LOCATION

Severe winter weather occurs at a regional level and is not a micro-climatic event. It generally occurs across the entire geographical area of the county. As noted in the Hazard Profile, the scale of its elements can vary widely, and the location of their occurrences are unpredictable.

VULNERABILITY

Population

Residents living in mobile homes or poorly insulated homes may find it difficult to adequately heat their homes during cold temperature events. Assuming 2.25 persons per mobile home, the vulnerable population estimates would be:

- Alice: 0 people (0 mobile homes)
- Amenia: 0 people (0 mobile homes)
- Argusville: 0 people (0 mobile homes)
- Arthur: 11 people (5 mobile homes)
- Ayr: 2 people (1 mobile home)
- Briarwood: 0 people (0 mobile homes)
- Buffalo: 7 people (3 mobile homes)
- Casselton: 20 people (9 mobile homes)
- Davenport: 2 people (1 mobile home)
- Fargo: 2,295 people (1,020 mobile homes)
- Frontier: 0 people (0 mobile homes)
- Gardner: 0 people (0 mobile homes)
- Grandin: 0 people (0 mobile homes)
- Harwood: 0 people (0 mobile homes)
- Horace: 68 people (30 mobile homes)
- Hunter: 0 people (0 mobile homes)
- Kindred: 34 people (15 mobile homes)
- Leonard: 5 people (2 mobile homes)
- Mapleton: 0 people (0 mobile homes)
- North River: 0 people (0 mobile homes)
- Oxbow: 0 people (0 mobile homes)
- Page: 0 people (0 mobile homes)
- Prairie Rose: 0 people (0 mobile homes
- Reile's Acres: 0 (0 mobile homes)
- Tower City: 0 people (0 mobile homes)
- West Fargo: 902 people (401 mobile homes)

Wind, ice, heavy snow, and cold temperatures can combine to create hazardous conditions and "trap" residents in their homes without heat or electricity. Elderly residents may be especially vulnerable to this hazard as they are more likely to have limited mobility, especially in the event of hazardous road conditions. The estimated number of permanent residents aged 65 or older for each jurisdiction are summarized below.

- Alice: 7 residents
- Amenia: 12 residents
- Argusville: 26 residents
- Arthur: 52 residents
- Ayr: 1 resident
- Briarwood: 11 residents
- Buffalo: 50 residents
- Casselton: 333 residents
- Davenport: 22 residents
- Fargo: 16,348 residents

- Frontier: 40 residents
- Gardner: 13 residents
- Grandin: 34 residents
- Harwood: 34 residents
- Horace: 297 residents
- Hunter: 42 residents
- Kindred: 67 residents
- Leonard: 55 residents
- Mapleton: 99 residents
- North River: 14 residents
- Oxbow: 34 residents
- Page: 38 residents
- Prairie Rose: 15 residents
- Reile's Acres: 47 residents
- Tower City: 46 residents
- West Fargo: 4,069 residents

People required to travel on a daily basis face increased road hazard. The American Community Survey (ACS) reports the labor force in Cass County is approximately 111,414 people. According to the St. Louis Federal Reserve mean commute time to work for residents in the county as recorded in the latest American Community Survey is 17.5 minutes.

Property

- It is difficult to estimate the impact of winter storms on property in the county. The most likely damages involve vehicle accidents and roof collapse due to heavy snow loads. A winter storm can also result in an increased risk of structure fire due to the use of portable heaters and fireplaces during events that involve extremely cold temperatures.
- Losses vary based on storm severity and duration, but losses to unprotected livestock can be significant during a major storm event. Winter storms in the spring season have the potential to affect calving operations.

Critical Facilities

- A winter storm event that "traps" fire and ambulance responders within the facility would severely limit the emergency response capability of the county.
- A severe winter storm event would most likely require closure of schools. A winter storm event that begins at midday could present issues for students leaving school.
- Some critical facilities lack or share a single portable emergency generator, and their operations would be hampered in the event of a power outage. Another portable generator would be very helpful to mitigate impacts of a major power outage.

Economy

- The most significant economic impact may be livestock fatalities caused by extreme blizzards with resulting economic losses for farmers and ranchers.
- Severe winter weather may prevent businesses or services from opening and result in lost wages for workers.

Future Development

- The potential vulnerability to winter weather in the County is not expected to change in the foreseeable future. There is no identified impact on future development.

EXISTING CAPABILITIES

Electricity is generally restored quickly in the event of power loss. There are several critical facilities in each jurisdiction that lack emergency power generators.

Cass County Sheriff's Department strategically places snowmobiles in Casselton to reduce the response time in inclement weather. Staff are spread out and patrols call-in citing areas that may be difficult to get to and the Sheriff's department sends a v-plow to those difficult areas.

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** Cass County averages approximately 9 days per year with a winter storm event. Severe winter weather events in the county include winter storms, high wind, heavy snow, blizzard, extreme cold/wind chill and ice storm. These events may lead to road closures.

- *Potential Action Item*: Coordinate with landowners to identify strategic locations for constructing snow fences.
- *Potential Action Item*: Continue educating residents about winter storm safety.
- *Potential Action Item*: Investigate the potential for a more distributed system of snow removal equipment.

***Key Issue*:** A winter storm event that causes a power outage may make it difficult for residents to heat their homes. Elderly residents and residents in mobile homes are the most vulnerable to extreme cold temperatures.

- *Potential Action Item*: Identify emergency warming shelter(s) and acquire back-up generator(s) to heat shelters and provide electricity during a winter storm event. Promote shelters so residents are aware of their availability.
- *Potential Action Item*: Encourage utility providers to bury electric power lines when undergoing upgrades or repairs.
- *Potential Action Item*: Organize outreach to the vulnerable populations, including establishing and promoting accessible heating centers.
- *Potential Action Item*: Conduct winter weather risk awareness activities.
- *Potential Action Item*: Obtain backup power generators for critical facilities.

Space Weather

All Jurisdictions
Overall Risk: Moderate
Probability: Possible
Impact: Limited (impact could vary widely)

Seasonal Pattern
None

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Explosion
Hazardous materials release
Human loss and injuries
Increased stress on medical services
Localized evacuation
Property damage or loss

HAZARD PROFILE

Space Weather is a direct threat to most communities because of the widespread reliance on technological systems. NASA describes space weather as all conditions and events on the sun, in the solar wind, in near-Earth space, and in Earth's upper atmosphere that can affect space-borne, and ground-based technological systems. Generally, it takes the form of particles, electromagnetic energy, and magnetic fields. Space weather events which occur in space near the earth, or its atmosphere can be classified as one of three types.

A geomagnetic storm is a major disturbance of Earth's magnetosphere that occurs when there is a very efficient exchange of energy from the solar wind into the space environment surrounding Earth.
Solar flares are large eruptions of electromagnetic radiation from the sun lasting from minutes to hours. These outbursts of electromagnetic energy travel at the speed of light, reaching the sunlit side of Earth's exposed outer atmosphere in about 8 minutes. They are sometimes called radio blackouts because the electromagnetic radiation affects the ionosphere's ability to reflect radio communications back to earth.
Coronal mass ejections (CMEs) are large eruptions of plasma and magnetic field structures from the sun.
CMEs accelerate charged particles in the solar atmosphere to very high velocities. They typically take from 1 to 3 days to reach the earth but may take as little as 18 hours. This warps the earth's magnetic fields temporarily, and also creates electrical current that seeks to flow through natural or man-made conductors.
These events can affect critical facility infrastructure and technology in various ways. Generally, they can disrupt surface-to-surface and surface-to-orbit communications. Additionally:

Strong electrical currents driven along Earth's surface during auroral events disrupt electric power grids and contribute to the corrosion of oil and gas pipelines.
Changes in the ionosphere during geomagnetic storms interfere with high-frequency radio communications and Global Positioning System navigation.
During polar cap absorption events caused by solar protons, radio communications can be compromised for commercial airliners on transpolar crossing routes.

HISTORY AND EXTENT

There are no recorded catastrophic space weather effects in Cass County or all of North Dakota. The nearest recorded storm affected Montreal, Canada on March 13, 1989, when a geomagnetic storm took out their commercial electric power for nine hours, affecting six million people. Other recorded space weather events occurred in September 1859, May 1921, May 1967, and November 2003. In February 2022 a geomagnetic storm destroyed up to 40 Starlink satellites worth over $50M.

As a reference for impact, a space weather event occurred in July 2012 that was not directed toward Earth. If it had been, the effects would have more severe than any since the September 1859 "Carrington Event." The Carrington Event impacted telegraph systems all over Europe and North America. Auroras were seen as far south as the Caribbean in the northern hemisphere. If such an event were to take place now, the effects would be far more devastating. Testimony before Congress as to the level of impact suggests the entire electrical transmission grid could be affected and power plants, substations and transformers that keep the grid operational could be destroyed. Experts disagree about the potential level of impact. Opinions range from disrupting electrical power supply for a few weeks all the way to loss of 90 percent of human lives due to failure of nearly all computer and electrical systems, and ancillary effects.

The NOAA Space Weather Prediction Center has developed three space weather scales that pertain to the physical measure of different space weather phenomena (geomagnetic storms, solar radiation storms, and radio blackouts), their frequency and their effects. Geomagnetic storms may be the most relevant to North Dakota and Cass County. The K-index in Table 3.25 sourced from NOAA Space Weather Scales, measures the disturbances in the horizontal component of earth's magnetic field with an integer in the range 0-9 with 1 being calm and 5 or more indicating a geomagnetic storm. It is derived from the maximum fluctuations of horizontal components observed on a magnetometer during a three-hour interval.

Table 3.25 – Geomagnetic Storm Scale (K Index)

Scale	Description	Physical Intensity	Average Frequency
G-5	Extreme	Kp = 9	4 days per 11-year cycle
G-4	Severe	Kp = 8	60 days per 11-year cycle
G-3	Strong	Kp = 7	130 days per 11-year cycle
G-2	Moderate	Kp = 6	360 days per 11-year cycle
G-1	Minor	Kp = 5	900 days per 11-year cycle
Not considered a storm		Kp < 5	N.A.

Table 3.26 sourced from NOAA Space Weather Scales describes the Solar Radiation Storm Scale developed by NOAA. It categorizes solar radiation storms based on the intensity of high-energy particles (protons) in Earth's atmosphere. It ranges from S1 (minor) to S5 (extreme), with each level indicating increasing impacts on technology, communication, and human health.

Table 3.26 – Solar Radiation Storm Scale

Scale	Description	Physical Measure	Average Frequency
S-5	Extreme	10^5	Fewer than 1 per 11-year cycle
S-4	Severe	10^4	3 per 11-year cycle
S-3	Strong	10^3	10 per 11-year cycle
S-2	Moderate	10^2	25 per 11-year cycle
S-1	Minor	10	50 per 11-year cycle

The Radio Blackout Scale sourced from NOAA Space Weather Scales is detailed in Table 3.27 was also developed by NOAA. This scale categorizes disruptions to high frequency radio communications caused by solar flares. It ranges from R1 (minor) to R5 (extreme). This scale helps monitor and communicate the effects of solar flares on global communication and navigation infrastructure.

Table 3.27 – Radio Blackouts Scale

Scale	Description	Physical Measure	Average Frequency
R-5	Extreme	X20	Fewer than 1 per 11-year cycle
R-4	Severe	X10	8 per 11-year cycle
R-3	Strong	X1	175 per 11-year cycle
R-2	Moderate	M5	300 per 11-year cycle
R-1	Minor	M1	2,000 per 11-year cycle

PROBABILITY

The capacity to forecast space weather events is limited. NOAA's Space Weather Prediction Center is the United States' official source of space weather alerts, watches, and warnings. Using modeling similar to that used for weather forecasting, the agency is able to predict space weather on time scales of hours to weeks. However, the degree of certainty and the magnitude of potential events leaves much to be desired, especially with respect to catastrophic events. Although no specific probability estimate has been provided by NOAA, the Royal Academy of Engineering in London, England published a report in 2013 that indicated for planning purposes an event similar to the Carrington Event is considered to be a 1-in-100-year event. One researcher published a research study in 2012 suggesting there is approximately a 12% chance of such an event happening in the next ten years (Riley,2012). On the probability of occurrence of extreme space weather events, *Space Weather*.

LOCATION

All parts of Cass County are at equal risk from a space weather event. North Dakota and Minnesota are one of four areas in the United States considered most vulnerable to solar storms according to a new USGS solar geoelectric hazard study.

VULNERABILITY

Population

Except in the case of a high intensity solar radiation storm, the direct impacts of a space weather event on people is limited. However, nearly all of the County's population relies directly or indirectly on electricity for normal, essential functions such as heating and cooling, obtaining water, waste disposal, food refrigeration, communications, and transportation. If a space weather event caused the loss of power, the impact for a short time would be an inconvenience for most, but critical to life support for a few. Loss of power for an extended period could result in significant challenges to sustain life in Cass County.

Property

The loss of electricity for a short time would primarily impact structures that are heated with electricity or protected from seepage by sump pumps in areas with high water tables. Buildings directly or indirectly dependent on electricity will likely be uninhabitable during winter months.

Critical Facilities

All critical facilities in the region rely on electrical power to function properly. Most of these critical facilities do not have a backup power source. Therefore, short term and long-term functionality of most critical facilities in the region could be reduced or destroyed. Electrical power in Cass County comes from Cass County Electric Cooperative. Although local power cooperatives have plans to get local power infrastructure up and running after such disasters, the minimum timeframe to do so is a matter of weeks or months. A major space weather event could make fixing damaged substations moot in view of other electrical grid damage and system failure. Therefore, the time to get power back could be much greater.

While CMEs like the Carrington Event could be devastating to power grids, they are thought not to endanger the functionality of electronics. However, the solar flares which often occur at the same time might have devastating effects on electronic systems. Very strong solar flares could reach earth, and when the charged particles hit something conductive, they impart that charge to the conductive object creating current on a powered line and frying components that are not protected from such an overload. One of the most significant and immediate potential impacts of a space weather event would be disruption or destruction of electronic systems used for healthcare in the region. Mitigation measures to protect or replace these electronic systems are not in place. The electronic systems of the Trinity Health facilities are not hardened to withstand such an event.

Emergency communications systems and all other communications systems are critical to emergency notification and response functions in the region and could be disrupted or destroyed by a major space weather event. Mitigation measures to protect or replace these communications systems are not in place.

Economy

To the degree that the systems of production are dependent on electrical power, their capacity to generate income would be limited.

However, the larger impact may well be on the medium of exchange. Since almost all transactions now involve electronic transfers of monetary value, if electronic systems were damaged or destroyed, the normal means of completing transactions would be lost. In fact, actual access to wealth would largely be lost.

Future Development

There are no direct impacts of space weather events on future development. Traditional development patterns would be subject to the same impacts anticipated for existing property, critical facilities, and populations.

EXISTING CAPABILITIES

There are no known capabilities in place in the county to mitigate the impacts of space weather events. However, the very rural locale of many residents of the county has necessarily required a more independent lifestyle than more heavily populated areas. These very rural locales are more likely to have redundant systems that will allow them to sustain life for extended periods of time. It is possible however in the case of a large outage rural areas will be the last to get power restored due to the primary focus being to restore the population centers power first.

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** Widespread, long-term loss of electrical power will lead to loss of life and disruption of life as we know it in Cass County.

Potential Action Item: Encourage household level preparations to mitigate the impacts of a sustained widespread power loss.

Potential Action Item: Harden electrical components and systems for critical facilities (especially emergency response services) against the anticipated impacts of a space weather event.

Potential Action Item: Develop a strategic action plan to harden medical facilities and electronic systems against the anticipated impacts of a space weather event.

Potential Action Item: Appoint a strategic planning team to consider the long-term impacts of a major space weather event and develop a strategic plan to mitigate the impacts on the region.

Wildland Fire

Table 3.28 – Jurisdictional Wildland Fire Information			
City	Overall Risk	Probability	Impact
Rural Cass County	High	Greater than 100% Chance Per Year County-Wide	Moderate
Alice	Low	Low	Low
Amenia	Low	Low	Moderate
Argusville	High	Moderate	High
Arthur	Low	Low	Low
Ayr	Low	Low	Moderate
Briarwood	Low	Low	Low
Buffalo	Low	Low	Low
Casselton	Low	Low	Low
Davenport	Low	Low	Low
Fargo	Low	Low	High
Frontier	Low	Low	Low
Gardner	Low	Low	Low
Grandin	Low	Low	Low
Harwood	Low	Low	Low
Horace	Low	Low	Low
Hunter	Low	Low	Low
Kindred	Low	Low	Low
Leonard	Low	Low	Low
Mapleton	Low	Low	Low
North River	Low	Low	Low
Oxbow	Low	Low	Low
Page	Low	Low	Low
Prairie Rose	Low	Low	Low
Relies Acres	Low	Low	Low
Tower City	Low	Low	Low
West Fargo	Low	Low	Low

Seasonal Pattern
March – November

Duration
Hours to weeks

Primary Impacts
Agricultural loss (crops, livestock)
Blocked roads
Economic loss
Explosion
Hazardous materials release
Human loss and injuries

Increased stress on medical services
Localized evacuation
Property damage or loss
Reduced air quality

HAZARD PROFILE

Wildfire is an unplanned fire, a term which includes grass fires, forest fires and scrub fires either human-caused or natural in origin.

Wildfires pose increasing threats to people and their property as communities develop in the wildland-urban interface. The wildland-urban interface refers to areas where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. The threat exists anywhere that structures are located close to natural vegetation and where fire can spread from vegetation to structures, or from structures to vegetation.

The three major factors that affect the occurrence and severity of wildfires are the fuels supporting the fire, the weather conditions during a fire event and the topography in which the fire is burning. These factors affect and increase the likelihood of a fire starting, the speed and direction in which a fire will travel, the intensity at which it burns, and the ability to control and extinguish it. At the landscape level, both topography and weather are beyond our control. Fuel is the only factor influencing fire behavior that humans have the ability to manage.

Wildfire smoke can significantly impact the health of both people and animals, often affecting areas far beyond the fire itself. For instance, in the summer of 2023, Cass County faced several days of diminished air quality due to wildfires in Canada, according to Air Now.

To safeguard public health, the EPA uses the Air Quality Index (AQI) to track five major air pollutants regulated under the Clean Air Act. These pollutants, each governed by standards set by the EPA to protect public health, include:

- Ground-level ozone
- Particle pollution (also known as particulate matter, including PM2.5 and PM10
- Carbon monoxide
- Sulfur dioxide
- Nitrogen dioxide

Additionally, post-wildfire environments can give rise to other health concerns, such as West Nile Virus, which thrives under such conditions. As the leading mosquito borne disease in the continental U.S., West Nile Virus benefits from the warmer temperatures that often follow wildfire, making virus transmission more efficient (U.S. DHHS, 2023). Accordioning to the ND Department of Tourism (2023), wildfires tend to occur during the warmer months thereby extending the virus' transmission season and increasing the likelihood of outbreaks. (Sourced heavily from the NDDES EHP 20244)

HISTORY AND EXTENT

Wildland fire occurrences data is difficult to compile because of the disparate sources. The Interagency Fire Program Analysis fire-occurrence database, compiled by Karen C. Short of the USDA Forest Service, Rocky Mountain Research Station is sourced from multiple reporting agencies; however, due to reporting limitations, it should not be considered an all-inclusive list. According to the database, there were 120 wildfires between 2012 and 2020 in Cass County. The largest was 25 acres in 2020.

Debris and open burning are the most common cause of wildland fires reported by fire protection districts Cass County.

The extent of a wildfire refers to the geographic area that the fire affects. It includes the total land area over which the fire is spreading or has spread. The extent can widely vary depending on factors such as but not limited to the size of the ignition source, wind, terrain, the type of vegetation, and the effectiveness of response efforts. The National Wildfire Coordination Group uses the Fire Size Class Code to measure wildland fires (see Table 3.29). It is rated A-L. Historically, the largest wildfires in Cass County have been Class F and Class G fires.

Table 3.29 – Fire Size Class Code	
Value	Description
A	> 0 but ≤ 0.25 Acres
B	0.26-9.9 Acres
C	10-99.9 Acres
D	100-299 Acres
E	300-999 Acres
F	1000-4999 Acres
G	5000-99999 Acres
H	10000-49999 Acres
I	50000-99999 Acres
J	100000-499999 Acres
K	500000-999999 Acres
L	1000000+ Acres

Source: NWCG, 2024

The Air Quality Index (AQI), shown below in Figure 3.48, functions on a scale from 0 to 500, where higher values indicate greater air pollution and more serious health risks. For instance, an AQI of 50 or below signifies good air quality, while a value over 200 signals hazardous conditions.

For each pollutant, an AQI of 100 typically represents the concentration level that matches the short-term national ambient air quality standard designed to protect public health. AQI levels at or below 100 are considered acceptable, but when the AQI rises above 100, air quality becomes unhealthy – first for sensitive groups, and eventually for everyone as the values increase.

The AQI is broken down into six categories, each representing a different level of health concern. Each category is also assigned a specific color, making it easy for the public to quickly assess whether air quality in their area is becoming harmful. Source: Air Now

Figure 3.48 – Air Quality Index

AQI Basics for Ozone and Particle Pollution

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

Source: AirNow

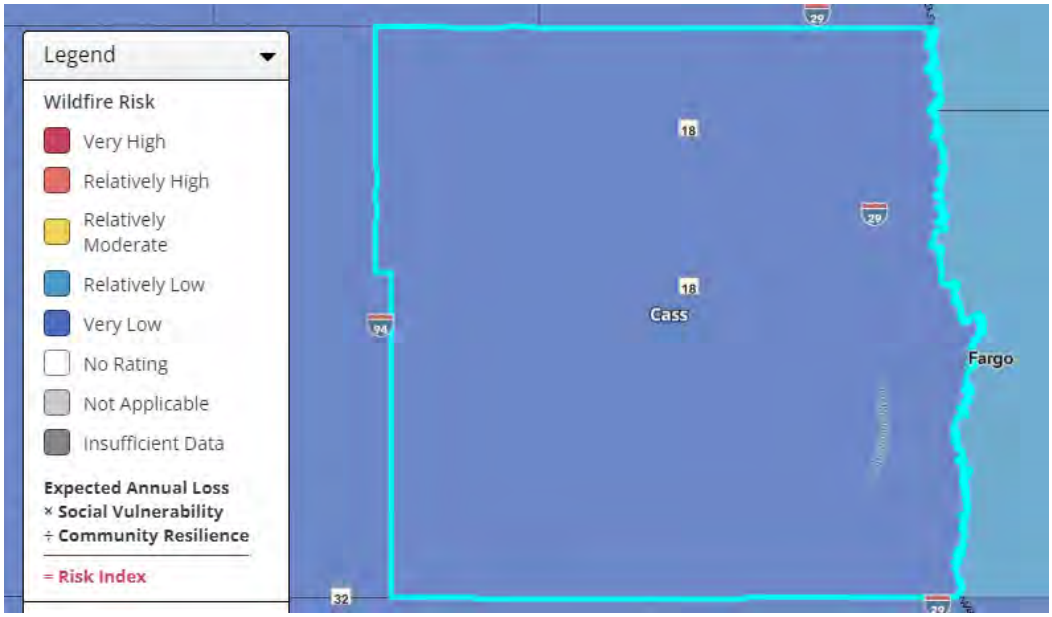
PROBABILITY

In 2009 the North Dakota Forest Service developed a wildfire risk assessment for every county in the state based on wildfire occurrence, fire department response capabilities and weather. The assessment ranked Cass County as having a low risk for wildfire.

Predominate fuel types are classified using the 13 standard fuel models for fire behavior by Anderson. Much of the county is agricultural land, which the Anderson models do not consider to be a significant fuel; however, in times of drought or during harvest season agricultural fields may present a wildfire risk. The most prevalent fuel in the county is grassland. Grassland fires generally burn with a low intensity but can spread quickly. Grasslands are most heavily concentrated in the central and south-central portion of the county. Based on the statistics noted previously, if the fire district reported incidents are representative of the other four fire districts, an average of 86 wildland fires occurs annually in Cass County. There is not enough data to estimate the probability of a wildland fire of 100+ acres. Given the information on wildland fires from the Fire Program Analysis database, the actual incidence of wildland fires and average size of wildland fires may be significantly higher.

Figure 3.49 shows the NRI for wildfire, the risk is considered “very low” in Cass County.

Figure 3.49- Wildfire Risk Cass County



[Map | National Risk Index (fema.gov)]

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Wildland fire risk rises due to the previously mentioned hotter and dryer summer, along with a parched landscape and drier fuels. This adds risk to rural residents that may be surrounded by grass and brush, and in the fall, dry crops. There is the potential for wildland fire impacts even if the fires are not local. Large fires in Canada and Montana have sometimes resulted in lingering smoke in North Dakota that can impact people’s health, especially those with respiratory illnesses.

Over the next century, global temperatures are expected to rise, though the extent will vary by season and location. In the United States, average temperatures are projected to increase by 3 to 10 degrees Fahrenheit. Under current models, winters are likely to become milder with less snow, while summer temperatures will continue to climb. While predicting changes in rainfall is more challenging, it’s expected that precipitation will decrease in the Northwest, Midwest, and Great Plains.

The US Forest Service predicts the following impacts due to climate change:

- More frequent and widespread wildfires
- Increased issues with pests, insects, and diseases affecting tress and crops
- Declining snowpack in mountainous areas due to warmers winters and reduced snowfall
- Shifts in plant and animal habitats moving northward to adapt to rising temperatures
- Strained watershed facing more frequent droughts, increased pest and fire activity, and river ecosystem disruptions

LOCATION

Historically, the greatest incidence of wildland fires has been clustered generally around the cities of Agrusville, Harwood, and Mapleton. See Figure 3.50. The wildland-urban interface identifies risk areas where fire can spread from vegetation to structures, or from structures to vegetation. Any areas where structures are located within or adjacent to wildland environments can be included within the wildland-urban interface. This includes all rural structures in Cass County and structures along the edges of each city.

VULNERABILITY

Population

- Residents of non-urbanized areas (in the wildland-urban interface) are generally at a higher risk of wildfire. According to Census Bureau estimates, there are approximately 184,525 residents in the county; of these, an estimated 11,482 live outside of an incorporated city. Assuming approximately 10 percent of residents in incorporated cities live along or near the wildland-urban interface, 5,844 additional residents are vulnerable to wildfire. Using these estimates, approximately 17,326 residents (25 percent of total population) in the county are vulnerable to wildfire. The estimated at-risk population in each city is as follows:

- Alice: 4 residents
- Amenia: 18 residents
- Argusville: 57 residents
- Arthur: 34 residents
- Ayr: 2 residents
- Briarwood: 6 residents
- Buffalo: 14 residents
- Casselton: 250 residents
- Devenport: 25 residents
- Fargo: 13,388 residents
- Frontier: 18 residents
- Gardner: 7 residents
- Harwood: 76 residents
- Hunter: 28 residents
- Kindred: 96 residents
- Leonard: 26 residents
- Mapleton: 115 residents
- North River: 5 residents
- Oxbow: 35 residents
- Page: 19 residents
- Prairie Rose: 4 residents
- Reile's Acres: 91 residents
- Tower City: 30 residents
- West Fargo 3,865 residents

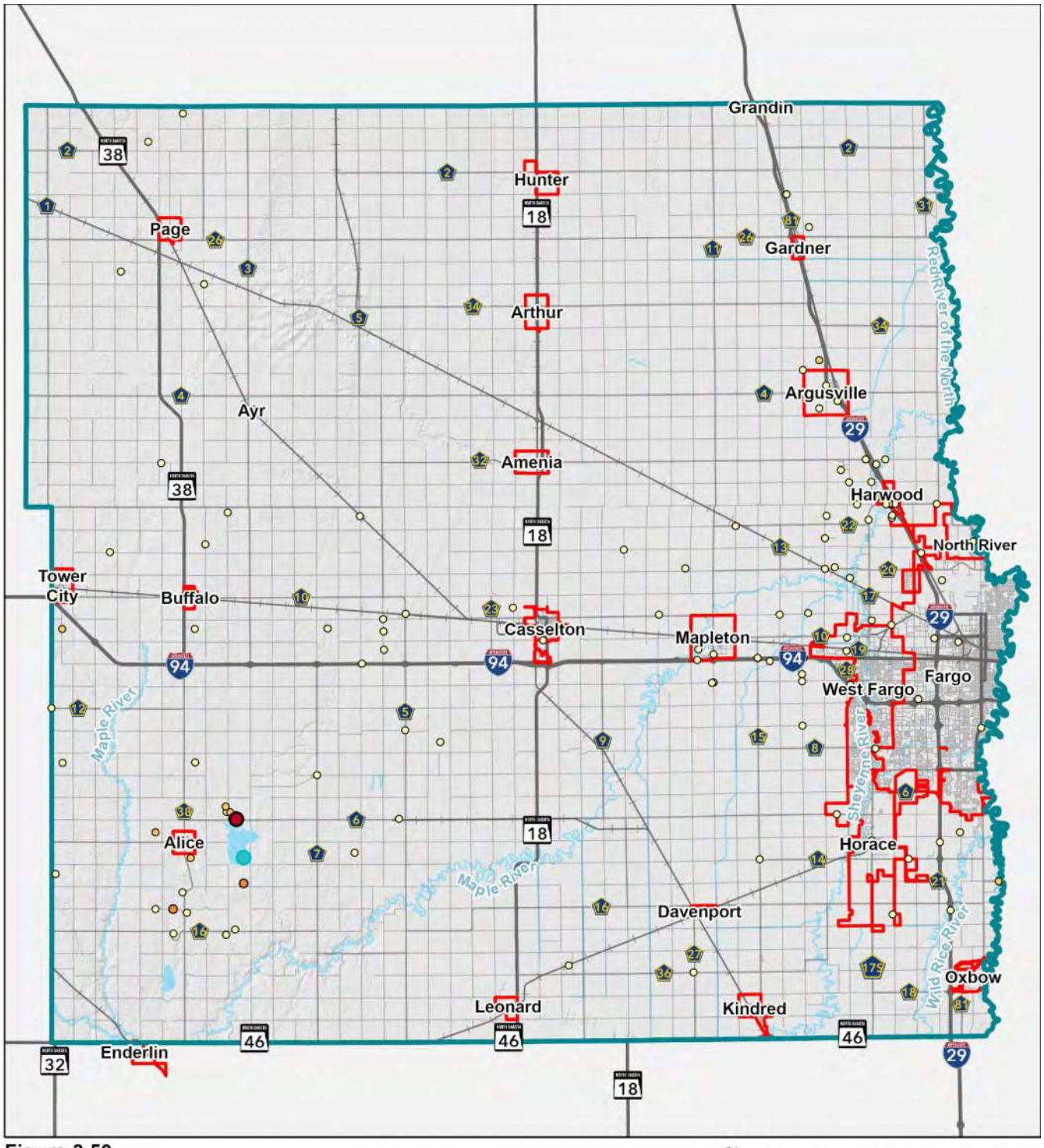


Figure 3.50
Wildfires

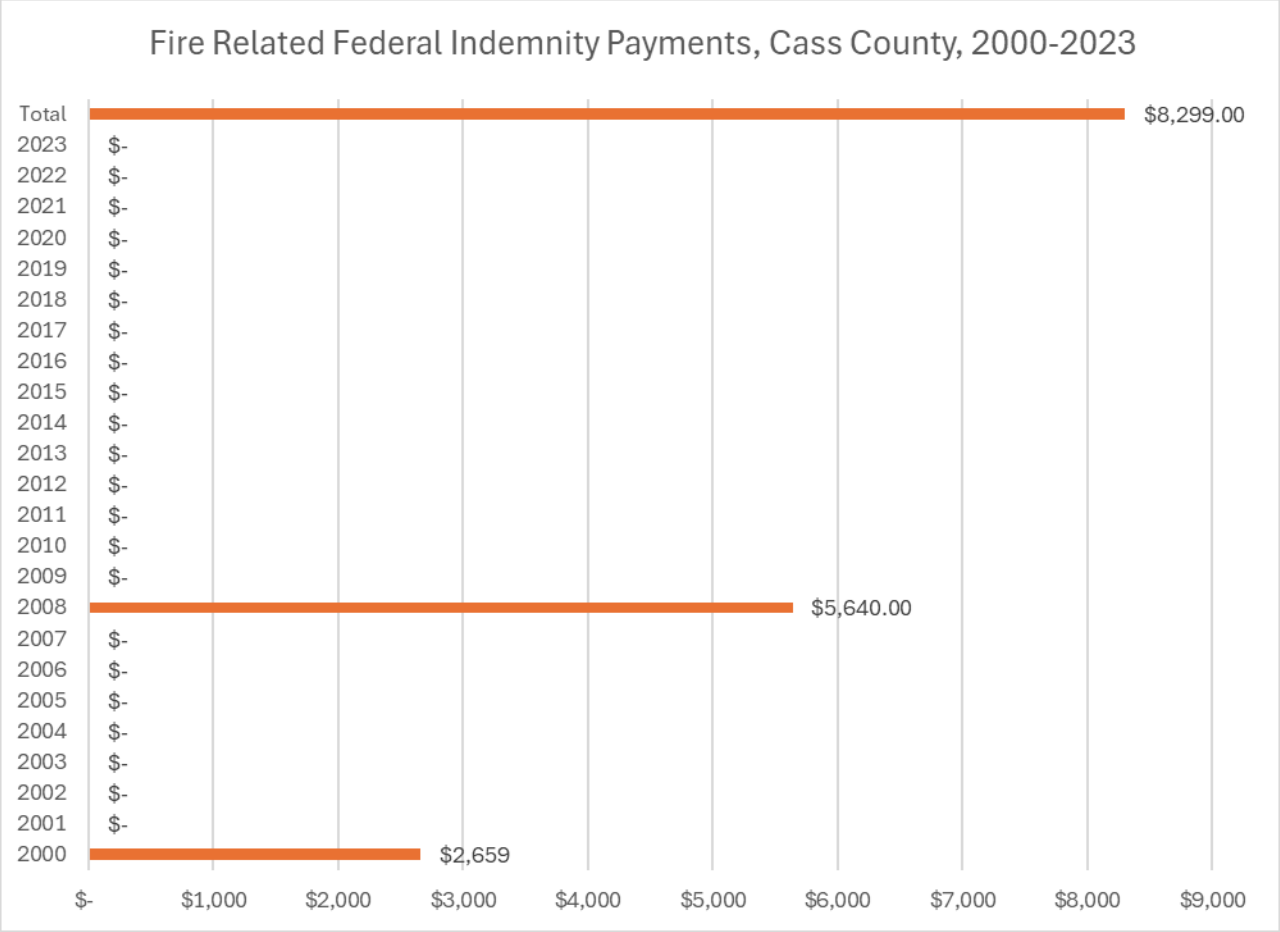
Fire Size (Acres)

- 0.1 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 - 100.0
- 100.1 - 648.0

Property

- The statewide Multi-Hazard Mitigation Plan includes information about crop indemnity payments from the USDA Risk Management Agency. Records of wildfire-related crop indemnity payments in Cass County between 1989 and 2023 only show payments in 2000 and 2008 (See Figure 3.51).

Figure 3.51 – Fire-Related Federal Indemnity Payments, Cass County, 2000-2023



Source: National Drought Mitigation Center (USDA Risk Management Agency 2018-2024)*

- There are no detailed records of property damage in Cass County due to wildfire. From 1992-2018, the largest fire reported in Cass County was 648 acres in 2002.

Critical Facilities

- Nearly all the County's critical facilities are within urbanized areas which are considered defensible space for wildfire. There are no critical facilities within 100 yards of the edge of Alice, Amenia, Argusville, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo. Beyond these community areas, there are a few critical facilities at risk from wildfire: Northern Cass Public School 6 miles west of Gardner and the Wheatland Colony School east of Tower City.

Economy

- There are no overall estimates for the level of impact of wildland fires on the Cass County economy. However, wildland fires can burn through large swaths of cattle grazing land and eliminate pastureland for farmers and ranchers using it for over a year.

Future Development

- The Cass County regulations do not include any provisions that specifically address wildfire. Such regulations could include defensible space standards, road access, and adequate water supply.

EXISTING CAPABILITIES

- The Cass County Emergency Management Department collaborates with local fire districts to assess wildfire risk levels and makes recommendations to the Cass County Board of County Commissioners on burn restrictions. The Board of Cass County Commissioners can declare a fire emergency and burn ban for the County. Violating a burn ban could result in a Class B Misdemeanor charge with max penalties of 30 days in jail and up to a $1,500 fine.

  Wildfire response in the county is coordinated with several fire districts. District boundaries are shown in Figure 3.52.

  - Alice Fire Protection District
  - Alice Rural Fire District
  - Argusville Fire Protection District Station
  - Argusville Rural Fire District
  - Arthur Rural Fire District
  - Arthur Rural Fire Protection District Station
  - Buffalo Fire Department
  - Buffalo Rural Fire District
  - Casselton Fire Department
  - Davenport Fire Station
  - Davenport Rural Fire District
  - Enderlin Rural Fire District
  - Erie Rural Fire Department
  - Fargo Fire Department Headquarters Station
  - Fargo Fire Department Station 2
  - Fargo Fire Department Station 3
  - Fargo Fire Department Station 4
  - Fargo Fire Department Station 5
  - Fargo Fire Department Station 6
  - Fargo Fire Department Station 7
  - Galesburg Rural Fire District
  - Grandin Rural Fire District
  - Grandin Rural Fire Protection District Station
  - Horace Rural Fire District
  - Hunter Rural Fire District
  - Hunter Volunteer Fire Department
  - Kindred Community and Rural Fire District
  - Kindred Community and Rural Fire Protection District
  - Leonard Fire Department
  - Leonard Rural Fire District
  - Mapleton Volunteer Fire Station
  - North Dakota Air National Guard Fire Department Hector Field
  - Page Fire Protection District
  - Page Rural Fire District
  - Southern Valley Fire and Rescue Station

- Tower City Fire Protection District
- Tower Rural Fire District
- West Fargo Fire Department
- West Fargo Fire Department South Station
- West Fargo Rural Fire District

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** Cass County experienced at least two 100-acre or greater fires between 1992-2023 and experiences a wildfire greater than 100 acres approximately once every 16 years. Most large wildfires in the county cause minimal property damage.

- *Potential Action Item*: Educate residents about defensible space and controlled burn best practices.
- *Potential Action Item*: Incorporate wildland-urban interface guidelines into the county's zoning and subdivision regulations.
- *Potential Action Item*: Implement a fuels management system to decrease hazardous vegetative fuel on public land and near essential infrastructure.

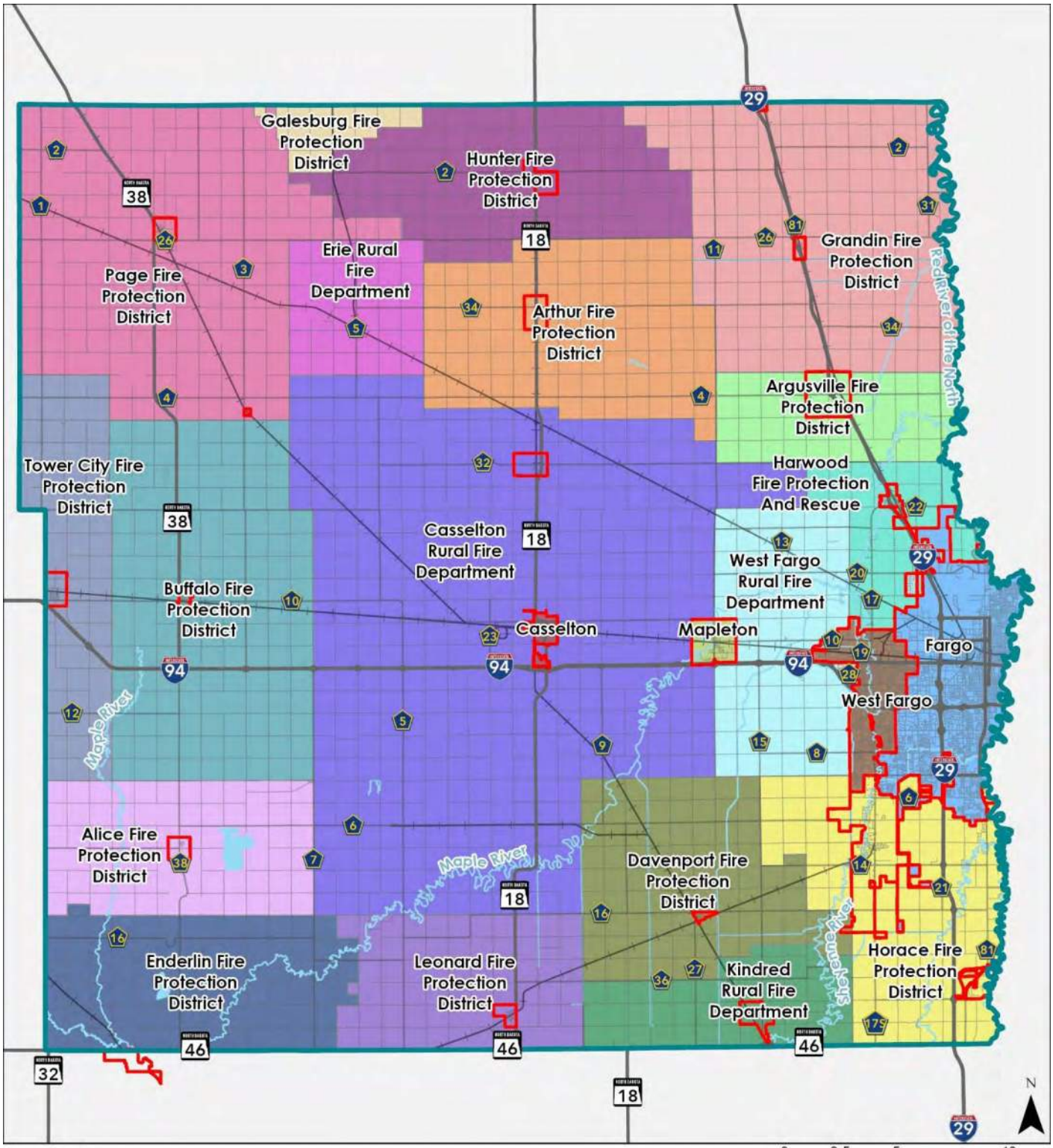


Figure 3.X
Cass County Fire Districts

- Incorporated City Boundaries

Fire Protection District

- Alice Fire Protection District
- Argusville Fire Protection District
- Arthur Fire Protection District
- Buffalo Fire Protection District
- Casselton
- Casselton Rural Fire Department
- Davenport Fire Protection District
- Enderlin Fire Protection District
- Erie Rural Fire Department
- Fargo
- Galesburg Fire Protection District
- Grandin Fire Protection District
- Harwood Fire Protection And Rescue
- Horace Fire Protection District
- Hunter Fire Protection District
- Kindred Rural Fire Department
- Leonard Fire Protection District
- Mapleton
- Page Fire Protection District
- Tower City Fire Protection District
- West Fargo
- West Fargo Rural Fire Department

Criminal/Terrorist Attack

All Jurisdictions
Overall Risk: Low
Probability: Low
Impact: Moderate

Seasonal Pattern
None

Duration
Varies

Primary Impacts
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation
Property damage or loss
Release of hazardous materials
Structure collapse

HAZARD PROFILE

For the purposes of this profile, criminal/terrorist Attack includes chemical attacks, biological attacks, radiological attacks, nuclear attacks, explosive attacks, food/food production attacks, armed assaults, and civil disturbances. These can broadly be defined as any intentional adversarial human-caused incident, domestic or international, that causes mass casualties, large economic losses, large infrastructure damage or widespread panic in the country. Such attacks can result in a variety of hazards. For example, terrorists might compromise a dam leading to catastrophic dam failure. Other hazards that can be intentionally initiated by human actions given the appropriate materials and motivation include infectious disease, transportation incidents, hazardous material releases, utility or communication failures, cyberattacks, and wildland fires. [p54, 2019 ND Enhanced Mitigation Mission Area Operations Plan]

The FBI categorizes terrorism into two types: international and domestic. International terrorism involves violent acts by individuals or groups inspired or connected to foreign terrorist organizations or state sponsors, aiming to intimidate or coerce populations or governments. Domestic terrorism, while also intended to influence or intimidate populations or governments, these violent acts are driven by domestic ideologies such as political, religious, social, or environment (FBI, 2023).

A growing concern within domestic terrorism is domestic violence extremism (DVE), which includes racially or ethnically motivated extremists and anti-government extremists, identified as some of the most lethal threats today. The FBI has reported a significant increase in DVE investigations since 2020, highlighting a trend in violent incidents, such as the July 14, 2023, attack on Fargo police officers, demonstrating the severe consequences of organized extremist acts.

The evolution of terrorist threats increasingly involves lone offenders – individuals acting independently without direct ties to larger terrorist organizations. Lone offenders, also known as lone wolf terrorists, are individuals who commit acts of violence independently, without direct orders or connections to establish groups. Often radicalized online, these bad actors, motivated by various ideological beliefs and personal grievances, can quickly mobilize to violence making their actions highly unpredictable (FBI, 2023). Their independent operation and lack of clear affiliations add a layer of complexity to the DVE landscape, posing a significant challenge to counterterrorism efforts.

The threat of terrorism often intersects with civil disturbances, as both involve acts that disrupt public order and threaten community safety. While terrorism is driven by ideological motives, civil disturbances can occur when large groups, organizations, or distraught individuals act with potentially debilitating or disruptive results. Many issues can cause civil disturbance, but most are due to political grievances, economic disputes or social discord, terrorism, or foreign agitators.

While peaceful protests typically cause little to no disruption, violent riots can lead to severe consequences, including loss of life, destruction of property, and damage to infrastructure. Civil disturbances are criminal actions and not protected by the 1st Amendment. Forms of civil disturbances may range from groups blocking sidewalks, roadways, and buildings to mobs rioting and looting to gang activity. They can be either spontaneous or planned events. [p47, 2019 ND Enhanced Mitigation Mission Area Operations Plan]

Events that can be classified as criminal terrorist nation attack have been very limited in North Dakota. Threats to or in North Dakota of criminal/terrorist attacks are a reality which may not be commonly recognized. Between 2018 to 2022, there have been 10 Terrorist Screening Center hits or encounters within North Dakota, three of which have occurred in Cass County. In that same time period, the NDSLIC passed 27 reports of possible nexus to terrorism onto the FBI for potential investigation. [pg. 646, 2024 ND Enhanced Mitigation Plan Draft]

Examples of these potential criminal/terrorist attacks include bomb threats and an oil pipeline shutoff. The type and scope of such incidents can vary dramatically as illustrated by the following examples.

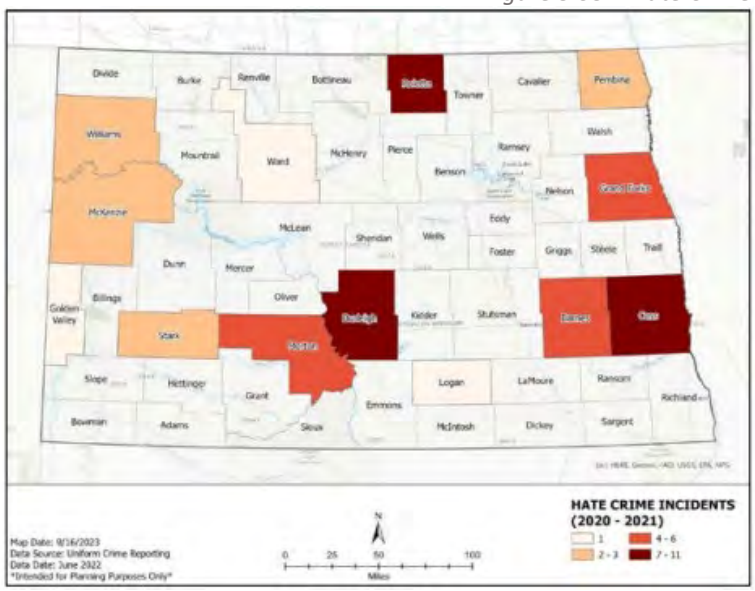
- **May 12, 1969**. Zip to Zap event. This event was initiated as a large-scale party during a college break but turned into a riot when tensions arose between students and authorities.
- **January 21, 1995**. Attack on the underground phone cable system in Fargo. This attack caused $1 million in damage and interrupted phone service for 20,000 people.
- **September 11, 2001**. Attack on the World Trade Center and the Pentagon. This attack killed 2,977 people and injured thousands more, as well as causing billions in damages, and disrupting business and government activities throughout the United States.
- **2016**. Dakota Access Pipeline (DAPL) event. This event was initiated when grassroot Native American protestors gathered to express their opposition to the construction of the pipeline. It turned into multiple criminal activities including rioting, vandalism, theft, criminal trespass, terroristic threats, and arson. While the event started with a few hundred protestors it grew into a group estimated at nearly 10,000 participants.
- **May 2020**. Downtown Fargo Riot. The March for George Floyd protest that began peacefully in the afternoon turned into a riot when occupied police cars were attacked and property was vandalized. Taxpayer costs were estimated at $842,000.
- **July 14, 2023.** An assailant attacked police responding to a car accident along his presumed way to downtown where a mass gathering was occurring. One officer was killed, two officers were injured, and a civilian bystander was injured during the attack.

Despite the Zip to Zap event and the DAPL event occurring in rural locations, they turned into large-scale events requiring law enforcement capacity significantly beyond local resources. Neither event had been anticipated, and local resources were quickly overwhelmed. Communication channels are so immediate and widespread that similar events can be initiated with little to no advance warning to local law enforcement officials.

Impacts from criminal/terrorist attacks can range from using up limited budgets for local law enforcement to property damage or destruction to potential injury and loss of life. The cost of responding to the DAPL event has been estimated at about $38 million. Other potential impacts may include disruption of transportation systems and environmental damage.

Hate crimes are a concern for the County. The FBI's Uniform Crime Reporting (UCR) Program defines a hate crime as a criminal offense motivated, in whole or in part, by the offender's bias against a race, religion, disability, sexual orientation, ethnicity, gender, or gender identity. Even if offenders misidentify their victims' characteristics, the offense is classified as a bias crime if motivated by prejudice. Commonly reported hate crimes include destruction, damage, or vandalism; intimidation; and simple assault. As indicated by the 2024 Enhanced Multi Hazard Mitigation Plan's map in Figure 3.53, Cass County experienced seven to eleven hate crime incidents that were reported between 2020 and 2021. Addressing these incidents as part of the criminal/terrorist attack hazard profile highlights the broader spectrum of threats to community safety and the need for inclusive strategies to mitigate such risks.

Figure 3.53 – Hate Crime Incidents



PROBABILITY

As documented in the previous subsection, there have been criminal/terrorist attacks in North Dakota. There is no known calculated probability for these incidents in Cass County. However, it is instructive to consider the results of an FBI study of active shooter incidents in the United States between 2000 and 2013. Key findings of the study include:

- Over 66% of the incidents studied ended before law enforcement arrived and could engage the shooter.
- The frequency of the incidents increased over time.
- In almost every case the shooter acted alone.

As Fargo is the largest population center in North Dakota, and historically civil disturbances have occurred more in large population centers, there is a realistic potential for similar events to happen in the County.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

The North Atlantic Treaty Organization (NATO) has recognized climate change as a threat to security since 1969, it is however a non- traditional threat. Climate change could impact criminal/terrorist attacks due to the increased political tension it can cause. Climate change can increase the effects of droughts, famine, and extreme hazards. These extreme events can exacerbate an already tense political atmosphere leading to a criminal terrorist nation attack.

LOCATION

The FBI study noted previously found that while the greatest frequency of incidents were in commercial areas or educational settings, there have been incidents that have occurred in open spaces, government facilities, houses of worship, residences, and health care facilities. Additionally, these events happened in very rural and very urban settings, and both indoors and out of doors. For this analysis, all areas of Cass County are equally at risk.

VULNERABILITY

Population

- The number of residents vulnerable to criminal terrorist nation attack is highly variable based on the site and timing of an event. A large-scale incident, similar to the DAPL event, would have the potential for hundreds of injuries or fatalities.
- The largest concentration of resident population in Cass County is the City of Fargo.

- With the right provocation or initiative, a criminal terrorist nation attack can happen anywhere. Therefore, the entire population of the County could be considered vulnerable.
- Terrorist and Nation/State attacks are commonly aimed at major population centers where the degree of impact may be more significant. Some types of such attacks may have nation-wide impacts that do affect the region. However, criminal attacks may result from different motivations, be less predictable, and more likely in rural areas. The active shooter type incident is completely unpredictable and could happen at any location.

Property

- As illustrated by the Fargo event, damage in an urban setting can result in damages in the hundreds of thousands of dollars.

Critical Facilities

- Because of the historical precedence in North Dakota, it is not safe to rule out any location or critical facility from being potentially impacted by a criminal terrorist nation attack.
- Local government facilities, including the county courthouse and each city hall, may be attractive targets. Other potential targets include schools, and energy production, processing, and transport facilities.

Economy

- If a major Criminal/Terrorist attack were to occur in Cass County, depending on the type of attack and resulting damage, it could have devastating impacts to the local economy. If certain critical facilities were damaged or destroyed it could hamper the ability for normal civilian functions to occur for several months. Although the impacts of a criminal incident are likely to have less long-term or wide-spread impacts, even those like the Fargo phone system attack noted previously can significantly impact individual businesses or property owners.

Future Development

- Criminal/terrorist attacks are not constrained by location or age of development. However, proposals for certain types of controversial uses are more likely to precipitate criminal terrorist nation attacks than typical development proposals. The county's overall vulnerability to criminal/terrorist attacks is not expected to change in the foreseeable future.

EXISTING CAPABILITIES

The primary response capabilities in Cass County are the Sheriff Department and police departments of Fargo and West Fargo. There are also ND Highway Patrol stations in Fargo and West Fargo that serve the surrounding region. The FBI has a satellite office in Fargo. Targeted violent threats are evolving and a priority for the County and its jurisdictions departments like IT, law enforcement, dispatch, fire, and public works.

Cass County is part of a recently formed task force called the Cass Clay Threat Assessment Threat Management Team among a network of 25 agencies and community partners to assess and address potential threats before they escalate to violence. The team focuses on three key areas: improving information sharing among agencies, providing training to identify and intervene with individuals on a pathway to violence, utilizing community resources for support. The team includes mental health professionals, and attorneys, allowing a multi-disciplinary approach to threat management. Since the beginning of 2024, the team reviewed 16 cases, address needs such as prosecution, mental health commitments, or providing housing resources. With a foundation built upon collaboration, the team's focus is on proactive prevention to save lives and strengthen community safety (Fargo Inforum, 2025).

Public schools and healthcare partners now use ALICE training, which emphasizes gathering information before acting, replacing the traditional Run-Hide-Fight approach. First responders and critical facilities have implemented advanced security measures, such as badge readers and systems to track violent patients. Horace has bolstered its emergency response capabilities with new tactical gear, while West Fargo has added traffic light cameras and increased surveillance in The Lights parking garage. The City of Fargo has expanded its IT staff to strengthen technological resilience and purchased three towers and microcells to improve event connectivity at the Red River Valley Fairgrounds. (IT IPP and Healthcare IPP)

KEY ISSUES AND POTENTIAL ACTION ITEMS

Protecting mass gatherings is a key priority for Cass County, as identified in their 2024 Integrated Preparedness Plan. The threat of DVE, which includes incidents at mass events, is a significant concern for special event emergency operations. These operations are resource intensive, require meticulous planning and coordination amongst event organizers, community partners, and local government to ensure public safety and preparedness for potential emergencies. The escalating frequency and intensity of DVE events emphasis each jurisdiction's responsibility to remain aware of the evolving threat landscape. This necessitates prioritizing and implementing robust security measures and strengthening cross-organizational communication and information sharing to effectively mitigate these threats and increase public safety.

Key Issue: Civil disturbances are an ongoing concern, but it is unlikely that a large-scale event will occur in the County. The key issue for civil disturbance is unpredictability and the high cost of incident response.

- *Potential Action Item*: Develop a collaborative approach to assessing risk and mobilizing needed resources for civil disturbances.
- *Potential Action Item*: Enhance security measures at critical facilities.
- *Potential Action Item*: Develop open communication practices between all potential responders to improve readiness for preventing or responding to civil disturbances.
- *Potential Action Item*: Promote ICS and NIMS training for first responders and local organizations to reduce chaos by improving communication during and after incidents. (Fire IPP meeting)

Key Issue: The most likely Criminal Terrorist Nation Attack incident affecting the region is a criminal attack such as an active shooter.

- *Potential Action Item*: Develop educational materials on best practices to enhance security at locations with perceived risk of such attacks and encourage their implementation.
- *Potential Action Item*: Assess safety/security at oil/gas facilities.
- *Potential Action Item*: Upgrade security cameras at K12 schools where needed.
- *Potential Action Item*: Assess safety/security at critical facilities throughout the County, including water treatment plants.

Cyberattack

All Jurisdictions
Overall Risk: Moderate
Probability: Moderate
Impact: Moderate (impact could vary widely)

Seasonal Pattern
None

Duration
Varies

Primary Impacts
Economic loss
Property damage or loss (data property)
Disruption of critical services
Human loss and injuries

HAZARD PROFILE

"Cyberattack is the attack or hijack of information technology infrastructure critical to the functions controlled by computer networks, such as operating, financial, communications, and trade systems. Any cyberattack that creates unrest, instability, or negatively impacts confidence of citizens/consumers can be considered cyberterrorism. Computer security incidents are an ongoing threat and require due diligence to address accordingly to mitigate any potential disruption to critical infrastructure. There are seven common types of cyberattacks that governments, businesses, and people are at risk too, as described below.

Socially engineered malware. A normally trusted site is compromised, and the attackers embed malware into the site. Users of the site are tricked into downloading malware onto their computers through a Trojan Horse.

Password phishing attacks. Emails are designed to look like they are from trusted vendors and users are prompted to enter their passwords to access the content from the email. The site the user is taken to saves the password the user provides, which attackers can use to access the real site and the user's information.

Unpatched software. Cyberattackers can access software on users' computers if the software patches are not up to date.

Social media threats. Friend or application installation requests are designed to mask malware or phishing attempts. Users who accept these requests are tricked into providing their email, downloading malware, or otherwise giving cyberattackers access to their computer and data.

Advanced persistent threats. Cyberattackers gain access to an organization's data using phishing or Trojan Horse attacks. These attacks typically target multiple employees to trick at least one into providing their password or downloading the malware.

Distributed denial of service. An attack in which multiple compromised computer systems attack a target, such as a server, website or other network resource and cause a denial of service for users of the targeted resource.

Doxing. Discovery and release of personally identifiable information.

To ensure a quick and proper response to cyberattacks, systems vulnerable to cyberterrorism should have an incident response plan to minimize negative impacts." [p66, 2019 ND Enhanced Mitigation Mission Area Operations Plan].

HISTORY

The Grand Fork's Herald stated in 2022 North Dakota experiences 4.5 billion cyberattacks per year. There have been documented incidents of cyberattacks in Cass Count. There were several known large-scale cyberattacks in North Dakota in recent years.

March 7, 2014. Malware discovered on North Dakota State College of Science computers potentially exposed the personal information of up to 15,000 current and former students. Earlier that same year, a separate breach at the North Dakota

University System compromised data for approximately 290,000 current and former students and 780 faculty and staff members. While both incidents involved unauthorized access to sensitive information, they were unrelated and employed distinct methods of attack (Forum News, 2014) (2024 Enhanced Multi-Hazard Mitigation Plan).
November 18, 2016. DAPL event doxing. Unknown individual(s) discovered and released personally identifying information of law enforcement officers who were part of the response to the DAPL event.
October 9, 2017. UND website distributed denial of service. The UND website was flooded with so many incoming queries that it became unresponsive and was no longer functional to legitimate users.
August 2021. A cyberattack attempted to target DMS Health Technologies, a vendor associated with Sanford Health but was ultimately unsuccessful. Despite the failure of the attack, data included patient names, birthdates, and service dates for around 21,000 individuals was accessed. With Sanford Health operating 46 hospitals concentrated in the Dakotas, a successful breach could have severely impacted the region's healthcare services (Fargo Forum, 2021) (2924 Enhanced Multi-Hazard Mitigation Plan).
June 2022. Workforce Safety & Insurance (WSI) in Fargo, experienced a cybersecurity breach affecting the personal data of 182 individuals. The incident began when a WSI employee opened a phishing email attachment, triggering an unusual computer activity. The computer was promptly secured and removed from the state network. A forensic investigation by the North Dakota Information Technology (NDIT) Cyber Analysis and Response team confirmed that the attack was isolated to a single device and did not spread further. However, the attacker assessed personal information contained in the employee's email, exposing sensitive data related to injured employees (Valley News Live, 2024).

PROBABILITY

According to a Clark School [University of Maryland] study, every 39 seconds there is a hacker attack on computers with internet access with the result of affecting one in three Americans every year.
According to an online article published on the Business2Community.com website, the cybersecurity firm BlueVoyant published a report in August 2020 finding that state and local governments have seen a 50% increase in cyberattacks since 2017. The report outlined cyberattacks as either targeted intrusions, fraud, or damage caused by hackers. BlueVoyant noted that the 50% increase in attacks is likely a fraction of the true number of incidents because many go unreported.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Climate change may impact cyberattacks similarly to how it may impact crime due to the increase in political pressures. However, there is no definite evidence that cyberattacks will increase due to climate change.

LOCATION

A cyberattack could occur or impact any location in the County. It could occur anywhere in the United States and potentially still have impacts to the County and its people, businesses, governments, and infrastructure. Such attacks can be small scale and localized or affect major segments of the United States.

VULNERABILITY

Population

Cyberattacks can impact individuals by the loss of privacy, loss of financial resources, loss or corruption of critical information, loss of time spent resolving or responding to attacks, and several other negative consequences.

Property

Property, facilities, and infrastructure can be damaged or destroyed by a cyberattack incident.

Critical Facilities

A cyberattack could occur or impact any location in the County. It could occur anywhere in the United States and potentially still have impacts to the County and its businesses, governments, infrastructure, and people.
Cyberattacks can disrupt electronic operations or functions of critical facilities resulting in potentially catastrophic direct and indirect consequences. Table 3.30 summarizes critical infrastructure and key resources in Cass County. Many of these could be impacted by a cyberattack.

Table 3.30 – Critical Infrastructure and Key Resources in Cass County		
CIKR Resource	**Description**	**Number in Cass County**
Food/Agriculture	Major food distribution centers	2
Energy	Power generation and petrochemical facilities	3
Public Health	Hospitals and other healthcare facilities	5
Transportation	Major highways	6
Emergency Services	Police, fire, ambulance and dispatch centers	23
Communications	Major communications towers	8
Water	Treatment facilities	3

Economy

Cyberattacks can impact the local economy, although known incidences of cyberattacks do not typically have a county-wide economic impact. A cyber ransom attack is likely the most obvious way that there could be a county wide impact.

Future Development

Cyberattacks are not anticipated to directly impact potential future development patterns.

EXISTING CAPABILITIES

Standard cyberattack protection is in place through the county's internet service provider. Existing protection for private individuals and businesses, public services, and other local government agencies is unknown.

In the event of a cyberattack impacting dispatch services, the Red River Regional Dispatch Center (RRRDC) and first responders have established protocols to ensure continuity of operations. County IT, along with Fargo and West Fargo IT departments, have redundancies and failover plans to maintain functionality during disruptions, supported by the Metro Area's second geographically diverse fiber connection – though rural areas north of Fargo remain limited to a single line. Additionally, the Cass County Sherrif conduct annual trainings for critical incident and large-scale event planning, while Fargo Police Department (FPD) engages in monthly training on managing smaller civil unrest events and processes. These measures collectively enhance the county's resilience to cyber and civil disruptions. (Fire and IT IPP)

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Critical facilities and local organizations are at risk from cyberattacks.

Potential Action Item: Develop educational materials on best practices to harden electronic systems of critical facilities and local organizations and encourage their implementation.
Potential Action Item: Upgrade cyber protection of local government facilities and data.
Potential Action Item: Educate human users of electronic communications and software systems on best practices to prevent impacts from cyberattacks.

Hazardous Materials Release

All of Cass County
Overall Risk: Low
Probability: Low
Impact: Moderate. Impacts are usually environmental; however, injury and loss of life can occur.

Seasonal Pattern
None

Duration
1-10 hours

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation
Loss of income for displaced workers
Loss of power
Permanent loss of business

HAZARD PROFILE

A hazardous material is any substance that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Hazardous materials incidents can occur at a fixed facility or while material is transported. Common hazardous materials incidents at fixed sites include the improper storage, treatment, and disposal of hazardous waste at manufacturing and processing facilities. Transportation-related hazardous materials incidents generally occur along major transportation routes such as highways, interstates, pipelines, and railroads.

Common hazardous materials found in North Dakota include natural gas, anhydrous ammonia, and crude oil.

Natural gas is commonly used in North Dakota, often in its refined form of propane or butane. Propane and butane are generally transported as a liquid but will vaporize in the event of an unintended release (butane only vaporizes at temperatures above 32 degrees Fahrenheit). In their gaseous form they are both heavier than air, and generally remain close to the ground. Propane and butane are both highly flammable and present the risk of explosion. Exposure to propane and butane can also be a health hazard. Acute exposure can cause asphyxiation, respiratory irritation, and physiological damage; however, these effects are most likely to occur in enclosed spaces or areas with poor ventilation.

Anhydrous ammonia is used in manufacturing, refrigeration, and fertilizer. It is often stored and transported as a pressurized liquid, but it will vaporize under normal pressure. Anhydrous ammonia has explosive potential, but it requires extremely high temperatures to ignite. It generally only produces a significant health hazard when released in poorly ventilated areas, but when exposed to moisture it can cause a low-lying ammonia fog. Effects of acute anhydrous ammonia exposure include severe irritation to the eyes, respiratory tract, gastrointestinal tract, and skin; severe repetitive exposure can cause permanent damage to these tissues. Anhydrous ammonia is not known to be carcinogenic.

Crude oil poses a significant risk due to its high flammability. It may release flammable vapors that increase the risk of explosion. Crude oil also poses several health risks. Exposure to crude oil can come from direct contact, inhalation, or ingestion. Acute exposure to crude oil can cause direct effects such as skin irritation, breathing difficulty, headaches, and nausea. Acute exposure may also lead to long-term complications such as lung, liver or kidney damage, and increased cancer risk.

HISTORY

National data collection of hazardous materials releases includes the National Response Center and the Pipeline and Hazardous Materials Safety Administration.

The National Response Center is an interagency effort managed by the US Coast Guard that catalogs "all" reported hazardous materials incidents in the United States. There were 82 hazardous materials incidents in Cass County reported to the National Response Center from 2000 to 2023.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is part of the US Department of Transportation and monitors "all" transportation-related hazardous materials incidents in the United States. There were 360 incidents reported to the PHMSA during the time period 1990-2020.

- **December 07, 2008**. A BNSF Rail Company train derailed in Page, ND because of a broken rail at a field causing 37 railcars to be derailed. The train was carrying eleven different hazardous materials, one of which, methanol, started one railcar on fire after derailment. There were no injuries reported, although those within 100 yards of the derailment were asked to evacuate and traffic was rerouted.
- **December 30, 2013**. A westbound BNSF Railway Company train (grain train) with 112 cars that were loaded with grain derailed 13 cars while traveling on the main track 1 near Casselton, ND. The first car the derailed fouled the adjacent track, main track 2. The grain train executed safety protocols required after implementing emergency brake application, one of which involved broadcasting an emergency announcement to other train in the area. Unfortunately, a second BNSF train (oil train) with 104 tank cars loaded with crude oil was traveling eastbound on track 2 did not receive the emergency message as it was on a different radio station at the time. The road foreman of engines on the grain train attempted to contact the oil train crew to warn them of their emergency brake application. The oil train struck the derailed car on track 2 and derailed 20 of its own cars loaded with crude oil, two head-ended locomotives, and a buffer car. 476,000 gallons of crude oil were released and burned after the collision. There were no injuries reported and BNSF reports damages of $13.5 million (not including lading and environmental remediation).

Additional sources of information about hazardous materials releases include the ND Department of Emergency Services, the ND Department of Environmental Quality, and the Division of Mineral Resources. Notable hazardous material release incidents in Cass County according to the ND DEQ data source include 20,000 gallons of fuel oil in 1990 and 10,000 gallons of natural gas in 2021. A total of 256 incidents occurred in the county from 1975 to the present.

PROBABILITY

In general, as evidenced by the statistics above, hazardous materials releases happen frequently. On average, hazardous material releases in Cass County happen five times per year, with rare instances including injuries or fatalities.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Hazardous materials releases are a hazard not associated with climate change, but it is worth noting that some have suggested it is causing increased cases of temperature inversion. This may lead to reduced air quality resulting in impacts on people's health, especially those with respiratory illnesses.

LOCATION

Transportation routes throughout the county are primary locations at risk of hazardous materials releases. Highways and pipelines are the major transportation routes through the county. Materials transported through the county on truck include fuel, anhydrous ammonia, and saltwater.

The Emergency Planning and Community Right-to-Know Act (EPCRA) requires that operators of facilities containing hazardous materials and chemicals must identify themselves to appropriate state and local agencies. North Dakota requires that all hazardous materials operators submit Tier II Chemical Inventory Reports to the County's Local Emergency Planning Committee (LEPC) on an annual basis. Typical Tier II facilities include bulk fuel plants, anhydrous ammonia plants, propane plants, agricultural processing plants and energy producing sites. There were # active Tier II-reporting facilities in Cass County in 2021.

Table 3.31 shows major transportation corridors in Cass County, with evacuation areas of 1/2 mile and 1 mile. Tier II facilities and gathering lines are not shown but are found throughout the County. Hazard distances are from the 2012 Emergency Response Guidebook. Recommendations for initial evacuation in the case of fire for common hazardous materials are as follows:

- Crude oil, petroleum, and diesel fuel: 1/2 mile
- Propane, natural gas: 1 mile
- Anhydrous ammonia: 1 mile
- Chlorine: 1/2 mile
- Ammonium nitrate fertilizers: 1/2 mile

VULNERABILITY

Population

- Vulnerable population to transportation incidents can be estimated by identifying the intersection of 2020 US Census Blocks and the identified hazard areas in Figure 3.54. Census blocks in rural areas are generally large, which makes detailed estimates difficult. For purposes of this analysis, only census blocks that have their centroid within the hazard area are included; however, it is important to note that this analysis does not consider the exact location of residential structures within each census block. Vulnerable population estimates are shown in Table 3.31. Note that this analysis does not include population vulnerable to fixed site incidents due to the difficulty in cataloging all fixed site facilities.
- There has been two hazardous materials incident causing severe injuries or fatalities in Cass County in the last ten years.

Table 3.31 – Cass County Population within Hazardous Material Hazard Impact Areas				
Jurisdiction	Population in 1/2 Mile Hazard Area	% of Total Population	Population in 1 Mile Hazard Area	% of Total Population
Alice	0	0.0%	0	0.0%
Amenia	52	98.1%	1	1.9%
Argusville	72	43.1%	67	40.1%
Arthur	191	100%	0	100%
Ayr	18	100%	0	100%
Briarwood	0	0.0%	0	0.0%
Buffalo	158	100%	0	100%
Casselton	1,321	99.9%	1	0.1%
Devenport	133	100%	0	100%
Fargo	45,788	60.0%	18,863	24.7%
Frontier	85	100%	0	0.0%
Gardner	74	100%	0	100%
Grandin	99	100%	0	100%
Harwood	314	100%	0	100%
Horace	1,002	28.6%	1,310	37.4%
Hunter	236	99.2%	2	0.8%
Kindred	420	79.4%	109	20.6%
Leonard	176	99.9%	2	1.1%
Mapleton	748	99.9%	1	0.1%
North River	0	0.0%	0	0.0%
Oxbow	0	0.0%	79	31.0%
Page	176	98.9%	2	1.1%
Prairie Rose	21	100%	0	0.0%
Reile's Acres	4	1.4%	269	93.1%
Tower City	175	100%	0	0.0%
West Fargo	7,144	41.4%	5,519	32.0%
Rural Cass County	1,797	36.6%	794	16.2%

Property

- The level of property damage for hazardous materials releases in Cass County, including Alice, Amenia, Argusville, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie River, Reile's Acres, Tower City, and West Fargo is not readily available.

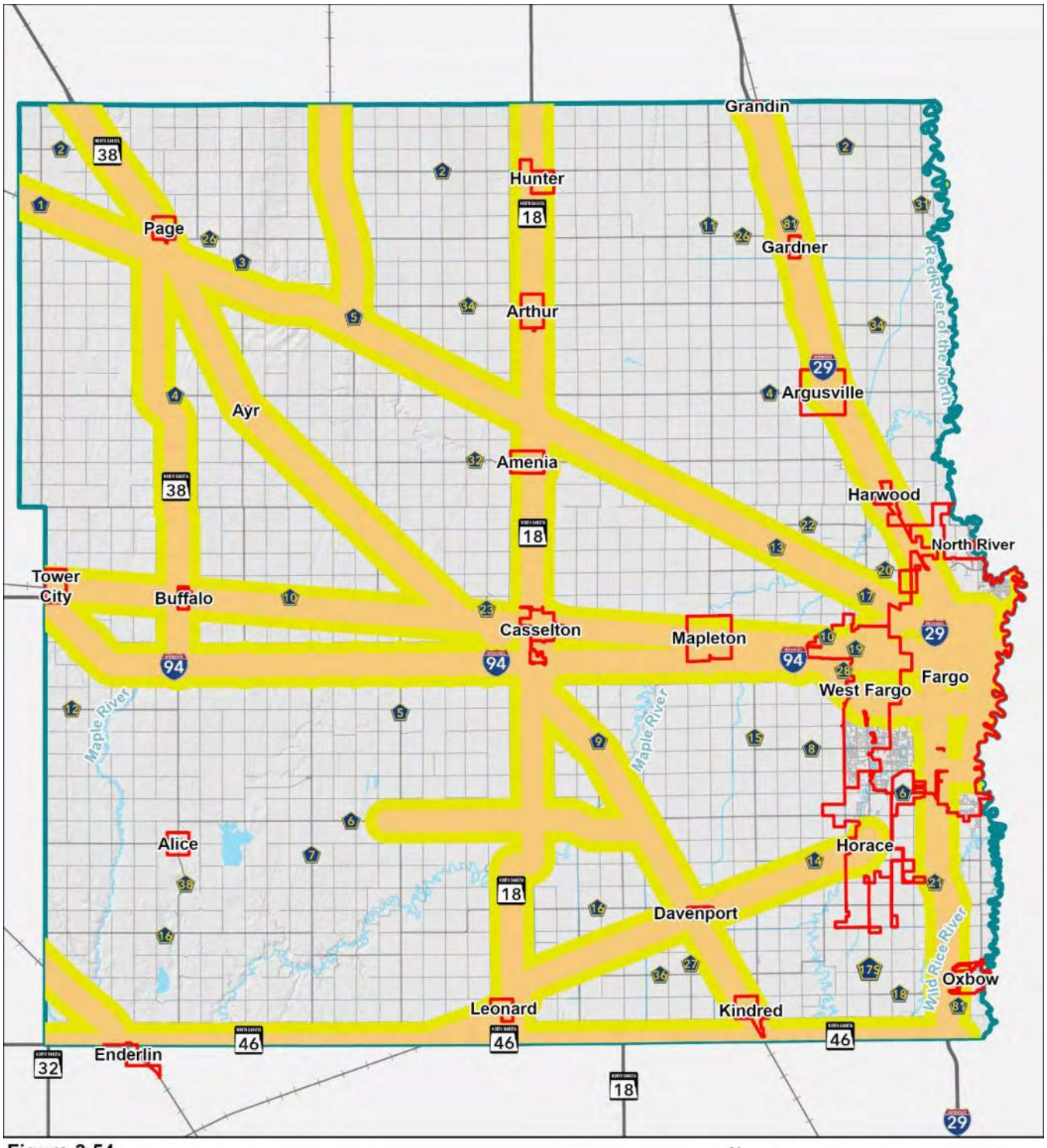


Figure 3.54
Hazmat

Critical Facilities

- Alice- No significant critical facilities are vulnerable.
- Amenia - No significant critical facilities are vulnerable.
- Argusville-
    - Argusville Rural Fire Station – Hazmat ½ mile buffer
    - Argusville Wastewater Treatment Plant – Hazmat ½ mile buffer
- Arthur-
    - Arthur Rural Fire Station – Hazmat ½ mile buffer
    - Arthur Wastewater Treatment Plant – Hazmat ½ mile buffer
- Ayr - No significant critical facilities are vulnerable.
- Briarwood - No significant critical facilities are vulnerable.
- Buffalo –
    - Buffalo Fire Department – Hazmat ½ mile buffer
    - Buffalo Wastewater Treatment Plant – Hazmat ½ mile buffer
- Casselton –
    - Casselton Fire Department – Hazmat ½ mile buffer
    - Central Cass Public School - Hazmat ½ mile buffer
    - Casselton Wastewater Treatment Plant - Hazmat ½ mile buffer
    - Casselton City Hall - Hazmat ½ mile buffer
- Davenport
    - Davenport Rural Fire Station - Hazmat ½ mile buffer
    - Davenport Wastewater Treatment Plant - Hazmat ½ mile buffer
- Fargo –
    - Fargo Fire Department Headquarters Station - Hazmat ½ mile buffer
    - Fargo Fire Department Station 3 - Hazmat ½ mile buffer
    - Fargo Fire Department Station 4 - Hazmat ½ mile buffer
    - Fargo Fire Department Station 5 - Hazmat ½ mile buffer
    - Fargo Fire Department Station 6 - Hazmat ½ mile buffer
    - Fargo Fire Department Station 2 – Hazmat 1 mile buffer
    - Fargo Police Department - Hazmat ½ mile buffer
    - Fargo Police Department South Fargo Substation - Hazmat ½ mile buffer
    - Cass County Sheriff's Office - Hazmat ½ mile buffer
    - North Dakota State Highway Patrol (Southeast Region-Fargo) - Hazmat ½ mile buffer
    - 16 Fargo Public Schools - Hazmat ½ mile buffer
    - 7 Fargo Public Schools – Hazmat 1 mile buffer
    - North Dakota State University - Hazmat ½ mile buffer
    - North Dakota State College of Sciences - Hazmat ½ mile buffer
    - Rasmussen College - Hazmat ½ mile buffer
    - University of North Dakota Medical Center - Hazmat 1 mile buffer
    - Fargo VA Medical Center - Hazmat 1 mile buffer
    - Sanford Broadway - Hazmat ½ mile buffer
    - Sanford Transplant Center - Hazmat ½ mile buffer
    - Sanford South University - Hazmat ½ mile buffer
    - Sanford West - Hazmat ½ mile buffer
    - Prairie St. Johns - Hazmat ½ mile buffer
    - Vibra Hospital of Fargo Hazmat ½ mile buffer
    - Essentia Health Fargo - Hazmat ½ mile buffer
    - Pam Rehabilitation Hospital of Fargo - Hazmat ½ mile buffer
    - 6 Urgent Care Facilities - Hazmat ½ mile buffer
    - 2 Urgency Care Facilities – Hazmat 1 mile buffer
    - 9 Nursing Homes - Hazmat ½ mile buffer
    - 5 Nursing Homes – Hazmat 1 mile buffer

  - 2 Dialysis Centers - Hazmat ½ mile buffer
  - Fargo Cass Public Health - Hazmat ½ mile buffer
  - Fargo Wastewater Treatment Plant - Hazmat ½ mile buffer
  - Cass County Jail - Hazmat ½ mile buffer
  - Fargo City Hall - Hazmat ½ mile buffer
  - Fargo-Cass Emergency Management Building (Public Safety Building) - Hazmat ½ mile buffer
  - Cass County Courthouse (central administrative building) - Hazmat ½ mile buffer

- Frontier- No significant critical facilities are vulnerable.
- Gardner – Gardner Wastewater Treatment Plant – Hazmat ½ mile buffer
- Grandin –
  - Grandin Wastewater Treatment Plant – Hazmat ½ mile buffer
  - Grandin Rural Fire Station - Hazmat ½ mile buffer
- Harwood –
  - City of Fargo (Harwood) Wastewater Treatment Plant – Hazmat ½ mile buffer
  - Harwood Elementary School – Hazmat ½ mile buffer
  - Harwood Fire and Rescue Station – Hazmat ½ mile buffer
  - Harwood City Hall - Hazmat ½ mile buffer
- Horace –
  - Southern Valley Fire & Rescue - Hazmat ½ mile buffer
  - Horace Elementary School - Hazmat ½ mile buffer
  - Heritage Middle School – Hazmat 1 mile buffer
  - Horace High School – Hazmat 1 mile buffer
  - Horace Wastewater Treatment Plant - Hazmat ½ mile buffer
  - Horace City Hall - Hazmat ½ mile buffer
- Hunter –
  - Hunter Dam – Hazmat ½ mile buffer
  - Hunter Volunteer Fire Station – Hazmat ½ mile buffer
  - Hunter Wastewater Treatment Plant - Hazmat ½ mile buffer
- Kindred –
  - Kindred Community and Rural Fire Station - Hazmat ½ mile buffer
  - Kindred High School - Hazmat ½ mile buffer
  - Kindred Elementary School - Hazmat ½ mile buffer
  - Kindred Wastewater Treatment Plant - Hazmat ½ mile buffer
  - Kindred Ambulance - Hazmat ½ mile buffer
  - Kindred City Hall - Hazmat ½ mile buffer
- Leonard –
  - Leonard Fire Station - Hazmat ½ mile buffer
  - Leonard Wastewater Treatment Plant - Hazmat ½ mile buffer
- Mapleton –
  - Mapleton Volunteer Fire Station - Hazmat ½ mile buffer
  - Mapleton Wastewater Treatment Plant - Hazmat ½ mile buffer
- North River - No significant critical facilities are vulnerable.
- Oxbow - No significant critical facilities are vulnerable.
- Page –
  - Page Fire Protection Station - Hazmat ½ mile buffer
  - Hope Page Elementary School - Hazmat ½ mile buffer
  - Page Wastewater Treatment Plant - Hazmat ½ mile buffer
- Prairie Rose - No significant critical facilities are vulnerable.
- Reile's Acres - No significant critical facilities are vulnerable.
- Tower City –
  - Tower City Fire Station - Hazmat ½ mile buffer
  - Maple Valley Elementary School - Hazmat ½ mile buffer

  - Tower City Wastewater Treatment Plant - Hazmat ½ mile buffer
- West Fargo-
  - West Frago Fire Department - Hazmat ½ mile buffer
  - West Fargo Police Department - Hazmat ½ mile buffer
  - 7 Public Schools - Hazmat ½ mile buffer
  - 4 Public Schools – Hazmat 1 mile buffer
  - 1 Private School - Hazmat ½ mile buffer
  - 2 Nursing Homes - Hazmat ½ mile buffer
  - 2 Nursing Homes – Hazmat 1 mile buffer
  - Essentia Health West Fargo – Hazmat 1 mile buffer
  - Cass County Highway Department Building - Hazmat 1 mile buffer
  - West Fargo City Hall - Hazmat ½ mile buffer

- Cass County-
  - Erie Rural Fire Department - Hazmat ½ mile buffer

Economy

- There is not an identifiable economic impact due to the very low number of reported hazardous materials incidents in all cities in Cass County.

Future Development

- The region's vulnerability to hazardous materials is not expected to change in the foreseeable future. There are no identified direct impacts on future development locations from hazardous materials releases.
- Local jurisdiction zoning ordinances can restrict the future development from locating near certain high-risk hazardous materials facilities.

EXISTING CAPABILITIES

An unknown number of the 40 fire departments are trained at the awareness level on hazardous materials. It is also unknown which have had additional training (Pro Board Certified).

Hazardous materials operators are responsible for clean-up and reclamation of incident sites.

Local jurisdiction zoning ordinances can restrict future development from locating near certain high-risk hazardous materials facilities but may not always be able to influence the location of high-risk hazardous materials facilities.

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** Hazardous materials incidents are not common in Cass County but the risk of such incidents is very real given the high volume roads acting as routes for hazardous materials. The vast majority of residents live, work or travel within a potential hazard area.

- *Potential Action Item*: Educate first responders and residents about hazardous materials safety.
- *Potential Action Item*: Designate evacuation shelter facility for each city located a safe distance from potential sources of hazardous materials incident.
- *Potential Action Item*: Prohibit the construction of facilities containing hazardous materials within floodplain areas.

Infectious Disease and Invasive Species

All Jurisdictions
Overall Risk: Moderate
Probability: Moderate
Impact: Moderate (Approximately 42 percent of the population is under 18 or over 65 years of age. Fatality rates for most modern diseases in North Dakota are significantly lower than one percent. Agricultural losses could total millions of dollars.)

Seasonal Pattern
None

Duration
Varies

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation
School closure

HAZARD PROFILE

Infectious disease and invasive species are hazards that pose significant risks to public health, ecosystems, and the economy. Both have the potential to spread rapidly in new environments, a process often facilitated by human activities such as travel, trade, and the movement of goods. The rapid spread of these hazards can lead to severe health and economic impacts. Infectious disease can cause illness and death among humans, animals, and plants, while invasive species disrupt ecosystems, leading to declines in native species and indirectly human health and well-bring. Economically, infectious disease strain healthcare systems, reduce workforce productivity, and kill livestock, whereas invasive species damage crops, fisheries, forestry, and tourism industries, resulting in substantial financial losses.

Infectious disease is an illness caused by infectious agents such as bacteria, virus, fungi, parasites, or toxins. Infectious diseases of particular concern are those that can lead to the loss of human life or widespread loss of crops and livestock. A severe infectious disease incident has potential for catastrophic effects on human populations and the economy.

There are numerous ways for infectious disease to spread among humans: physical contact with an infected person, contact with contaminated object, bites from animals or insects carrying the disease, or air travel. A widespread occurrence of infection in a community is called an epidemic. Epidemics may lead to quarantines, school and business closures, and stress on medical facilities. A widespread epidemic (often countrywide or worldwide in scope) is referred to as a pandemic. Perhaps the most notable pandemic in the modern era was the Spanish Influenza in 1918. The disease killed an estimated 20 to 40 million people worldwide, including 675,000 Americans. In North Dakota, about 2,700 people died and 6,000 were infected. The current COVID-19 pandemic as of December 23, 2023, has causes 288,106 infections statewide.

Animal and plant diseases can harm the economy through the loss of livestock and crops. Widespread plant and animal diseases can lead to food shortages. Some animal diseases may cause sickness in humans if proper precautions are not taken with infected animals. Diseases that are a threat to cattle include tuberculosis and anthrax. According to the North Dakota Department of Health and Human Services, there has been one report of tuberculosis in cattle in recent years. Anthrax is much more common, with 185 cases between 1989 and 2010; a majority of those cases occurred in 2005 when there were 109 reports. Plant diseases in North Dakota include Karnal bunt disease, black stem rust race Ug99, and emerald ash borer.

Infectious diseases can be categorized under three labels: endemic, epidemic, and pandemic. Endemic denotes a disease that maintains a stable presence within a specific geographic region or population over time, often without causing significant alarm. In contrast, an epidemic signifies the sudden and widespread surge in the number of disease cases within

a given area or population, exceeding what is typically expected, and may result from various factors like a new pathogen stain. Finally, a pandemic is the most severe scenario, representing a global outbreak of disease that affects a substantial portion of the world's population and often involves a novel pathogen to which many people lack immunity, carry significant global health, social, and economic implications. Covid-19 severs as a resent illustration of a pandemic. Below is a graphic used by Lisa Ryan for WCBE News published on January 10, 2022, explaining the difference between an endemic, epidemic, and a pandemic.



Infectious disease and pests noted by the 2019 North Dakota Enhanced Mitigation Area Operations Plan included the following:

Human

- Common infectious diseases: influenza, pneumonia, coronaviruses such as COVID-19, severe acute respiratory syndrome (SARS), Middle Eastern Respiratory Syndrome (MERS), Tuberculosis (TB), measles, mumps, and malaria) Sexually Transmitted Infections: gonorrhea, chlamydia, syphilis, hepatitis, human immunodeficiency virus (HIV), and the human papillomavirus (HPV)
- Foodborne Illness: Shiga toxin-producing E. coli (STEC) infections, which are usually found from exposure to human and animal waste, and Legionnaires Disease, which can be found in stagnant water such as drinking water and recreational water
- Emerging or Foreign Diseases: multi drug resistant organisms (MDRO), West Nile virus, Lyme Disease, and Mpox (formally known as monkey pox)

Animal

- Chronic wasting disease
- Epizootic Hemorrhagic Disease
- Diseases primarily present in bovine and equine livestock: Anthrax, Equine Infectious Anemia, and Brucellosis
- Disease primarily presents in poultry or wild birds: Highly Pathogenic Avian Influenza (HPAI)
- Emerging Threats: H1NI Influenza (Swine Flu) and Rabies

Pests

- Pest common in North Dakota wheat: aphids, armyworms, dingy cutworm, grasshoppers, and Hessian flies
- Pest common in North Dakota corn: aphids, armyworms, dingy cutworms, grasshoppers, rootworms, European corn borer, spider mites, white grubs, and wireworms
- Emerging Threat: Emerald Ash Borers. The images below show the same street lined with ash trees in two different circumstances. The first image shows the street before emerald ash borers infested the trees, and the bottom picture shows the impact emerald ash borers had on the trees after infestation.





Images source: The Spread of the Emerald Ash Borer

Plant

- Currently present in North Dakota: Rust disease and blight

While perhaps not technically an infectious disease or a pest infestation, it may be appropriate to consider weed infestation under this hazard as well. There are several noxious weeds of specific concern in Cass County because of their potential to limit the economic productivity of cropland and pastureland. These include the following 13 weeds identified on the County website:

- Absinth Wormwood
- Canada Thistle
- Dalmatian Toadflax
- Diffuse Knapweed
- Houndstongue
- Leafy Spurge
- Musk thistle
- Palmer amaranth
- Purple Loosestrife
- Russian Knapweed
- Saltcedar
- Spotted Knapweed
- Yellow Toadflax

HISTORY

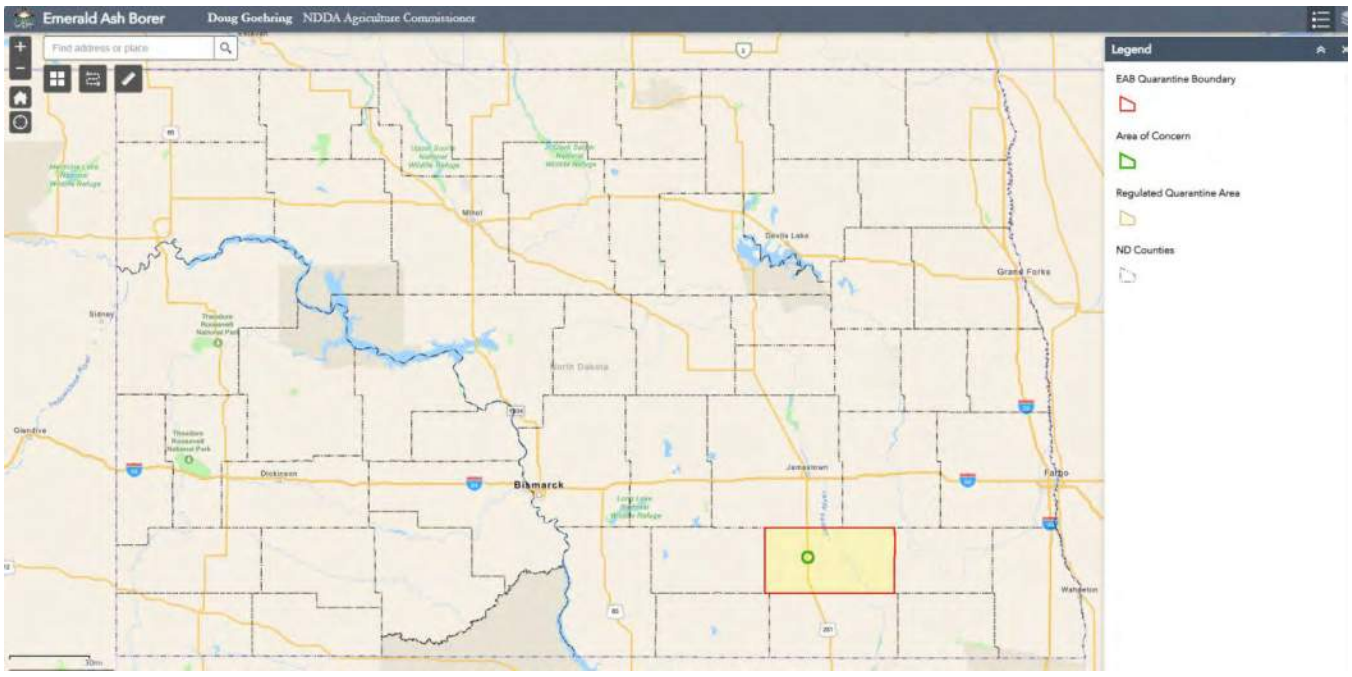
Prior to the COVID-19 pandemic of 2020, there had been no recent history of major crop, animal or human epidemic disease or contamination in the county. Through May 2023, there have been 182 deaths attributed to COVID-19 in Cass County.

From December 2023 to January 2024, local hospitals experienced a strain on their healthcare capacity as hospitalizations increased over a four-week period. During this time, diagnoses of influenza increased by 200%, COVID-19 by 51%, and RSV by 60%, One contributing factor to this surge is the reported low vaccination rates. In January 2024, Cass County reported an influenza vaccination coverage rate of just 30.7%. (Health Officer Report 1.3.24)

Cass County experienced a significant pertussis (whooping cough) outbreak from October 2023 to March 2024, with 39 cases reported, surpassing the average of 5-8 cases per year. Pertussis is highly contagious and poses serious risks, especially to infants. (Health Officer Report 3.8.24)

Cass County's agricultural base makes it highly susceptible to pests that affect crops, livestock, and urban areas. Common agricultural pests include insects such as grasshoppers an aphids, rodents such as mice and voles, and noxious weeds like leady spurge and Canda thistle. Urban areas, including Fargo and West Fargo, face pest issues such as rodents, insects (e.g., cockroaches and termites), and nuisance wildlife like racoons. Climate change further exacerbates these threats by altering pest distribution and creating conditions favorable for their survival and growth.

Emerald ash borer has been found in Lamoure County in August 2024. The image below shows the area of concern within Lamoure County, which is approximately 50 miles away from Cass County.



PROBABILITY

Populations throughout the world are susceptible to epidemics and national pandemics, and Cass County residents are no exception, although the generally low population density of the area makes rapid transmission of communicable disease less likely.

Based on historical data, it is highly likely that one or more infectious diseases will occur in Cass County every year.

Based on historical data, it is likely that plant or animal diseases will occur in Cass County within a ten-year period.

According to the ND's Enhanced Mitigation Plan, 20 out 75 individual reportable infectious diseases among humans that can cause death or serious illness has a vaccine that can reduce symptoms and/or increase resistance to contracting the disease. The probability of an infectious disease event occurring is increasing due to the growing trend of declining vaccination coverage to achieve heard immunity. The increase in vaccine exceptions in North Dakota, rising from 1.4% a decade ago to nearly 5% today, reflects a broader trend influenced by factors such as the COVID-19 pandemic. The pandemic has influences public trust in both COVID-19 vaccines and healthcare institutions, which may contribute to a broader skepticism towards all vaccines. Heightened media coverage, misinformation spread through social networks, and politicization of public health measures have played a role in shaping public perceptions. As individuals grappled with rapidly changing information and directives during the pandemic, some may have developed concerns about the safety and efficacy of vaccines, leading to increased vaccine hesitancy and exceptions. This shift underscores the challenges faced in maintaining high vaccination rates necessary for herd immunity against infectious disease. The County cannot depend on past herd immunity rates to support those that choose not to get vaccinated, as vaccination rates were higher in the past than they are now.

For example, herd immunity for measles requires 95% of the population to be vaccinated. During the 2022-2023 school year, the North Dakota statewide kindergarten MMR rate was only 91.8% with Cass County slightly higher at 94.6%. However, only 80.3% of children aged 19-35 months statewide are up to date with their MMR vaccinations, and in Cass County, the MRR vaccination for children aged 19-35 months is slightly higher at 82.4%. This decline in vaccination rates undermines herd immunity and increases the risk of infectious disease outbreaks. (Fargo Cass Public Heath February 6, 2024, Health Officer Report)

The probability of pest infestations and noxious weeds in Cass County is high due to its agricultural focus and urban areas. Agricultural pest, including insects and rodents, pose significant risks to crops, while urban pest such as rodents, insects, and nuisance wildlife frequency impact homes and businesses. Noxious weeds are actively monitored and managed, reflecting their persistent presence. Factors such as agricultural practices, urbanization, and climate change further increase the likelihood of pest and weed issues by creating favorable conditions for their growth and spread.

The Emerald ash borer, which has been first detected in North Dakota on September 4, 2024. These invasive, destructive insects feed below the bark of ash trees. Once infested, ash trees can die in two years. The largest source of transmission is human caused and occurs by moving firewood to and from outside locations, as the firewood also carries pests like the Emerald ash borer. However, emerald ash borers can fly about a half mile from their host to infect a new tree.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Another potential result from climate change may be increased risk of infectious disease and pest infestations. For example, higher temperatures affect West Nile virus transmission by accelerating mosquito development. Also, an earlier spring thaw and longer growing season may allow certain pests to overwinter or to migrate to the area earlier in the growing season and adversely impact people, livestock, and crops.
Climate change exacerbates threats of agricultural pests by altering pest distribution and creating conditions favorable for their survival and growth.

LOCATION

Infectious disease and pest infestations are not controlled by geographic boundaries and can happen throughout the entire area of Cass County.

VULNERABILITY

Population

Elderly and young persons are most at risk for communicable disease. Approximately 9,822 of the county's permanent residents are 65 years of age or older. The estimated number of permanent residents aged 65 or older for each jurisdiction are summarized below.

- Alice: 7 residents
- Amenia: 12 residents
- Argusville: 26 residents
- Arthur: 52 residents
- Ayr: 1 resident
- Briarwood: 11 residents
- Buffalo: 50 residents
- Casselton: 333 residents
- Davenport: 22 residents
- Fargo: 16,348 residents
- Frontier: 40 residents
- Gardner: 13 residents
- Grandin: 34 residents
- Harwood: 34 residents
- Horace: 297 residents
- Hunter: 42 residents
- Kindred: 67 residents
- Leonard: 55 residents
- Mapleton: 99 residents
- North River: 14 residents
- Oxbow: 34 residents
- Page: 38 residents
- Prairie Rose: 15 residents
- Reile's Acres: 47 residents
- Tower City: 46 residents
- West Fargo: 4,069 residents

Approximately 7.3 percent, or 5,099, of the county's permanent residents are under five years of age. The estimated number of permanent residents under age five for each jurisdiction is summarized below.

- Alice: 1 resident
- Amenia: 7 residents
- Argusville: 29 residents
- Arthur: 26 residents
- Ayr: 1 resident
- Briarwood: 2 residents
- Buffalo: 8 residents
- Casselton: 178 residents
- Davenport: 21 residents
- Fargo: 7,814 residents
- Frontier: 7 residents
- Gardner: 15 residents
- Grandin: 8 residents
- Harwood: 40 residents
- Horace: 235 residents
- Hunter: 23 residents
- Kindred: 306 residents
- Leonard: 9 residents
- Mapleton: 143 residents
- North River: 4 residents

- Oxbow: 30 residents
- Page: 7 residents
- Prairie Rose: 5 residents
- Reile's Acres: 41 residents
- Tower City: 20 residents
- West Fargo: 3,109residents

The most commonly occurring infectious disease in recent decades has been influenza. The North Dakota Department of Health and Human Services has published the number of cases at a county level from 2010 through 2023. The season with the highest number of cases in Cass County was 2019-2020. There were 12,502 cases that season. The North Dakota Department of Health and Human Services also maintains a website with weekly summaries of new influenza cases by county.
The Centers for Disease Control and Prevention (CDC) estimates that a medium level influenza pandemic would result in 30 percent ill, 0.8 percent of ill requiring hospitalization and 0.2 percent of ill dying from the disease. In Cass County this would equate to 55,3575 ill, 1,476 requiring hospitalization and 369 deaths from a medium level influenza pandemic.
Population centers are at a higher risk for spreading communicable diseases. The population centers in Cass County are Alice, Amenia, Argusville, Arthus, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo. The largest population center is Fargo.

Property

The 2019 North Dakota Enhanced Mitigation Mission Area Operations Plan estimated that infectious disease could impact 20 percent of crop and livestock values. According to the 2017 Census of Agriculture the market value of crops in Cass County was $595,527,000 and the market value of livestock was $17,169,000 million. Estimating 20 percent loss for each sector results in $119,105,400 in communicable disease-related crop loss and $3,433,800 livestock loss.

Critical Facilities

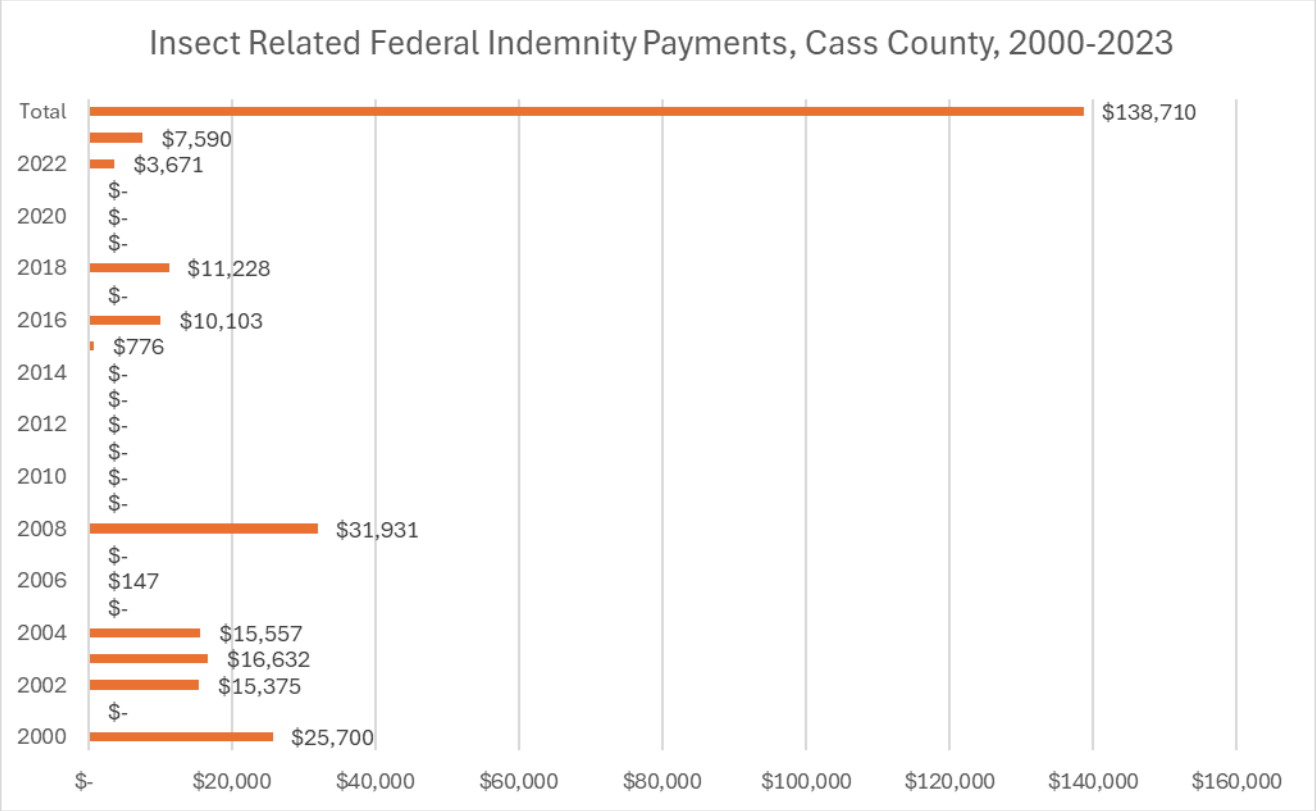
Gathering places and facilities that have a high density of occupants have the greatest vulnerability to infectious disease. These include:
– 65 public school sites in 9 communities – 27,000 students
– 8 private school sites in 2 communities – 3.000 students
– 18 nursing homes/assisted living centers in 2 communities – estimated 2,000 beds
– Sanford Medical Center Fargo – 348 beds
– Sanford Medical Center Broadway – 188 beds
– Sanford South University Medical Center – 74 beds
– Essentia Health Care – 128 beds
– Fargo VA Medical Center – 38 beds
– North Dakota State University – approximately 18,000 combined employees and students
– North Dakota State College of Science – approximately 250 students, unknown staff

Economy

Infectious disease has had an economic impact in Cass County. The County reports on its websites the costs of additional, unbudgeted expenditures totaled over $350,000. These unexpected costs include enhanced cleaning efforts, the establishment of distance workspaces, and the associated cost of transition to remote work. Financial challenges were amplified during an all-mail primary election in 2020 and a mail and vote center general election the same year. The option to vote in person during the pandemic added costs of $9,000 to the county, which included the addition of plexiglass for poll workers at six vote centers and the unbudgeted expenditures for poll worker time.

Historic crop damage caused by insects, or pests, occurrences can be measured by looking at the impacts. Federal Indemnity programs provide financial assistance to help reduce the economic impacts of pest related agricultural losses. Figure 3.55 shows indemnity payments for Cass County from 2000-2023.The figure shows that 2008 had the largest indemnity payment, $31,391 for the county during that time period.

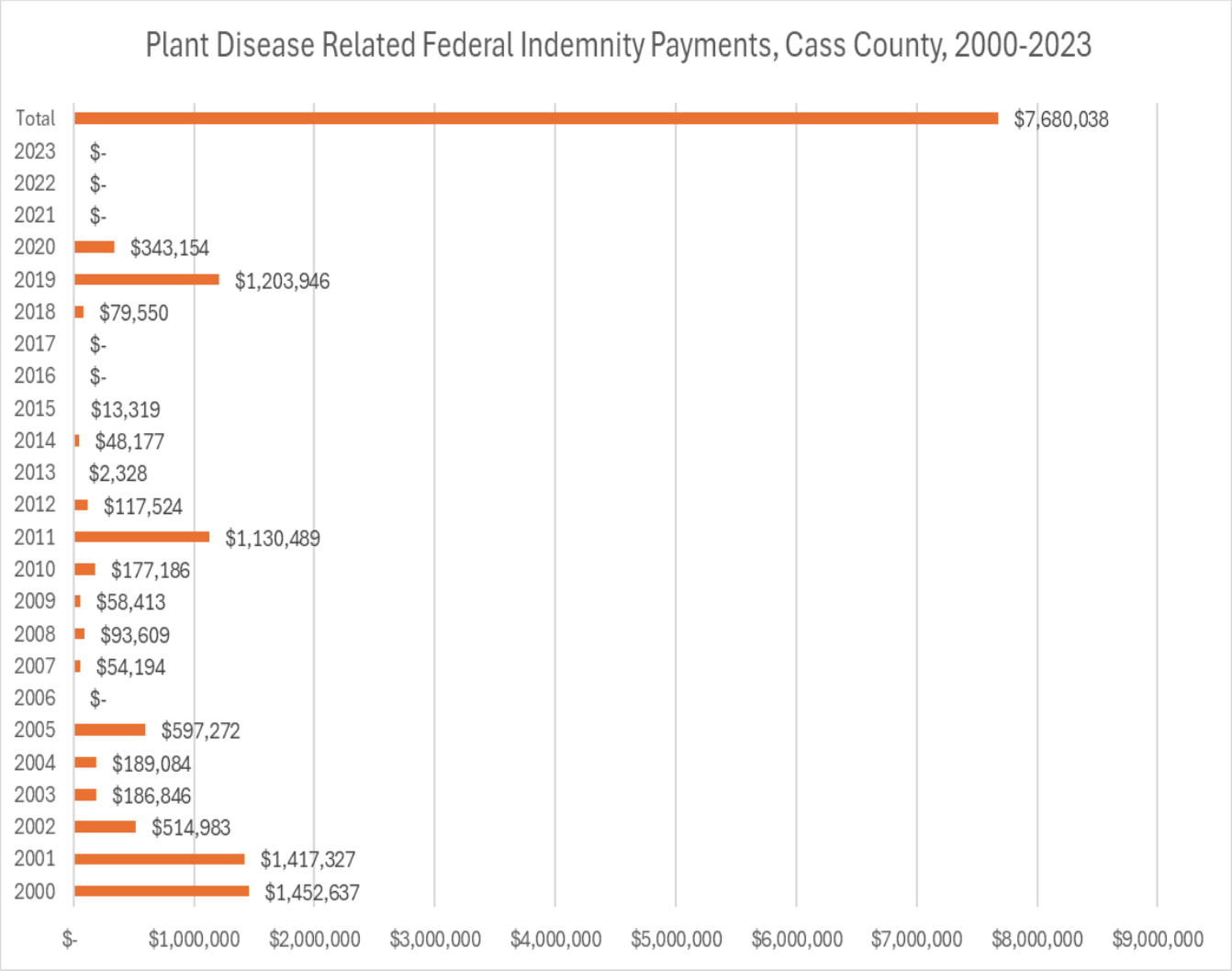
Figure 3.55 – Insect-Related Federal Indemnity Payments, Cass County, 2000-2023



Source: National Drought Mitigation Center (USDA Risk Management Agency 2018-2024)*

Historic crop damage caused by plant disease occurrences can be measured by looking at the impacts. Federal Indemnity programs provide financial assistance to help reduce the economic impacts of plant disease related agricultural losses. Figure 3.56 shows indemnity payments for Cass County from 2000-2023. The figure shows that 2000 had the largest indemnity payment, $1,452,637 for the county during that period. The years 2000, 2001, 2011, and 2019 had plant disease related payments in excess of $1,000,000.

Figure 3.56 – Plant Disease Related Federal Indemnity Payments, Cass County, 2000-2023



Source: National Drought Mitigation Center (USDA Risk Management Agency 2018-2024)*

Future Development

The growth of the energy industry has resulted in an influx of young workers who are generally less susceptible to disease given their age; however, the high-density living conditions experienced by many of these workers, especially those in workforce housing facilities, could make rapid disease transmission more likely. As the population stabilizes this is unlikely to remain a significant factor, and the long-term impact of infectious diseases on future development is likely to be negligible.

Cass County can guide development to reduce pest infestations and noxious weeds through strategies such as zoning and land use regulations, integrated pest management (IPM), and sustainable practices. Protecting natural habitats and establishing buffer zones can maintain ecological balance and limit pest spread. Promoting IPM principles and providing educational resources encourage non-chemical pest control. Weed management programs, including early detection, enforcement of noxious weed ordinances, and public outreach, are critical. Sustainable practices like minimizing soil disturbance, using native plants, and conserving water further mitigate risks. Collaboration with stakeholders and leveraging expertise from agencies like USDA and NDSU Extension will enhance long-term success.

EXISTING CAPABILITIES

Sanford Medical Center is a Level II trauma center with 65 adult ICU beds and 8 pediatric ICU beds. Essential Health in Fargo is also a Level II trauma center with 54 adult ICU beds (pediatric ICU bed information is not available).

The USDA Farm Service Agency and North Dakota State University Extension both have field offices located in Fargo and offer technical assistance to farmers and ranchers for the prevention and treatment of agricultural diseases.

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Human and agricultural disease have the potential to greatly impact the health and economy of the county.

Potential Action Item: Continue supporting the efforts of the USDA Farm Service Agency and NDSU Extension.

Dam Failure

Table 3.32 – Jurisdictional Dam Failure Hazard Information			
City	Overall Risk	Probability	Impact
Rural Cass County	Moderate	Low	Low
Alice	Low	Low	Low
Amenia	Low	Low	Low
Argusville	Low	Low	Low
Arthur	Low	Low	Low
Ayr	Low	Low	Low
Briarwood	Low	Low	Low
Buffalo	Low	Low	Low
Casselton	Low	Low	Low
Davenport	Low	Low	Low
Fargo	Low	Low	Low
Frontier	Low	Low	Low
Gardner	Low	Low	Low
Grandin	Low	Low	Low
Harwood	Low	Low	Low
Horace	Low	Low	Low
Hunter	Moderate	Low	Moderate
Kindred	Low	Low	Low
Leonard	Low	Low	Low
Mapleton	Low	Low	Low
North River	Low	Low	Low
Oxbow	Low	Low	Low
Page	Low	Low	Low
Prairie Rose	Low	Low	Low
Relies Acres	Low	Low	Low
Tower City	Low	Low	Low
West Fargo	Low	Low	Low

Duration
24 hours

Impacts
Agricultural loss (crops, livestock)
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation

Loss of power
Release of hazardous materials
Shortage of critical materials

HAZARD PROFILE

A dam is defined as an artificial barrier across a watercourse or natural drainage area that may impound or divert water. Dams have many potential uses, including hydro-electric power generation, irrigation, flood control, water supply and recreation. Dam structures can be earthen or from manmade materials. Dam failure is a sudden, uncontrolled release of impounded water, and can have a devastating effect on people and property downstream.

The Association of State Dam Officials identifies five primary causes of dam failure, which are often interrelated:

- Overtopping of a dam occurs when water from the reservoir spills over the top of the dam, creating instability in the structure. This can occur during a major flood event if the spillways are not adequately designed or if there is blockage in the spillway. Approximately 34 percent of all dam failures in the United States are due to overtopping.
- Foundation defects, including settlement and slope instability, cause about 30 percent of all dam failures.
- Piping is a term used to describe the process that occurs as seepage pathways create eroded pipes through a structure. Seepage often occurs around hydraulic structures and earthen features, and if left unchecked can gradually reduce the dam structure's stability. About 20 percent of all dam failures in the United States are caused by piping.
- Structural failure of materials used to construct the dam.
- Inadequate maintenance.

HISTORY AND EXTENT

According to the statewide Multi-Hazard Mitigation Plan, 10 North Dakota dams rated as a high or significant hazard failed since 2010. No dams have failed in Cass County.

Under North Dakota Century Code 61-03-25, Emergency Action Plans (EAPs) are mandated for all high and medium hazard dams across the state (ND Century Code, 2023). These plans outline the procedures for managing a potential dam failure to reduce the risk of fatalities and property damage. An EAP details the specific risks and consequences of a dam failure and outlines the necessary steps to take if such an event occurs. It is the responsibility of dam owners to create, test, and regularly update these EAPs.

The severity of dam failure hazard is determined by three factors: 10 the dam's Hazard Classification, 2) the condition of the dam, and 3) the likelihood of failure under adverse conditions (FEMA P-1025, 2015). The Hazard Classification, which is based on potential harm to life and property in the event of a dam failure, follows categories defined by Noth Dakota Administrative Code 89-08-01-01 (ND Admin Code, 2023):

- **High Hazard Dams:** These dams have a high potential for causing loss of life if they fail or malfunction, with the likelihood of multiple fatalities.
- **Medium (Significant) Hazard Dams:** These dams pose no probable risk to human life but may result in economic damage, disruptions to critical infrastructure, or other concerns if failure occurs.
- **Low Hazard Dams**: These dams pose no probable risk to human life and would cause only minimal economic losses if they were to fail or malfunction.

North Dakota Sam Safety Standards (NDDWR REg_05.2024a) require regular construction and maintenance inspections for all medium and high hazard dams to evaluate their condition. As outlined by the ND Dam Safety Standards, the likelihood of dam failure is assessed through engineering evaluations that consider:

1.) the probability of specific loads (e.g., flood, earthquakes),
2.) the likelihood and type of system failure under those loads, and
3.) the consequences of each potential failure type

The Joint Federal Risk Rating categories are assigned to federal dams where one is the most likely to experience failure and five is the least likely to experience failure as shown in table 3.33. It can also be useful to use the USGS Flood Inundation Mapping (FIM) Program. This program can be used to develop and provide online access to flood inundation maps. It can also be used to generate different scenarios to help citizens understand the risks of dam failure.

Table 3.33 – Joint Federal Risk Dam Categories

Urgency of Action	Characteristic and Considerations	Probability
I – Very High Urgency	CRITICAL NEAR FAILURE: There is direct evidence that a failure is in progress, and the dam is almost certain to fail during normal operations if actions is not taken quickly. OR EXTREMELY HIGH RISK: Combination of life or economic consequences and likelihood of failure is very high with high confidence	• Take immediate action to avoid failure. Communicate findings to potentially affected parties. • Implement IRRMS. • Ensure that emergency action plan is current and functionally tested. • Conduct heightened monitoring and evaluation. Expedite investigations and actions to support long-term risk reduction. • Initiate intensive management and situation reports.
II – High Urgency	RISK IS HIGH WITH HIGH CONFIDENCE, OR IT IS VERY HIGH WITH LOW TO MODERATE CONFIDENCE: The likelihood of failure from one of these occurrences, prior to taking some action, is too high to delay action.	• Implement IRRMs. • Ensure that the emergency action plan is current and functionally tested. • Give high priority to heightened monitoring and evaluation. • Expedite investigations and actions to support long-term risk reduction. • Expedite confirmation of classification.
III – Moderate Urgency	MODERATE TO HIGH RISK: Confidence in the risk eliminates is generally at least moderate but can include facilities with low confidence if there is a reasonable chance that risk estimates with be confirmed or potentially increase with further study.	• Implement IRRMs. • Ensure that emergency action plan is current and functionally tested. • Conduct heightened monitoring and evaluation. Prioritize investigations and actions to support long-term risk reduction. • Prioritize confirmation of classification as appropriate.
IV – Low to Moderate Urgency	LOW TO MODERATE RISK: The risks are low to moderate with at least moderate confidence, or the risks are low with low confidence, and there is a potential for the risks to increase with further study.	• Ensure that routine risk management measures are in place. • Determine whether action can wait until after the next periodic review. • Before the next periodic review, take appropriate interim measures and schedule other actions as appropriate. • Give normal priority to investigations to validate classification, but do not plan for risk reduction measures at this time.
V - No Urgency	LOW RISK: The risks are low and are unlikely to change with additional investigations or studies.	• Continue routine dam safety risk management activities and normal operations and maintenance.

Source: Federal Guidance for Dam Safety Risk Management (FEMA P-1025), 2015

PROBABILITY

North Dakota had a busy inter-war period, constructing 366 dams between 1920-1940 (NDDSP, 2023). The average age of a dam in the National Inventory of Dams in North Dakota is 57 years old (NID, 2023). The riskiest years for dams are in their first 10 years of operation when the reservoir is filling with water and 12% fail during that first decade of operation (NPDP, 2018). According to NDDWR (2024), there are no dams in Cass County that are less than 10 years old as of 2024. The next critical years are when dams are past their design life. More than 10 percent of dam failures occur when the dams are 100 years old or more. According to NDDWR (2024), there are no dams in Cass County that are more than 100 years old as of 2024.

Approximately 11% of Cass County dams are considered to be a High hazard Potential Dam (HHPDs) (NID, 2024), meaning their failure would likely lead to the loss of life downstream, and of these none were considered in poor condition. According to NDPD (2019), if evert dam in the state had an equal chance of failure, the likelihood of a dam failure resulting in the loss of life would be around a 1% annual chance.

A well designed, constructed, and maintained dam can have a lifespan of up to 100 years or more. However, several factors play a critical role in determining its durability:

- **Maintenance:** Routine inspections and timely maintenance are important for extending a dam's operational life. Neglect can lead to faster wear and potential structural failures.
- **Material Quality:** The durability of a dam heavily depends on the quality of materials used during construction. Poor quality materials can shorten its lifespan significantly.
- **Environmental Factors:** Harsh weather, erosion, and seismic activity can accelerate a dam's deterioration and impact its structural integrity.
- **Design and Construction:** Proper engineering and construction techniques are fundamental to ensuring a dam's longevity and reliability.

While well maintained dams can remain functional for many decades, many in the county are aging and may soon require substantial repairs or, in some cases, decommissioning to mitigate potential risks.

Table 3.34 - Built Year of North Dakota Dams (2024)	
1800s	0
1900-1920	0
1921-1940	6
1941-1960	1
1961-1980	6
1981-2000	1
2001-present	2
Unknown	12

Source: National Dam Inventory, 2024

Currently, condition reports exist only for the county's three high hazard dams, shown in Table 3.35, as their failure would have the greatest impact on life and property. In contrast, significant and low hazard dams, while still important, are less likely to cause widespread damage and thus receive less monitoring. Assessing the condition of all dams, regardless of hazard classification, is important for identifying necessary repairs and developing mitigation plans to safeguard lives and property.

Table 3.35 - Cass County Regulated Dams by Hazard Classification and Condition, 2024				
Potential Hazard	Dams	Condition		
		Poor	Fair/Satisfactory	Unavailable/Not
High	3	0	3	0
Significant	5	0	0	5
Low	16	0	0	16
Undetermined	4	0	0	4
Total	28	0	3	25

Source: National Dam Inventory, 2024

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Dam failure is probably not so likely impacted directly by the effects of climate change. However, rapid snowmelt after high winter precipitation can result in a more rapid increase of impounded water. And while there are not major dams in the county, there are levees and embankments. For older levees and embankments there may be potential for overtopping, and in the case of structurally deficient dams or levees, structural failure.

LOCATION

The North Dakota State Water Commission maintains a database of all dams or levees in the county. There are 28 dams in Cass County; three are classified as high hazard and five are classified as significant hazard, while the other 16 dams are listed at lower hazard risk. These dams are described in Table 3.8 and shown in Figure 3.29. There are several small dams throughout Cass County. Of those, few are likely to pose any danger. However, the large dams/levees protecting the Metro area and surrounding townships would likely cause catastrophic destruction and loss of human life in the event of failure. An Operations and Maintenance Manual has been drafted to document the construction and appropriate operations and maintenance practices for those levees. The goal is to prevent future loss due to high hazard dams.

Table 3.36 below shows dams built on the Red, Sheyenne, Maple, and Wild Rice River to protect surrounding cities and townships from inundation due to rising river levels. The information in Table 3.36 was obtained from the National Inventory of Dams. A map of the dams can be found on page 3-129.

Roads acting as dams (RAAD) refer to instances where road structures inadvertently impede or obstruct the natural flow of water, effectively creating a barrier or dam-like effect. The Federal Highway Administration (FHWA) does not have design requirement for roads that act as permanent embankments or dams. The FHWA did not intend for highway embankments to serve as flood control structures in the development of floodplain regulations, as assuming such role is considered to pose a significant risk of embankment failure, and there are challenges in quantifying and assessing this risk cost-effectively. Elm Street in north Fargo is functioning as a RAAD for the Red River.

Table 3.36 – Cass County Significant Hazard Dams						
Dam Name	**Action Plan**	**Owner**	**Type**	**Year Built**	**Max Storage**	**Hazard Potential**
Maple River Dam	Yes	Cass County Joint WRB	Earth	2006	103,200	High
Maple River Dam (T-180)	Yes	Maple River WRB	Earth	1985	5,240	High
Hunter Dam	Yes	City of Hunter	Earth	1960	711.3	High
Erie Dam	Yes	ND Game and Fish	Earth	1970	3,050	Significant
Swan Buffalo Detention Dam #5	Yes	Maple River WRB	Earth	1961	2,019.7	Significant
Swan Buffalo Detention Dam #8	Yes	Maple River WRB	Earth	1968	3,936.9	Significant
Swan Buffalo Detention Dam #12	Yes	Maple River WRB	Earth	1968	3,936.9	Significant
Elm River Detention Dam #3	Yes	Trail County WRB	Earth	1962	1,102	Significant
Wayne Lunder Dam	Not Required	Wayne Lunder	Earth	2005	83.39	Low
Brownlee Dam	Not Required	Maple River WRB	"Other"	1934	412	Low
Wild Rice Dam (Cass County)	Not Required	Southwest Cass WRB	"Other"	1934	250	Low
No Name – 510369	Not Required	City of West Fargo	No Data Available	No Data Available	822	Low
ND No Name Dam 227	Not Required	Maple River WRB	"Other"	1934	150	Low
Kindred Wastewater Lagoon – Secondary	Not Required	City of Kindred	No Data Available	No Data Available	90	Low
Kindred Wastewater Lagoon – Secondary	Not Required	City of Kindred	No Data Available	No Data Available	90	Low
Fargo 32nd Avenue South Dam	Not Required	City of Fargo	No Data Available	1933	1,700	Low
Sheyenne River Diversion	Not Required	Southeast Cass WRB	No Data Available	1972	150	Low
Fargo 4th Street South Dam	Not Required	City of Fargo	No Data Available	1929	627	Low
Kindred Wastewater Lagoon – Primary Cell	Not Required	City of Kindred	No Data Available	No Data Available	55	Low
Kindred Wastewater Lagoon – Primary Cell	Not Required	City of Kindred	No Data Available	No Data Available	55	Low
No Name – 509530	Not Required	City of Casselton	No Data Available	No Data Available	155.04	Low
Fargo 12th Avenue North Dam	Not Required	City of Fargo	"Other"	1933	183	Low
No Name – 509594	Not Required	City of Mapleton	No Data Available	No Data Available	75.24	Low

No Name – 509517	Not Required	City of Casselton	No Data Available	No Data Available	61	Low
Bison Meadows West Stormwater Pond	Not Required	City of Fargo	No Data Available	No Data Available	586	Undetermined
Bison Meadows East Stormwater Pont	Not Required	City of Fargo	No Data Available	No Data Available	177.2	Undetermined
Pond 4	Not Required	Metro Flood Diversion	No Data Available	No Data Available	196.8	Undetermined
West Pond	Not Required	Metro Flood Diversion	No Data Available	No Data Available	387.8	Undetermined

Source:-National Dam Inventory

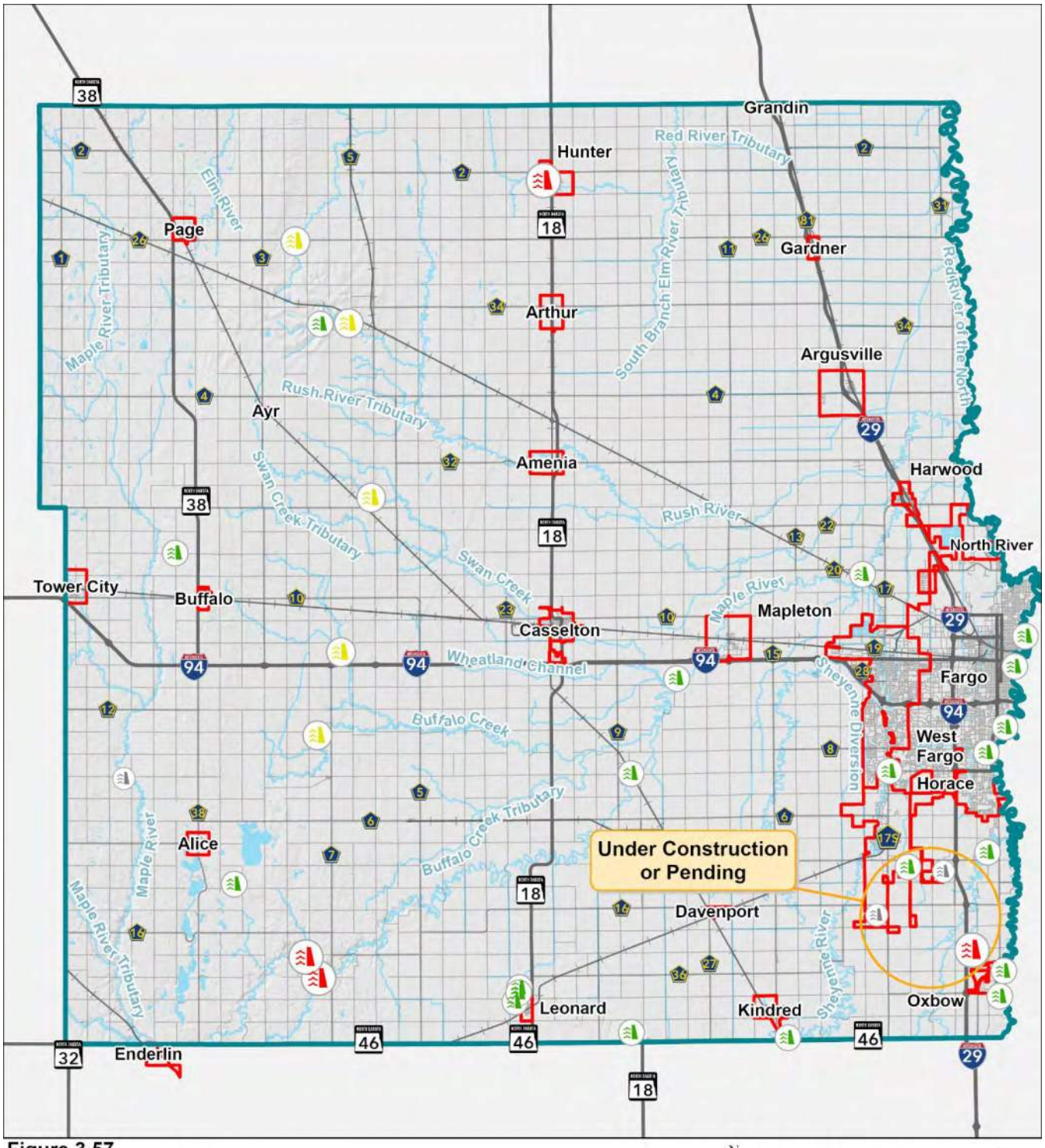


Figure 3.57
Cass County Dams

VULNERABILITY

Population, Property

Seven rural dams are either located within or near Cass County and have downstream impacts that affect the County. The following information outlines the potential effects of a sudden breach, based on details from each dam's Emergency Action Plan (EAP), which were last updated in 2018.

- **Elm River Detention Dam #3** - A major flood caused by a sudden breach of the dam could potentially inundate Cass Highway #26, Cass Highway #5, and Burlington Northern Santa Fe Railroad. 15 homes have been identified in close proximity to the Elm River Tributary channel. These homes may be at risk of being inundated by flooding and are located west of Hunter.
- **Erie Dam (Brewer Lake Dam)** - A major flood caused by a sudden breach of the dam could potentially inundate Cass Highway #5 and Cass Highway #4. 29 homes have been identified in close proximity to the Rush River and Rush River Tributary channels. These homes may be at risk of being inundated by flooding and are located northwest of Amenia.
- **Hunter Dam** – A major flood caused by a sudden breach of the dam is estimated to inundate structures of 83 properties, and 10 roads. These properties and roads are in and east of Hunter.
- **Swan Buffalo Detention Dam #5 (Garsteig Dam**) - A major flood caused by a sudden breach of the dam could potentially inundate Interstate 94, Red River Valley and Western Railroad, and Cass Highway #5. 35 homes have been identified in close proximity to the Buffalo Creek channel. These homes may be at risk of being inundated by flooding and are located southwest of Casselton.
- **Swan Buffalo Detention Dam #8 (Embden Dam) -** A major flood caused by a sudden breach of the dam could potentially inundate Cass Highway #17, Red River Valley and Western Railroad, and Cass Highway #5. 32 homes have been identified in close proximity to the Buffalo Creek channel. These homes may be at risk of being inundated by flooding and are located southwest of Casselton.
- **Swan Buffalo Detention Dam #12 (Absaraka Dam)** – A major flood caused by a sudden breach of the dam could potentially inundate Cass Highway #32. Eight homes and one business may be at risk of being inundated by flooding and are located northwest of Casselton.
- **Upper Maple River Dam** - (located barely north of Cass County in Steele County**)** A major flood caused by a sudden dam breach is estimated to inundate six homes, eight roads, and one rail line. These homes and roads are located west and southwest of Colgate.

Critical Facilities

- Depending on the water levels, failure of levees and embankments corralling the Red River, and the Sheyenne River could result in inundation of critical facilities in the City of Fargo, West Fargo, Argusville, and Harwood. The complexity of the scenarios involved makes it difficult to determine exactly which facilities would be impacted. There are no critical facilities assumed to be at risk in the remaining jurisdictions of Alice, Amenia, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Frontier, Gardner, Grandin, Horace, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and rural Cass County.

Economy

- The economic impact from failure of embankments and levees in Cass County, including in the jurisdictions of Alice, Amenia, Argusville, Arthur, Ayr, Briarwood, Buffalo, Casselton, Davenport, Fargo, Frontier, Gardner, Grandin, Harwood, Horace, Hunter, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo is not available.

Future Development

- Argusville, Arthur, Briarwood, Casselton, Frontier, Harwood, Horace, Hunter, Mapleton, North River, Oxbow, Prairie Rose, Reile's Acres, and Cass County have regulations that prevent development in floodplains. The remaining jurisdictions of Alice, Amenia, Ayr, Buffalo, Davenport, Fargo, Kindred, Leonard, Page, Tower City, and West Fargo do not have such regulations. Since the jurisdictions with identified flood risk via FIRMs have such regulations, their future

development is not expected to be adversely impacted. Since the remaining jurisdictions do not have such risk areas, they too are not expected to be adversely impacted.

EXISTING CAPABILITIES

There are emergency action plans that address failures of levees or embankment constructed to protect the Metro area and nearby areas in Cass County. All dams required to have an emergency action plan have one.

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Although a great deal of money and time has been invested to corral the waters of the Red River and Sheyenne River with levees built to the highest standards, and the levees protecting the City of Fargo, West Fargo, and several small communities are certified, unforeseen circumstances could still lead to dam failure. And there is the potential for extreme rain and snowmelt events to cause severe flooding inside the Red River, Sheyenne River, and surrounding development.

- *Potential Action Item*: Conduct periodic tabletop exercises to evaluate how to reduce flooding impacts and effectively respond to various scenarios.

Transportation Incident

All Jurisdictions
Overall Risk: Low
Probability: Low
Impact: Moderate (impact could vary widely)

Seasonal Pattern
None

Duration
Varies

Primary Impacts
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation
Property damage or loss
Release of hazardous materials

HAZARD PROFILE

"Transportation Incident, for the purposes of this plan, is any large-scale vehicular, railroad, aircraft or watercraft accident involving mass casualties. Mass casualties can be defined as an incident resulting in a large number of deaths and/or injuries that reaches an impact that overtaxes the ability of local resources to adequately respond." [p271, 2019 ND Enhanced Mitigation Mission Area Operations Plan] The impacts of transportation incidents are most significant because of the loss of life or major injury. In rural communities, even relatively small incidents may overtax local resources because of the limited resources available to the communities. Another significant hazard associated with these incidents may be hazardous materials release. Other hazards that may precipitate a transportation incident include severe winter weather and flooding. It should also be noted that the hazard of terrorist attacks has also been aimed at transportation infrastructure and transit systems.

These events can affect critical infrastructure systems and local economies in various ways. Generally, they can block major transportation systems for extended periods of time.

HISTORY

The most common transportation incident in Cass County is a multi-vehicle crash involving injury or death. There were 12,888 vehicle crashes with a total of 51 fatalities during the five-year period from 2018-2023. Over the same time period, 5,212 crashes involved injuries.

December 30, 2013. A westbound train carrying soybeans derailed roughly one mile west of Casselton. An eastbound train on the adjacent track, transporting crude oil, then collided with the wreckage, igniting a massive fire. The crash resulted in the spill of over 400,000 gallons of crude oil, much of which was burned. Although no injuries were reported, more than 1,400 residents of Casselton voluntarily evacuated as a precaution.
March 15, 2023. Two semis crashed and were fully engulfed in flames on I-94 by Mapleton. One of the semi's was a tanker carrying 7,500 gallons of airplane deicer and began to leak the chemical after the crash (estimated 6,500-6,700 gallons of ethylene glycol). One of the drivers died, the other was uninjured. Westbound I-94 was closed for eight hours.
April 2018. "A vehicle rollover resulted in the death of the pregnant driver and her unborn child in April 2018 on I-29 in Fargo after the unbelted driver was ejected (Fargo Forum, 2018)
September 2021. Seven miles south of Fargo, a vehicle crossed the middle line in an I-29 construction zone, hitting another vehicle head one. Both drivers were killed, and three passengers were injured in the incident

January 2022. A fatal collision occurred on I-94 near Tower City when a family's vehicle struck an abandoned tow truck left in the driving lane. The crash claimed the life of one person and injured two. The tow truck driver, operating with a suspended license and without insurance, faced charges of reckless endangerment and negligent homicide
March 2023. A deadly accident took place on I-94 near Mapleton when a tractor-trailer hauling an airplane stopped in a travel lane for over two minutes. A trailing vehicle collided with the stopped truck, igniting a fire that killed the car's driver. The crash closed westbound I-94 for eight hours and both lanes for an hour. The truck driver was charged with reckless endangerment and negligent homicide for failing to move the vehicle onto the shoulder.
January 4, 2025. A semi-truck hauling 41,000 pounds of pork caught fire on northbound I-29 near mile maker 50, south of Fargo. The incident led to a three-hour closure of I-29 from Exit 50 (Oxbow) to exit 54 (Davenport), with a detour provided for traffic. Crews from Southern Valley and Kindred Fire Department extinguished the blaze, and no injuries were reported. Clean up efforts were extensive due to burning pork fat draining onto the roadway. One lane of I-29 reopened at 1:30 a.m. on January 5, but cleanup continued until noon, when all lanes were fully reopened. The Cass County Sheriff's Department, the North Dakota Department of Transportation, and the Highway Patrol assisted with the response.

PROBABILITY

The County's 2024-2028 Highway and Bridge 5 Year Plan states 369.4 miles of roads in the County's highway system. While the presence of these major transportation routes is a component of local risk, it is compounded because hazardous materials are transported every day along them, and along local roads in the county. Based on statistics from 2017 through 2021, the average number of crashes in Cass County is 2,990.2 per year. The average number of fatalities is 10.2 per year.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

Transportation incidents affected by severe winter weather conditions may be likely to increase as well. These incidents are more likely to occur at locations with higher traffic volumes or where certain traffic patterns like merging traffic are common.

LOCATION

Transportation incidents can happen anywhere, but are more likely to occur along major highways, railroad lines, and near airports. The major highways in Cass County are Interstate 29 and 94, US Highways 10, 52, and 81 and ND Highways 10, 18, 38, 46, and 294. The Canadian Pacific Railway (CP) and Burlington Northern Santa Fe Railway (BNSF) railroads run east to west and north to south through the county and generally follow I-94 and I-29. Hector Internation Airport in Fargo is the region's largest and only airport served by major air carriers such as Allegiant, American, Delta, Frontier, and United Airlines. There are also five general aviation airports in the County: Arthur Airport, Casselton Robert Miller Regional Airport, Robert Odegard Field Airport (Kindred/Davenport), Page Municipal Airport, and West Fargo Municipal Airport.

VULNERABILITY

Population

- The County's population is not generally vulnerable to transportation incidents. The largest potential vulnerability stems from inhabited structures located close to major roadways or railroads where a crash involving hazardous materials could impact the occupants.

Property

- Potential property damage from a transportation incident is most likely when a major transportation route is situated close to major structures. Detailed statistics about proximity of buildings to these major transportation routes are not available.

Critical Facilities

- Several critical facilities are located along state and federal highways, and railroads. They could potentially have access limited because of a transportation incident. Additionally, the highways and railroads themselves are critical infrastructure that could be disrupted for a significant time period.

Economy

- Economic impact at a county-wide scale from transportation incidents is not identifiable.

Future Development

- Potential future development property damage from a transportation incident is unlikely as long as appropriate setback requirements are adhered to during development.

EXISTING CAPABILITIES

Local emergency response capabilities in Cass County include 5 ambulance services (Casselton, F-M, Hunter, Kindred, and Page) located in Cass County. Local fire department response capabilities vary from department to department, but include certification in extrication, medical, and hazardous materials. Sanford Health in Fargo has an Emergency/Trauma Center with emergency rooms and a surgical center and is classified as a Level I trauma center. Sanford Health is served by AirMed. Essentia Health is also in Fargo, has emergency rooms, a surgical center, and is classified as a Level II trauma center.

KEY ISSUES AND POTENTIAL ACTION ITEMS

Key Issue: Except for the ambulance service operating out of Fargo, ambulance services rely on mostly or completely volunteer staff. It is increasingly difficult to find enough volunteers to continue providing the service. Long-time volunteers are reaching the time where they may not be capable of responding as needed, and due to multiple factors younger replacement volunteers are limited.

- *Potential Action Item*: Increase efforts to recruit and retain medical personnel.

Urban Fire

All Jurisdictions
Overall Risk: Low
Probability: Low
Impact: Moderate (impact could vary widely)

Seasonal Pattern
None

Duration
Varies

Primary Impacts
Agricultural loss (crops, livestock)
Economic loss
Human loss and injuries
Increased stress on medical services
Localized evacuation
Property damage or loss
Release of hazardous materials
Structure collapse

HAZARD PROFILE

Urban fire is a threat to all communities. A small flame can begin inside a structure and rapidly turn into a major fire, creating a costly and deadly situation. The National Fire Protection Association (NFPA) reports that fires in the United States caused 3,005 civilian deaths and 17,500 civilian injuries in 2011. Eighty-four percent of civilian fire deaths were due to home structure fires. According to the National Fire Incident Reporting System (NFIRS) there are about 2,500 urban fire events each year in North Dakota.

Fires may begin intentionally (arson) or by accident. Common motives for arson are insurance fraud, vandalism, and murder. Common causes of accidental fires are cooking equipment, heating equipment, electrical distribution and lighting equipment, cigarettes, clothes dryer or washer, candles, and spontaneous combustion. According to the NFPA, unattended cooking is the leading cause of structure fires, with frying as the leading type of cooking activity. Heating equipment is the second leading cause of structure fire.

HISTORY

Although the cities of Cass County have experienced multiple individual building fires, there have not been any multi-building fires or fires which have threatened whole blocks of the cities. The annual frequency of incidents reported by fire departments are details in Table 3.37.

Table 3.37 - Annual Incident Reports by Department in Cass County				
Fire Department	2021	2022	2023	2024*
Alice Rural Fire District	0	N/A	7	N/A
Argusville Fire Protection District	5	1	8	0
Arthur Rural Fire Protection District	0	3	3	0
Buffalo Fire Protection District	0	N/A	N/A	n/a
Casselton Fire Department	0	21	26	15
Davenport Rural Fire Protection District	0	6	15	4
Erie Volunteer Fire Department	0	0	N/A	N/A
Fargo Fire Department	248	249	269	129
Grandin Rural Fire Protection District	0	8	0	N/A
Harwood Area Fire and Rescue, Inc.	8	12	14	7
Sothern Valley Fire & Rescue (Formally Horace	11	1	28	13
Hunter Volunteer Fire Department	1	0	6	0
Kindred Community & Rural Fire Protection District	24	15	22	3
Kindred Fire Department	0	N/A	N/A	N/A
Leonard Fire Protection District	7	N/A	2	3
Mapleton Fire Department	5	3	10	3
Page Fire Protection District	0	N/A	1	0
Tower City Rural Fire Protection District	4	7	7	1
West Fargo Fire Department	52	50	53	44
West Fargo Rural Fire Department	20	20	16	4
Hector International Airport Fire Department	0	3	0	0

*Year so far, as of October 4, 2024
Source: North Dakota Fire Marshall

PROBABILITY

Detailed statistics on incidence of fires in North Dakota are not readily available. A key statistic from the National Fire Protection Association based on available data across the United States suggests that in communities with 2,500 people the annual rate of fires is 10.2 fires per 1,000 population. Source: Ahrens and Evarts. Fire Loss in the United States During 2019 (2020), NFPA.

EXTREME CLIMATE VARIABILITY AND CLIMATE CHANGE

To the extent that urban fires are linked to dry fuels, there may be the potential for increased urban fire occurrences, and resulting damage to property, and injury or death to people.

LOCATION

Most structure fires are individual disasters and not community-wide, but the potential exists for widespread urban fires that displace several businesses or residences. The greatest risk of a multiple-structure urban fire is in historic downtowns. There is no history of multi-structure fire in Cass County. Agricultural facilities, such as grain elevators and dryers, and energy production and transport facilities are also at risk for significant fire.

VULNERABILITY

Population

All residents in urban areas of the county are vulnerable to an urban fire event. The County's cities contain approximately 177,590 residents or 96% of the county's total population). Mobile homes may be more vulnerable to fire than other residential structures. Collectively, estimated population in these facilities includes:

- Alice: 0 people (0 mobile homes)
- Amenia: 0 people (0 mobile homes)
- Argusville: 0 people (0 mobile homes)
- Arthur: 11 people (5 mobile homes)
- Ayr: 2 people (1 mobile home)
- Briarwood: 0 people (0 mobile homes)
- Buffalo: 7 people (3 mobile homes)
- Casselton: 20 people (9 mobile homes)
- Davenport: 2 people (1 mobile home)
- Fargo: 2,295 people (1,020 mobile homes)
- Frontier: 0 people (0 mobile homes)
- Gardner: 0 people (0 mobile homes)
- Grandin: 0 people (0 mobile homes)
- Harwood: 0 people (0 mobile homes)
- Horace: 68 people (30 mobile homes)
- Hunter: 0 people (0 mobile homes)
- Kindred: 34 people (15 mobile homes)
- Leonard: 5 people (2 mobile homes)
- Mapleton: 0 people (0 mobile homes)
- North River: 0 people (0 mobile homes)
- Oxbow: 0 people (0 mobile homes)
- Page: 0 people (0 mobile homes)
- Prairie Rose: 0 people (0 mobile homes
- Reile's Acres: 0 (0 mobile homes)
- Tower City: 0 people (0 mobile homes)
- West Fargo: 902 people (401 mobile homes)

Property

- Property value data for individual structures is not available but is assumed that a large multi-structure fire could cause damages of over $1 million.

Critical Facilities

- Critical facilities in historic downtowns generally have a greater vulnerability to urban fire because of close building proximity. Other large facilities, such as grain elevators, electric substations, and energy production facilities, may also be vulnerable to fire.

Economy

- Detailed statistics on Cass County's economic impact from urban fire is not available.

Future Development

- Cass County, Alice, Amenia, Arthur, Argusville, Briarwood, Buffalo, Casselton, Davenport, Fargo, Gardner, Grandin, Harwood, Horace, Kindred, Leonard, Mapleton, North River, Oxbow, Page, Prairie Rose, Reile's Acres, Tower City, and West Fargo have adopted the North Dakota State Building Code. The State Building Code consists of the 2018 International Building Code, International Residential Code, International Mechanical Code, International Energy

Conservation Code, and International Fuel Gas Code published by the International Code Council. Future development will be protected to the extent these Codes can reduce urban fire.

EXISTING CAPABILITIES

All areas of the county are within the service area of a volunteer fire department.

KEY ISSUES AND POTENTIAL ACTION ITEMS

***Key Issue*:** There is no history of large-scale urban fire in the county, but it is an ongoing concern.

- *Potential Action Item*: Provide education about fire prevention best practices for local business owners and residents.
- *Potential Action Item*: Continue response preparation and training with local fire districts.
- *Potential Action Item*: Remove abandoned properties that could be a target for arson, lightning strikes, or wildland fires.

Summary

There are 15 priority hazards identified for Cass County. The key issues for each hazard are summarized below. Hazards are summarized for the county overall. Hazard risk for each jurisdiction is summarized in Table 3.12.

H = High, M = Moderate, L = Low

CRIMINAL/TERRORIST ATTACK

The potential impacts from a criminal/terrorist attack can widely vary based on the type of attack, but the County has neither the population nor the infrastructure base to make it a likely target.

CYBERATTACK

Cyberattacks are a high probability event. There are important critical facilities that could be directly attacked or impacted. While impacts are generally limited, the potential impacts could vary widely.

DAM FAILURE

Although there are many dams in Cass County, there are only three high hazard dams and five significant hazard dams within its boundaries. There is an emergency action plan in place for all high and significant hazard dams, no dams are reported to be in poor condition, and there is a low probability of failure.

DROUGHT

Severe drought conditions have occurred in Cass County in recent years. Agriculture is a key component of the county's economy. A significant drought has the potential to greatly affect the industry and the county as a whole. The rural water services do not foresee circumstances where there is not potable water available for household use but are strengthening their capacity by creating an interconnected water supply system.

FLOOD

Cass County has essentially a 100% annual probability of flooding of some type. Flood events in the county include overland flooding and riverine flooding from the Red River of the North and the Sheyenne River.

Rural roads in the county may be overtopped or washed out.

There are critical facilities at risk from riverine flooding. Additionally, there are locations in several communities prone to overland or localized flooding during heavy rainfall or spring snowmelt events with residents living in floodways.

GEOLOGIC HAZARDS

A relatively small part of the county is within a high incidence landslide hazard area and another relatively small part of the county is in a moderate susceptibility/low incidence landslide hazard area as defined by USGS. The rest of the county has no anticipated risk of landslides.

There is no history and a very small likelihood of any earthquake impacting the county.

HAZARDOUS MATERIALS INCIDENT

Hazardous materials incidents happen an average of less than once per year in Cass County, but a majority of its residents live, work or travel within a potential hazard area.

INFECTIOUS DISEASE

Human and agricultural diseases have the potential to greatly impact the health and economy of the county. The COVID-19 pandemic has resulted in significantly more cases than typical influenza cases.

SEVERE SUMMER WEATHER

Cass County averages approximately 17 days per year with a summer storm event. Severe wind and hail are the most common summer storm events in the county, and tornadoes are also a possibility in the region.

SEVERE WINTER WEATHER

Cass County averages approximately nine days per year with a winter storm event. Severe winter weather events in the county include winter storms, high wind, heavy snow, blizzard, extreme cold/wind chill, and ice storm.

A winter storm event that causes a power outage may make it difficult for residents to heat their homes. Elderly residents and residents in temporary housing are the most vulnerable to extreme cold temperatures.

SPACE WEATHER

Cass County like the rest of the United States is not equipped to deal with a major space weather event like the Carrington Event (geomagnetic storm) of 1859. Similar events have happened in the last few decades but have not had as widespread impacts. Due to the extreme dependence on electricity and computer systems, there is concern that such an event could have severe impacts on life in Cass County.

TRANSPORTATION INCIDENT

Transportation incidents are not common in Cass County and potential concerns are more about the potential of those incidents involving hazardous materials than about large-scale crashes.

URBAN FIRE

Urban fire has a very low incidence rate in Cass County, and the probable impacts are relatively benign.

WILDLAND FIRE

Wildland fires happen several times each year in Cass County. But wildfires greater than 100 acres have approximately a 7.1% annual chance of occurrence. Most large wildfires in the county cause minimal property damage.

CHAPTER 4: Capacity assessment

The mitigation strategy includes specific action items to reduce the impact of the priority hazards identified in Chapter 3. The process for identifying action items was as follows:

- Consultant developed mitigation action item suggestions based on hazard assessment, Cass County's THIRA, and IPP meetings.
- Goals and past mitigation actions were reviewed to help guide action item development.
- Jurisdictional and citizen input on hazard concerns and potential action items was reviewed by consultant.
- Consultant development of mitigation action items.
- Consultation with planning team and jurisdictional representatives on draft mitigation action items.
- Emergency managers and consultant review and refinement of proposed mitigation action items.
- After receiving comments from the DES and FEMA review, the mitigation strategy was refined, revised, and expanded in order to address these comments.

Capability Assessment

Before identifying goals and action items, it is important to know the capabilities of each jurisdiction to undertake different types of hazard mitigation projects. Specific capabilities are listed as part of each hazard profile in Chapter 3. Tables 4.1 through 4.5 on the following pages summarize these and additional capabilities. For Tables 4.1-4.4 each jurisdiction has a code indicating that status for each capability based on the current and anticipated situation for the next five years. (See legends at bottom of the tables.)

PLANNING AND REGULATORY

Table 4.1 summarizes planning and regulatory capabilities for the participants by showing which types of regulations, policy plans, and programs are in use by them.

ADMINISTRATIVE AND TECHNICAL

Table 4.2 summarizes the administrative and technical capabilities of the participants. It demonstrates that small communities have staffing limitations which limit their ability to implement some mitigation actions. Fire Department staff are shown for each participant because there is a fire district or department which serves each community although it may not be funded through the city. Cass County provides support to smaller communities to address CRS program requirements and to address permitting and inspections requirements. Not all communities take advantage of this support. Table 4.3 also lists certain physical capabilities or resources as well.

FISCAL

Table 4.3 summarizes the financial capabilities of participants including a variety of local, state, federal, and private/non-profit funding sources. There is such a wide array of state, federal, and private/non-profit sources that no attempt is made to list them individually. Cass County and each incorporated jurisdiction are eligible for a variety of federal programs such as BRIC, FMA, HMGP, PROTECT, CDBG, MIT, and EQIP. More details are provided in the Funding subsection on page 4-6.

EDUCATION AND OUTREACH

Table 4.4 summarizes a variety of communication capabilities for Plan participants. These include internet based and traditional media. The City of Fargo, the City of West Fargo and Cass County provide strong education opportunities with online information about responding to flooding and other potential hazards. The Cass County Emergency Management Department provides an opportunity for anyone in the County to sign up for Cass Clay Alerts.

NFIP PARTICIPATION

Table 4.5 document's details of the jurisdictions that are participants in the National Flood Insurance Program (NFIP) by showing:

- the date when they joined the NFIP as a Regular Program member and therefore had adopted the minimum criteria,
- the date of the currently effective FIRM if there is a FIRM for the jurisdiction,

- the position(s) or agency(ies) with responsibilities for administering the floodplain management regulations,
- the various applications required when appropriate as a part of floodplain regulation administration and enforcement,
- and the basic requirements that are required in the case of the need to implement the substantial improvement/substantial damage provisions of the floodplain regulations.

The cities of Alice, Amenia, Ayr, Buffalo, Davenport, Gardner, Kindred, Leonard, Page, and Tower City, along with Cass County, have the NSFHA status according to the Community Status Book showing they do not have a Special Flood Hazard Area and do not administer floodplain regulations.

Table 4.1 –Jurisdictional Planning & Regulatory Capabilities

	Alice	Amenia	Arthur	Argusville	Ayr	Briarwood	Buffalo	Casselton	Davenport	Fargo	Frontier	Gardner	Grandin
Building Code	X	X	X	X	+N	X	X	X	X	X	X	+N	X
Zoning Ordinance	X	X	+N	X	+N	X	X	X	X	X	X	X	X
Subdivision Ordinance	+N	+N	+N	+N	+N	+N	+N	X	+N	X	+N	X	+N
Floodplain Management Ordinance	+N	+N	+N	+N	+N	X	+N	X	X	X	X	+N	+N
Comprehensive Plan	+F	+F	X	X	+F	+F	+F	X	+F	X	+F	+F	+F
Transportation Plan	+F	+F	+F	+F	+F	+F	+F	+F	+F	X	+F	+F	+F
Historic Preservation Plan	+?	+?	+?	+?	+?	+?	X	X	+?	+N	+?	+?	+?
Stormwater Management Plan	+?	+?	X	+?	+?	+?	+?	X	+?	X	+?	+?	+?
Flood Insurance Rate Map	+N	+N	X	X	+N	X	+N	X	+N	X	X	+N	+N
Capital Improvement Program	+F	+F	+F	+F	+F	+F	+F	X	+F	X	+F	+F	X
Annual Budget	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Operations Plan(s)	+?	+?	X	+?	+?	+?	X	X	+?	X	+?	+?	+?
Building Permit Program	X	+?	X	X	+?	X	X	X	X	X	X	X	X
Building Inspections Program	X	+?	X	X	+?	X	X	X	X	X	X	X	X
Community Rating Systems Program	+N	+N	+N	+N	+N	+N	+N	+N	+N	X	+N	+N	+N
Burn Ban Protocol	+?	+?	X	+?	+?	+?	X	X	X	X	??	+?	X
Emergency Action Plan(s)	+?	+?	X	+?	+?	+?	X	X	+?	+?	+?	+?	+?
Mutual Aid Agreement	X	+?	X	+?	+?	X	+?	X	+?	X	??	+?	+?

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.1 –Jurisdictional Planning & Regulatory Capabilities														
	Harwood	Horace	Hunter	Kindred	Leonard	Mapleton	North River	Oxbow	Page	Prairie Rose	Reile's Acres	Tower City	West Fargo	Cass County
Building Code	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Zoning Ordinance	X	X	??	X	X	X	X	X	X	X	X	X	X	X
Subdivision Ordinance	+N	X	??	X	+N	X	+N	X	+N	X	X	X	X	+N
Floodplain Management Ordinance	X	X	??	X	+N	X	+N	+N	+N	+N	X	+N	X	X
Comprehensive Plan	+F	X	??	X	+F	X	+F	+F	+F	X	+F	+F	X	X
Transportation Plan	+F	X	??	+F	+F	X	+F	+F	+F	+F	+F	+F	X	X
Historic Preservation Plan	+?	+?	??	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
Stormwater Management Plan	X	X	??	X	+?	X	+?	+?	+?	X	X	+?	X	+?
Flood Insurance Rate Map	X	X	X	X	+N	+N	+N	+N	+N	X	X	+N	X	+N
Capital Improvement Program	X	X	??	X	+F	X	+F	+F	+F	X	+F	X	X	X
Annual Budget	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Operations Plan(s)	X	+?	??	X	+?	X	+?	+?	+?	X	X	+?	X	X
Building Permit Program	X	X	X	X	+?	X	+?	X	X	X	X	X	X	X
Building Inspections Program	X	X	??	X	??	X	??	X	X	X	X	X	X	X
Community Rating Systems Program	+?	X	??	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
Burn Ban Protocol	X	X	??	+?	X	X	+?	+?	+?	X	X	X	X	X
Emergency Action Plan(s)	+?	+?	??	X	+?	X	X	+?	+?	X	X	+?	X	X
Mutual Aid Agreement	+?	X	??	X	+?	+?	+?	+?	+?	X	+?	X	X	X

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.2 –Jurisdictional Administrative & Technical Capabilities													
	Alice	Amenia	Arthur	Argusville	Ayr	Briarwood	Buffalo	Casselton	Davenport	Fargo	Frontier	Gardner	Grandin
Auditor	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Managers	+F	+F	+F	+F	+F	X	X	X	+F	X	+F	+F	+F
Engineering Staff	??	??	??	??	+F	??	??	??	??	X	??	??	??
Public Works Staff	+F	+F	X	+F	+F	+F	X	X	X	X	+F	+F	X
Fire Department Paid Staff	+F	+F	+F	+F	+F	+F	+F	+F	+F	X	+F	+F	+F
Fire Department Volunteer Staff	X	+?	X	X	+?	+?	X	X	X	+N	X	X	X
Police Department Staff	+?	+?	X	+?	+?	+?	X	X	+?	X	X	+?	X
Floodplain Administrator	+N	+N	X	+N	+N	X	+N	X	X	X	X	+N	+N
Public Information Staff	+F	+F	+F	+F	+F	X	+F	X	+F	X	??	+F	+F
Building Inspection Staff	+F	+F	+F	+F	+F	+F	+F	X	+F	X	X	+F	+F
Planning Staff	+F	+F	+F	+F	+F	+F	+F	X	+F	X	+F	+F	X
Planning Commission	+F	+F	+F	+F	+F	+F	+F	X	+F	X	+F	+F	+F
Governing Body	X	X	X	X	X	X	X	X	X	X	X	X	X
Water Resource Board	X	X	X	X	X	X	X	X	X	X	X	X	X
Ambulance Staff	??	+?	??	??	+?	+?	??	??	??	X	??	??	??
USDA Farm Service Agency	X	X	X	X	X	X	X	X	X	X	X	X	X
NDSU Extension	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Shelters Pre-emergency	+?	+?	+?	+?	+?	+?	X	X	+?	+?	??	+?	+?
Emergency Shelter Post- emergency	+?	+?	+?	+?	+?	+?	X	X	+?	+?	??	X	+?
Emergency Generators	+F	+F	+F	+F	+F	+F	X	X	X	X		+F	+F
Medical Clinics	+N	+N	+N	+N	+N	+N	+N	X	+N	X	+N	+N	+N
Hospital	+N	+N	+N	+N	+N	+N	+N	+N	+N	X	+N	+N	+N
Churches	+N	+N	X	X	+N	+N	X	X	X	X	+N	+N	X
Schools	+N	+N	+N	X	+N	+N	+N	X	+N	X	+N	+N	+N
Large Employment Centers	+N	+N	X	+N	+N	+N	X	X	+N	X	+N	+N	X
Local Food Insecurity Providers	+N	+N	+N	+N	+N	+N	+N	X	+N	X	+N	+N	+N
Hazardous Materials Release Training	+?	+?	+?	+?	+?	+?	X	+?	+?	+?	+?	X	+?
Rural Domestic Preparedness Trainings	+?	+?	+?	+?	+?	+?	X	X	+?	+?	+?	+?	+?

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.2 –Jurisdictional Administrative & Technical Capabilities														
	Harwood	Horace	Hunter	Kindred	Leonard	Mapleton	North River	Oxbow	Page	Prairie Rose	Reile's Acres	Tower City	West Fargo	Cass County
Auditor	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Managers	X	+F	+F	X	+F	X	+F	+F	+F	X	+F	+F	X	X
Engineering Staff	??	??	??	??	??	??	??	??	??	??	+F	+F	X	X
Public Works Staff	X	X	+F	X	X	X	+F	+F	X	X	+F	+F	X	X
Fire Department Paid Staff	X	X	+F	X	+F	+F	X	+F	+F	+F	+F	+F	X	+F
Fire Department Volunteer Staff	X	X	X	X	+?	X	+?	+?	X	+?	X	X	+N	+?
Police Department Staff	+F	X	X	X	+F	X	+F	X	X	X	X	X	X	X
Floodplain Administrator	X	X	??	X	+N	X	X	X	+N	X	X	+N	X	X
Public Information Staff	X	X	X	X	+F	X	X	+F	+F	+F	+F	+F	X	X
Building Inspection Staff	X	X	??	X	+F	X	+F	+F	+F	+F	X	X	X	X
Planning Staff	+F	X	+F	X	+F	+F	+F	+F	+F	X	+F	+F	X	X
Planning Commission	X	X	X	X	+F	X	+F	X	+F	X	X	X	X	X
Governing Body	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Water Resource Board	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ambulance Staff	X	X	X	X	X	X	X	X	X	X	X	X	X	X
USDA Farm Service Agency	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NDSU Extension	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Shelters Pre-emergency	X	+?	??	X	+?	X	+?	+?	+?	+?	+?	X	X	+?
Emergency Shelter Post-emergency	X	+?	??	X	+?	X	+?	+?	+?	+?	+?	X	X	+?
Emergency Generators	X	X	??	X	+F	X	+F	X	X	X	+F	X	X	X
Medical Clinics	+N	X	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	X	+N
Hospital	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N
Churches	X	X	X	X	X	X	+	+	X	+	+	X	X	+N
Schools	X	X	X	X	+N	X	+N	+N	X	+N	+N	X	X	+N
Large Employment Centers	+N	X	+N	X	+N	+N	+N	X	+N	+N	+N	+N	X	X
Local Food Insecurity Providers	+N	+N	+N	X	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N
Hazardous Materials Release Training	X	+?	+?	X	+?	X	+?	+?	+?	+?	+?	+?	X	+?
Rural Domestic Preparedness Trainings	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	+?

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.3 –Jurisdictional Financial Capabilities													
	Alice	Amenia	Arthur	Argusville	Ayr	Briarwood	Buffalo	Casselton	Davenport	Fargo	Frontier	Gardner	Grandin
Property Tax	X	X	X	X	X	X	X	X	X	X	X	X	X
Sales Tax	+?	+?	+?	X	X	+?	X	X	+?	X	X	+?	+?
Impact Fees	+?	+?	+?	+	+?	+?	+?	+?	+?	+N	??	+?	+?
Bonding	+?	+?	+?	X	+?	+?	+?	X	+?	+N	??	+?	+?
Special Assessment	X	+?	X	X	+?	X	+?	X	+?	X	??	+?	X
State Funding	X	+?	X	+	X	X	X	X	X	X	??	X	X
Federal Funding	+?	+?	X	X	+?	X	X	X	+?	X	??	X	+?
Private/Nonprofit Funding	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	??	+?	X
FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds													

Table 4.3 –Jurisdictional Financial Capabilities														
	Harwood	Horace	Hunter	Kindred	Leonard	Mapleton	North River	Oxbow	Page	Prairie Rose	Reile's Acres	Tower City	West Fargo	Cass County
Property Tax	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sales Tax	X	X	X	X	X	X	+?	X	X	+?	+?	X	X	+?
Impact Fees	+?	+?	??	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?
Bonding	X	X	X	X	+?	X	+?	+?	+?	X	X	+?	X	+?
Special Assessment	X	X	??	X	+?	X	+?	+?	X	+?	X	+?	X	+?
State Funding	+?	X	??	X	X	X	X	X	X	X	X	+?	X	X
Federal Funding	+?	X	??	X	+?	X	X	+?	X	+?	+?	X	X	X
Private/Nonprofit Funding	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	+?	+?	X
FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds														

Table 4.4 –Jurisdictional Education & Outreach Capabilities													
	Alice	Amenia	Argusville	Arthur	Ayr	Briarwood	Buffalo	Casselton	Davenport	Fargo	Frontier	Gardner	Grandin
Website	+?	X	X	X	+?	+?	X	X	+?	X	X	+?	+?
Facebook	+?	X	X	X	+?	+?	X	+?	+?	X	X	X	X
X (Twitter)	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	+?	+?	+?
Other Social Media	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	+?	+?	+?
Local Newspaper	X	X	X	X	X	+N	X	X	X	X	X	X	X
Local Radio Station	X	X	X	X	X	X	X	X	X	X	X	X	X
Local TV Station	+N	+N	+N	+N	+N	+N	+N	+N	+N	X	X	+N	+N
Cass Clay Alerts	X	X	X	X	X	X	X	X	X	X	X	X	X
StormReady	+?	+?	+?	+?	+?	+?	X	X	+?	??	??	+?	+?
Warning Sirens	+F	X	+F	X	+F	+F	X	X	X	??	??	X	X

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.4 –Jurisdictional Education & Outreach Capabilities														
	Harwood	Horace	Hunter	Kindred	Leonard	Mapleton	North River	Oxbow	Page	Prairie Rose	Reile's Acres	Tower City	West Fargo	Cass County
Website	X	X	X	X	X	X	X	X	X	+?	X	+?	X	X
Facebook	+?	X	X	+?	X	X	X	+?	X	+?	X	+?	X	X
X (Twitter)	+?	X	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	X
Other Social Media	X	X	+?	+?	+?	+?	+?	+?	+?	+?	+?	X	X	X
Local Newspaper	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Local Radio Station	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Local TV Station	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	+N	X	+N
Cass Clay Alerts	X	X	X	X	X	X	X	X	X	X	X	X	X	X
StormReady	X	+?	??	X	+?	X	+?	+?	+?	+?	X	X	X	X
Warning Sirens	X	X	??	X	X	X	+F	X	+F	+F	+F	X	X	+F

FUNCTION IN USE: X; + function not being used; ?? unknown if function is in use
REASONS NOT BEING USED: ? unknown, N no perceived need, F lack of funds

Table 4.5 – NFIP Participation					
Jurisdiction	**Minimum Criteria Adoption Date**	**Current FIRM Date**	**Implementation Designee**	**Floodplain Regulation Enforcement**	**Substantial Damage/Improvement Provisions**
Cass County	05/04/98	(NSFHA)	County Planner	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Alice	Not a participant	Not applicable	Not applicable	Not applicable	Not applicable
Amenia	05/02/95	(NSFHA)	Not designated	Not being administered	Not applicable
Argusville	02/19/86	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Arthur	08/05/86	09/30/93	Cass County Emergency Management, City Mayor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Ayr	Not a participant	Not applicable	Not applicable	Not applicable	Not applicable
Briarwood	09/27/85	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Buffalo	Not a participant	Not applicable	Not designated	Not being administered	Not applicable
Casselton	05/05/81	08/03/89	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Davenport	03/03/20(E)	Not a participant	Not applicable	Not being administered	Not applicable

Table 4.5 – NFIP Participation					
Jurisdiction	**Minimum Criteria Adoption Date**	**Current FIRM Date**	**Implementation Designee**	**Floodplain Regulation Enforcement**	**Substantial Damage/Improvement Provisions**
Fargo	05/01/71	01/16/15	Inspections Department	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Frontier	01/16/15	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Gardner	03/13/13(E)	(NSFHA)	Not designated	Not being administered	Not applicable
Grandin	Not a participant	Not applicable	Not applicable	Not applicable	Not applicable
Harwood	09/30/80	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Horace	07/02/81	01/16/15	City Project Manager	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Hunter	12/04/79	12/04/79	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Kindred	12/11/85	(NSFHA)	City Auditor	Not being administered	Not applicable
Leonard	Not a participant	Not applicable	Not applicable	Not applicable	Not appliable

Table 4.5 – NFIP Participation					
Jurisdiction	**Minimum Criteria Adoption Date**	**Current FIRM Date**	**Implementation Designee**	**Floodplain Regulation Enforcement**	**Substantial Damage/Improvement Provisions**
Mapleton	07/02/81	02/02/02	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
North River	09/27/85	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Oxbow	01/16/15	01/16/15	City Mayor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Page	Not a participant	Not applicable	Not applicable	Not applicable	Not applicable
Prairie Rose	01/16/15	01/15/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Reile's Acres	09/30/87	01/16/15	City Auditor	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines
Tower City	Not a participant	Not applicable	Not applicable	Not applicable	Not applicable
West Fargo	04/17/78	01/16/15	Assistant City Engineer	Require floodplain development permits, floodproofing certificates, & certificates of compliance	Adheres to new construction and substantial improvements by issuing permits and following NFIP guidelines

CHAPTER 5: Mitigation Strategy

The mitigation strategy includes specific action items to reduce the impact of the priority hazards identified in Chapter 3. The process for identifying action items was as follows:

- Consultant developed mitigation action item suggestions based on hazard assessment, planning team comments and recommendations, and previous mitigation actions.
- Goals, jurisdictional and citizen input on hazard concerns and potential action items was reviewed by consultant to verify consistency and revise mitigation actions.
- Draft mitigation actions were provided to emergency management team and sent to each jurisdiction for review and comment.
- Early DES feedback was used to refine mitigation strategy chapter

Goals

The goals and related notes listed below provided focus for development of proposed mitigation activities. The previous plan's goals were kept, and in some cases, refined. Two additional goals were added to highlight specific emphases identified by FEMA and emergency management staff. The goals below are all priorities and presented in no particular order.

Goal 1: Encourage County and local planning related to hazard mitigation

- Incorporate a focus on mitigation throughout community planning efforts. These efforts include strategic, comprehensive, economic development, housing, and other types of plans.
- Utilize hazard mitigation plan data when seeking grant opportunities and writing applications.
- Assist townships and small cities with adopting and enforcing land use regulation which recognizes natural hazards and mitigates the effects thereof.
- Integrate mitigation data in business continuity, school district, transportation and park district planning.

Goal 2: Enhance the entire population's awareness of hazards and mitigation strategies

- Continue to support and enhance current tools such as education campaigns through local media and Cass Clay Alerts system.
- Provide training on mitigation-related topics to all of Cass County's communities.
- Continue to update and provide public access to online interactive flood stage maps.
- Increase the use of social media as a method to educate stakeholders.
- Continue public meetings during events and add post-disaster briefings to gather feedback on performance and future mitigation actions.
- Distribute Cass County mitigation plans and activities to other interested parties.
- Establish ongoing outreach with the Access and Functional Needs communities.

Goal 3: Reduce potential losses and vulnerabilities of future development

- Require new roads be built no more than 6" below Base Flood Elevation (BFE) and that the top of the curb be at or above BFE.
- Encourage cities to require new structures be built at or above BFE.
- Encourage a stricter building code that requires new structures be built 2 ½ feet above BFE throughout the County.
- Conduct studies to better define risk exposure.
- Continue to work with FEMA in improving floodplain maps and ensure building ordinances recognize the mapped floodplains.
- Educate small cities and townships on building codes and the benefits of implementing such codes.
- Encourage tornado preparedness in new construction including evacuation plans and safe room identification.
- Enforce current setback requirements as they relate to drains or rivers and encourage adoption of stricter setbacks where necessary.

Goal 4: Reduce impacts of flooding and geotechnical hazards to people and property

- Continue identifying forms of permanent flood protection for areas continually affected by flooding.
- Continue creating, updating and enforcing zoning, subdivision, and floodplain ordinances, as needed.

- Assist cities in applying for and participating in the Community Rating System program.
- Continue acquiring properties in flood prone areas.
- Support levee accreditations and dam emergency plans.
- Coordinate planning and strategies already existing or being developed by other entities and agencies.

Goal 5: Mitigate the effects severe summer and winter weather has upon people and property

- Continue public education and awareness for severe weather.
- Continue enhancing and promoting warning systems.
- Encourage burying power lines or trimming trees to avoid downed power lines where possible.
- Increase public awareness of safety actions during severe weather.
- Examine potential shelter challenges in cases of prolonged electrical interruptions.

Goal 6: Mitigate the effects strong winds have upon people and property

- Promote the construction of safe rooms.
- Encourage wind engineering measures and construction techniques that protect against structural failure.
- Conduct outreach activities to increase awareness of tornado risk.
- Promote the use of weather warning systems.

Goal 7: Reduce impacts of drought and wildland fires on communities

- Develop a drought emergency plan
- Continue to monitor drought conditions and water supplies
- Support the Lake Agassiz Water Authority in their efforts to provide a high-quality water supply to the Red River Valley in times of drought
- Support local fire districts and include these entities in trainings and exercises
- Educate residents on water saving techniques
- Educate farmers on soil and water conservation practices
- Encourage farmers to utilize crop insurance

Goal 8: Mitigate potential impacts from high hazard dams

- Work with local governments to identify areas at risk from high hazard dam failure
- Support local government efforts to educate affected people about potential impacts and personal mitigation strategies

Goal 9: Strengthen the County's emergency management network

- Support increased communication and education
- Support training related to emergency management

Previous Mitigation Actions and Priorities

There were 178 mitigation actions for Cass County and its participating jurisdictions in the last Multi-Hazard Mitigation Plan. Many of these mitigation actions applied to more than one jurisdiction. Appendix D contains a summary table of the status of past mitigation actions. Thirteen actions were completed. 160 actions are incomplete or ongoing, and incorporated into this plan. Five other actions are being dropped as no longer needed.

In the previous plan, the priority level for each action was identified for each jurisdiction. For all the actions that were carried over, the priorities of the jurisdiction were carried over as well.

The greatest challenge to completing mitigation activities has been the limited resources (time and money) of the County and each jurisdiction. Local government is run by a small number of people, some part-time. Many of the mitigation actions included in this plan can be implemented through existing County and City programs, and many require only a minimal cost. Those that require substantial costs are linked to grant programs that can provide much of the necessary funding.

Funding

Cass County will need to utilize local, state and federal funding to implement the action items identified in this plan. The County and each jurisdiction have access to multiple state and federal funding opportunities. US Department of Housing and Urban Development (HUD) Community Development Block Grants (CDBG) and US Department of Agriculture (USDA) Community Facility Grants are available for a wide variety of uses. There are also other viable funding streams tailored

specifically for hazard mitigation and disaster response. FEMA's Hazard Mitigation Grant Program (HMGP) could provide funding for a wide variety of mitigation projects and is only available following a North Dakota disaster declaration. Additional FEMA grant programs that provide funds for mitigation include the Building Resilient Infrastructure and Communities (BRIC) program and Flood Mitigation Assistance (FMA) program.

FEMA's Hazard Mitigation Assistance Unified Guidance, which includes eligible activities for each of FEMA's mitigation grant programs, can be found at:
https://www.fema.gov/media-library/assets/documents/103279

Action Items

The mitigation action items for the participating jurisdictions, identified below are recommendations developed through discussion with Planning Team members, community representatives, and key stakeholders from the County. A broad range of potential mitigation activities were considered; many of these potential activities are listed in Chapter 3 with the applicable hazard. The mitigation actions identified in this chapter were chosen because they address vulnerabilities to populations, structures, infrastructures, and potential future development. Each jurisdictions' mitigation actions were evaluated based on a community risk analysis, community representative and emergency managers' feedback.

The mitigation action items listed below provide a roadmap for targeting and implementing mitigation projects over the next five years. Each action item listed identifies the hazard or hazards that it is intended to mitigate. Due to space limitations the hazard names are truncated. The following list matches the truncated name to the full hazard name.

- **CTA:** Criminal/Terrorist Attack
- **Cyber:** Cyberattack
- **Dam:** Dam Failure
- **Disease:** Infectious Disease and Invasive Species
- **Drought:** Drought
- **Flood:** Flood
- **Geologic:** Geologic Hazards
- **HazMat:** Hazardous Materials Releases
- **Space:** Space Weather
- **Summer:** Severe Summer Weather
- **Transp:** Transportation Incident
- **Urban:** Urban Fire
- **Wildland:** Wildland Fire
- **Winter:** Severe Winter Weather

Project costs are identified in terms of staff time, or a numeric cost estimate range. The numeric values are generally based on a previously identified cost, but in some cases shows order of magnitude rather than a budgetary value. The amount of staff time required may vary widely, but budgeting for direct expenses for mitigation projects labeled staff time are assumed to be extremely limited. Cost magnitudes are classified into three levels: low (below $10,000), medium ($10,000-$100,000), or high (over $100,000). Projects are prioritized based on urgency of need, anticipated time to develop, and a generalized benefit-cost analysis that factors in potential cost and project benefit.

Projects are prioritized based on multiple factors including previous priority for projects that were carried over, the perceived urgency, the immediacy and directness of impact reduction, and an armchair benefit-cost analysis that weighs the potential cost and project benefit. It is important to note that many project costs are eligible for grant or other outside funding. Funding options and project costs may vary year-to-year, so before moving forward with implementation the jurisdiction should perform a detailed benefit-cost analysis. The implementation timeline for each project may be highly variable based on the availability of needed local funds.

Project Summaries for Action Items

The Cass County Emergency Managers are the local champions for the plan, and responsible for maintaining energy and enthusiasm for each jurisdiction's overall mitigation program. Responsibility for implementing mitigation projects ultimately rests with each jurisdiction. The individual or agency responsible for overseeing implementation of mitigation projects for each jurisdiction is listed as part of each project summary. The actual person(s) performing the project may be different than the Responsible Entity. Funding sources listed below are potential funding sources that are not an all-inclusive list and may change based on availability and scope.

CASS COUNTY

1. Assist cities and townships with the process of entering the Community Rating System program

Smaller communities may be interested in participating. in the CRS for the mitigation and cost savings benefits, but they may not have the resources or knowledge on where to begin. The County can offer assistance or connect cities with entities that can.

Ongoing administration CRS beyond that of the Class 9 or 8 level may or may not be beyond the capabilities of small jurisdictions. However, entering the program at those levels will allow residents to take advantage of a small price discount on their flood insurance premiums. A benefit-cost analysis comparing the staff time necessary to enroll in the program with the cost savings to property owners will help jurisdictions determine whether to participate or not.

Responsible Entity: Cass County Emergency Management and Cass County Planning
Funding Source: Cass County's General Fund
Priority: Medium
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2030

2. Engage in public education efforts that will increase awareness of each natural hazard and the steps people can take to mitigate their own risks

There are many actions that are solely within the purview of property owners. The best role for government in those situations would be to share ideas and provide assistance, as appropriate, to as many people as possible as they carry out their own mitigation-related efforts. Examples of relevant topics include best practices for living adjacent to the river, the necessity of purchasing flood insurance, and the benefits of retrofitting structures adequately to withstand flood and storms.

There was an emphasis on outreach and support to Access and Functional Needs (AFN) communities in this planning process. Although some AFN communities feel adequately heard and integrated into planning activities, others like the New American community may not have adequately included in previous efforts. Public education and outreach efforts should be developed or enhanced, and existing contacts maintained to support the AFN needs. This should extend to incorporating these communities into planning activities to ensure knowledge and accessibility

Methods of outreach can include social media, in-person workshops, or mailing literature, to name a few examples.

Responsible Entity: Cass County Emergency Management
Funding Source: Cass County's General Fund
Priority: Low
Applicable Hazard: All hazards
Cost: TBD
Timeframe: 2026-2030

3. Build permanent levee structures

The County will continue to build out the levee system.

Responsible Entity: Cass County Emergency Management
Funding Source: FEMA's Building Resilient Infrastructure (BRIC), ND's State Water Commission, and County's Flood Sales Tax

Priority: High
Applicable Hazard: Flood
Cost: $10,500,000
Timeframe: 2026-2030

4. Build ring dike around Sheldon Subdivision

The Sheldon Subdivision, comprised of 14 homes, is located between West Fargo and Mapleton on County Road 10. It is at risk of overland flooding being located between Maple River and a tributary of the Sheyenne River.

Responsible Entity: Cass County Joint Water Resource District
Funding Source: FEMA's BRIC, North Dakota's State Water Commission's Cost-Share Program, and County's Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $650,000
Timeframe: 2025

5. Increase greenway buffer zone

Ensuring that development remains an adequate distance from rivers and streams will remedy most of the problems associated with erosion as well as prevent building in the most flood prone areas. Over the years, properties that were bought out had structures removed or relocated and were turned into restored habitats and park facilities.

Responsible Entity: Cass County Planning Office, Cass County Emergency Management, Cass County Joint Water Resource District
Funding Source: FEMA's BRIC, North Dakota's State Water Commission's Cost-Share Program, and County's Flood Sales Tax
Priority: Low
Applicable Hazard: Flood and Geological
Cost: $4,000,000
Timeframe: 2026-2030

6. Educate homeowners to increase protective measures of residences

Homeowners can take preventative measures to stop stormwater and sewage from entering basements. This can include plugging or capping all sewer openings (e.g. floor drains, toilets, sinks, showers, etc.).

Homeowners need to be educated on the proper ways of preventing backups.

Responsible Entity: Cass County Emergency Management
Funding Source: TBD based on outreach methods
Priority: Low
Applicable Hazard: Flood
Cost: Staff time
Timeframe: 2026-2030

7. Acquisition of flood-prone properties

Continue acquiring identified flood-prone properties will remove high-risk structures as well, help restore the width of the natural floodplain, as well as provide space for habitat restoration and recreation amenities.

Responsible Entity: Cass County Planning Office, Cass County Emergency Management, Cass County Joint Water Resource
Funding Source: FEMA's BRIC, North Dakota's State Water Commission's Cost-Share Program, and County's Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $3,000,000
Timeframe: 2026-2030

8. Create permanent access in and out of flood-prone areas

Low-lying roads can easily become impassable during flood events. Access for first responders is hindered in these scenarios. The Highway Department will oversee identification and development of appropriate access sites.

Responsible Entity: Cass County Highway Department
Funding Source: FEMA's BRIC, ND's State Water Commission's Cost-Share Program, and County's Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $2,000,000
Timeframe: 2026-2030

9. Road washout mitigation

Roads that are submerged by floodwaters can have the roadbed eroded away by the movement of water. Roadbeds and banks can be reinforced to better prepare for flood events. The Highway Department will oversee identification and development of appropriate mitigation sites.

Responsible Entity: Cass County Highway Department
Funding Source: FEMA's BRIC, Flood Mitigation Assistance (FMA), and Hazard Mitigation Grant Program (HMGP)
Priority: High
Applicable Hazard: Flood
Cost: $2,000,000
Timeframe: 2026-2030

10. Peruse Retention projects that support the Red River Basin Commission (RRBC) goals for flood protection

The RRBC has identified the following projects in its *Long-Term Flood Solutions for the Red River document for September 2011*:

- Complete current levee system with upstream retention.
- In partnership with NRCS and water resource districts, implement demonstration projects to analyze the benefits of small distributed and culvert-sizing retention.
- With cooperation of NRCS and RRRA, draw down wetland in autumn to enable spring storage.
- Refurbish flood control dams to provide additional storage capacity

Responsible Entity: Cass County
Funding Source: FEMA's BRIC, FMA, and HMGP and Cass County's Flood Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $150,000,000
Timeframe: 2030-2040

11. Elevate bridge structures

Elevating bridges will ensure they remain open during floods for responders and emergency responders, as well as preventing the need for post-disaster reconstruction. This is an ongoing process as bridges are slated to be replaced.

Responsible Entity: Cass County Highway Department
Funding Source: FEMA's BRIC, FMA, and HMGP
Priority: Low
Applicable Hazard: Flood
Cost: $3,000,000
Timeframe: 2030-2040

12. Protection of bridge structures

Bridges are vulnerable to damage caused by debris and ice carried by floodwaters. This can cause water back up, thus exacerbating flooding. Water Resource Districts receive state funding for tree log clearance measures.

Responsible Entity: Cass County and Water Resource Districts
Funding Source: Federal Highways Administration's (FHWA) Highway Bridge Program (HBP) and FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: $600,000
Timeframe: 2026-2030

13. Secure permanent and long-term alternate source of water

The selected option for constructing an alternative source of water is the Red River Valley Water Supply Project. This will entail bringing water from the Missouri River over to the Red River Valley via 165 miles of transmission lines. Twenty cities and 15 rural water systems have signed on to the project, which would serve approximately 50% of the state's population in times of severe drought. It will be jointly owned by Lake Agassiz Water Authority (LAWA) and Garrison Diversion Conservancy District (GDCD) and operated by the latter.

Responsible Entity: Lake Agassiz Water Authority and Garrison Diversion Conservancy District
Funding Source: State Water Commission appropriations
Priority: High
Applicable Hazard: Drought
Cost: $1,100,000,000
Timeframe: 2026-2035

14. Property acquisitions in landslide prone areas

Buying out properties along rivers and streams susceptible to erosion will reduce environmental disturbance and prevent future damage and injury. Subsequent additional mitigation measures may be needed to support this action.

Responsible Entity: Cass County Water Resource Districts
Funding Source: FEMA's FMA and HMGP and Cass County's Flood Sales Tax
Priority: High
Applicable Hazard: Geological
Cost: $2,000,000
Timeframe: 2026-2029

15. Snag and clear rivers

Snagging and clearing rivers and their banks is a method to reduce the frequency and duration of flooding. It entails the removal of fallen trees and other organic debris in order to improve flow and prevent backup. Standing trees should remain, except those whose roots are exposed due to erosion and are at-risk of falling in.

Responsible Entity: Cass County Water Resource Districts
Funding Source: State Water Commission's Cost-Share Program and Cass County's Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $3,110,000
Timeframe: 2026-2030

16. Drain channel improvements throughout the county

Various drain channels can be improved to provide additional conveyance capacity and correct ongoing issues with slope stability and erosion. The projects per responsible water resource districts are as follows:

Maple River Water Resource District

- Drain 46
- MR-2
- MR-1
- Buffalo-Lynchburg (phase 2)

North Cass Water Resource District

- Drain 18 (NC-1 (including outlet reach improvement and bridge upgrades
- Drain 26
- Drain 31 (NC-1)

Rush River Water Resource District

- Drains 2 and 12 (Lower Rush and Rush Rivers)

Southeast Water Resource District

- Drain 40
- Drain 53

Responsible Entity: Water Resources Districts
Funding Source: ND State Water Commission's Cost-Share Program and Cass County Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $12,150,000
Timeframe: 2030

17. Review model zoning ordinance offered to townships and adjust as needed to reflect best practices in the avoidance of development in risky areas

The exposure of people and structures to hazards can easily be prevented through proper land use planning regulations. With flooding, development in the mapped floodplains can be prevented or at least held to a higher standard that incorporates measures such as floodproofing, building higher that the base flood elevation, prohibiting critical facilities from being sited in the 100- or 500-year floodplain, or allowing cluster pattern of development to permit flexibility in layout of subdivisions.

Development can be limited in dam failure inundation zones.

North Dakota law allows townships to enact and administer their own zoning ordinance, unless they decide to grant that authority to the county.

Township officers are volunteer positions, and they may lack expertise in land use planning. Assistance to townships by reviewing their ordinances and offering suggestions can go a long way towards strengthening the regulatory regime.

Responsible Entity: Cass County Planning Office
Funding Source: Cass County's General Fund
Priority: Medium
Applicable Hazard: Flood
Cost: Staff time
Timeframe: 2026-2027

18. Consider the cost and benefits of the County's participation in the National Fire Protection Association's Firewise USA program.

This program is an effort to reduce the damage caused by wildfires through the completion of a dedicated risk assessment by the state's forestry service and local fire departments. A local committee will then prepare and implement a plan that relies heavily upon property owners voluntarily implementing risk reduction actions. These can include the choosing of appropriate landscaping methods, thinning overgrown vegetation, creating spatial barriers, and selecting ignition-resistance building materials. An annual review by the committee will ensure continued improvement and participation in the program.

Responsible Entity: Cass County Emergency Management and Fargo Emergency Management as lead agencies with assistance from local fire departments and the North Dakota Forest Service
Funding Source: Cass County's General Fund
Priority: Low
Applicable Hazard: Wildfire
Cost: Staff time
Timeframe: 2026-2027

19. Construct repairs to the principal spillways at the Elm River and Maple River dams and upgrade spillway capacity at Swan Buffalo Detention Dam

The spillway outlet pipes at the first two dams have deteriorated and will need repairs in the future. The spillway capacity at the Swan Buffalo Detention Dam's spillway capacity met the standards at the time of construction. However, upgrading it to meet modern standards will ensure it can function during severe precipitation events that are more common nowadays.

Responsible Entity: North Cass Water Resource District and Cass County Joint Water Resources District
Funding Source: North Dakota State Water Commission
Priority: Low
Applicable Hazard: Dam

20. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: Cass County Emergency Management
Funding Source: Cass County's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

21. Conduct a county-wide study on safety
Conduct a comprehensive county-wide study to evaluate safety across the region, with a particular focus on winter weather road conditions and their impact on access to rural schools. Particular focus of the study should be on Northern Cass School's main access point, County Road 26, which has been identified as a problematic road for winter snow weather impacts. The study will identify key hazards, assess the effectiveness of current safety measures, and recommend targeted improvements to ensure safer transportation during winter storms. This initiative aims to strengthen road safety, especially for rural school routes, and will guide local policies and preparedness efforts to protect students and staff traveling to and from rural areas.

Responsible Entity: Cass County Emergency Management
Funding Source: FEMA's Emergency Management Performance Grant (EMPG)
Priority: Medium
Applicable Hazard: Winter
Cost: Medium
Timeframe: 2026-2027

22. Build a resiliency center
To mitigate the impacts of hazards and strengthen community resilience, the county should prioritize the development of a Resiliency Center. This Center will be designed to address specific needs of the community, incorporating feedback to tackle unique challenges and provide essential services to build relationships, promote preparedness, and improve overall well-being. The Center must be equipped to operate effectively in everyday conditions, during disruptions, and throughout recovery phases, which will require investments in robust infrastructure such as reliable backup power, durable buildings, and sustainable operations.
Prioritizing outreach to at-risk, or vulnerable populations, is essential. A strong focus should be placed on supporting marginalized communities that face disproportionate impacts from climate change, hazards, and systematic inequities. By providing targeted outreach and services, the Center will empower residents and community-based organizations to address their needs and strengthen their capacity for adaptive resilience.
The Center should also strive to meet ambitious sustainability goals, such as achieving net zero energy, biophilic design, and incorporating greywater reuse and community solar benefits. This Center may be a pilot project for additional centers throughout the county and beyond.

Responsible Entity: Cass County Emergency Management
Funding Source: FEMA's BRIC
Priority: Medium
Applicable Hazard: All Hazards

Cost: High
Timeframe: 2028 and beyond

23. Tabletop with schools in the county for tornado while students are in route

Organize a county-wide tabletop exercise to simulate and evaluate tornado response procedures during vulnerable times for students, specifically while they are on buses before and after school. The exercise will emphasize improving coordination between schools, transportation services, emergency responders, and county officials to ensure the safety of students in transit. Training resource such as those offered by TEEX (Texas A&M Engineering Extension Services), which are FEMA-recognized and align with best practices, will be utilized. The exercise will generate actionable insights to enhance emergency management protocols and foster collaboration among stakeholders, ensuring a unified response during severe weather events.

Responsible Entity: Cass County Emergency Management and Local School Districts
Funding Source: FEMA's EMPG
Priority: Low
Applicable Hazard: Summer
Cost: Staff time
Timeframe: 2027

24. Enhance disaster mental health

Prioritize disaster mental health services to address the growing need for community mental health support, particularly in the wake of the COVID-19 pandemic. Leverage existing resources such as mental health training programs offered by NDSU, to provide accessible support for educators, students, and community members. Recognize the unique needs of law enforcement and first responders and their recovery processes, while ensuring recovery efforts prioritize community-wide mental health recovery from natural or man-made hazards.

Responsible Entity: Local law enforcement, NDSU, Fargo-Cass County Public Health Department, and Cass County Emergency Management
Funding Source: FEMA's EMPG
Priority: Low
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2026 and beyond

25. Create and invite stakeholders/agencies to a "Breakfast Club"

To enhance coordination and information sharing among local departments and agencies, the county will establish a monthly Breakfast Club – a regular interdisciplinary event designed to foster collaboration and emergency manager efforts. The initiative will bring together emergency managers, municipal departments, and other key agencies to share general information, experiences, and lessons learned in a collaborative setting. While some partners may believe that certain information is only on a need-to-know basis, the Breakfast Club will focus on discussing threats, knowledge, and experiences in a way that maintains confidently yet promotes a shared understanding of local issues. By ensuring that all participating entities are informed and aligned, the Breakfast Club aims to prevent scenarios where one city or agency may be responding to an issue without awareness of the capacities, actions or responses of others. This regular gathering will help build stronger cross-organizational relationships, information sharing, enhance situational awareness, and improve overall effectiveness of the county's emergency response and resilience efforts.

Responsible Entity: Cass County Emergency Management
Funding Source: Cass County's General Fund
Priority: Medium
Applicable Hazard: All Hazards
Cost: Low
Timeframe: 2025

26. Coordinate current evacuation planning efforts with MetroCOG and NDSU

Collaborate with the City of Fargo, MetroCOG, and NDSU to integrate current evacuation planning efforts across the county. This initiative will address the significant concerns raised by stakeholders regarding evacuation procedures for

various hazards, including natural and man-made hazards. By leveraging existing expertise and resources, this coordination will streamline planning efforts, improve readiness, and ensure efficient evacuation protocols across the City of Fargo and surrounding areas.

Responsible Entity: City of Fargo, Fargo Emergency Management, MetroCOG, NDSU, Cass County Emergency Management
Funding Source: FEMA's EMPH
Priority: Medium
Applicable Hazard: CTA, Dam, HazMat, Summer, Transport, and Wildland
Cost: Staff time
Timeframe: 2026

27. Purchase a COW/cell booster

Mass gatherings frequently result in cellular network congestion, leading to dropped cell signals that hinder communication during events. To mitigate this, the County will invest in a Cell-on-Wheels (COW) and cellular and radio boosters to provide reliable connectivity for emergency responders and event organizers. These systems will strengthen community capabilities, supporting public safety during large-scale events.
Responsible Entity: Cass County IT, Cass County Emergency Management
Funding Source: Cybersecurity & Infrastructure Security Agency's (CISA) Public Safety Communications Grant and Department of Homeland Security's (DHS) Homeland Security Grant Program (HSGP)
Priority: High
Applicable Hazard: CTA and Summer
Cost: High
Timeframe: 2026

28. Red River Regional Dispatch Center's own IT Department

The Red River Regional Dispatch Center (RRR) currently relies on Fargo's IT department for support, which is unsustainable in the long term. Creating a dedicated IT department for RRR will enhance operational efficiency, reduce dependency on external entities, and improve service reliability for regional emergency communication systems.

Responsible Entity: Red River Regional Dispatch, Cass County IT, City of Fargo IT, City of West Fargo IT, Cass County Emergency Management, Fargo Emergency Management, and West Fargo Emergency Management
Funding Source: Cass County's General Fund, City of Fargo's General Fund, and City of West Fargo's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: High
Timeframe: 2026

29. Increase resources for community events

Community events place a significant strain on county resources, including law enforcement, public works, and dispatch services. To address these challenges:

- Establish thresholds for event size to trigger shared public safety costs between the county, cities, and event organizations, especially for profit-making events.
- Source and invest in more cost-effective crowd control measures, such as water-filled barriers, that can be loaned out to replace expensive and vulnerable equipment like a payloader.
- Strengthen dispatch protocols and resources for sufficient staffing during high-demand events and explore contingency plans for active assailant scenarios, which generate high call volumes.

Responsible Entity: Cass County Law Enforcement, Cass County Public Works, Red River Regional Dispatch, City of Fargo Public Works, City of West Fargo Public Works, Fargo Police Department, West Fargo Police Department, Cass County Emergency Management, Fargo Emergency Management, and West Fargo Emergency Management
Funding Source: DHS's HSGP
Priority: High
Applicable Hazard: CTA

Cost: High
Timeframe: 2027

30. Host annual ICS course training for all agencies/departments
More coordination is needed. The National Incident Management System (NIMS) and Incident Command System (ICS) can be difficult to understand if they often work outside the scope of emergency management because of the saturated use of acronyms and technical jargon. Having Cass County Emergency Management host training will allow for people to ask for clarification and context; while providing unified training so everyone operates under the same protocol.

Responsible Entity: Cass County Emergency Management
Funding Source: FEMA's EMPG
Priority: Medium
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2026 and beyond

31. Conduct flood study between Davenport and Kindred
Conduct a detailed hydrological and infrastructural study focused on flood risk between Davenport and Kindred. A railroad that runs between Davenport and Kindred acts as a barrier for floodwater in the area. A high-level flood mitigation study for the Davenport-Kindred vicinity is proposed to identify potential impacts to existing and future development, as well as identifying potential mitigation strategies to address these impacts, in both these growing communities. Recommendations will inform future growth plans for both communities and enhance regional coordination.

Responsible Entity: Cass County Emergency Management, Davenport Mayor, and Kindred Mayor
Funding Source: FEMA's FMA
Priority: Medium
Applicable Hazard: Flood
Cost: High
Timeframe: 2027

32. Study on aquifer capacity/sustainability to support the rural population
Undertake a comprehensive study to evaluate the capacity and sustainability of local aquifers to support rural water needs. This study will provide critical data for water resource management, drought mitigation, and long-term planning for rural communities.

Responsible Entity: Cass County Planning, Cass County Joint Water Resource District, Cass Rural Water
Funding Source: Bureau of Reclamation's (BOR) WaterSMART Drought Response Program
Priority: Low
Applicable Hazard: Drought, Summer, Urban, and Wildland
Cost: Medium
Timeframe: 2028

ALICE

33. Installation of warning sirens
Advanced warning will allow for increased preparedness with the potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Alice's Auditor and Red River Regional Dispatch
Funding Source: FEMA's BRIC and HMGP
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2027

34. Install emergency generator at fire hall
The fire hall is in good shape and can serve as an emergency shelter or staging point for disaster response. A generator for backup power will allow it to remain operation(al) in case of storm disrupts power.

Responsible Entity: Alice Rural Fire District
Funding Source: FEMA's BRIC and HMGP
Priority: Low
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2027-2028

35. Procure weather radios for residents at the fire hall
NOAA weather radios are a valuable tool to warn residents of an incoming severe storm or tornado. Procuring these and offering them to residents will ensure everyone is made aware and seeks appropriate shelter.

Responsible Entity: City of Alice's Auditor
Funding Source: FEMA's BRIC and HMGP
Priority: Low
Applicable Hazard: Summer and Winter
Cost: TBD
Timeframe: 2027-2028

36. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Alice's Auditor with assistance from Cass County Emergency Management
Funding Source: City of Alice's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

37. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Alice's Auditor and Cass County Emergency Management
Funding Source: City of Alice's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

38. Identify an existing building as a community shelter

Current structures will be assessed for suitability to serve as a community emergency shelter based on factors such as location, capacity, accessibility, and safety features. Designating a reliable shelter will provide all residents with a secure place to seek refuge during hazard events.

Responsible Entity: City of Alice's Auditor with the aid of Cass County Emergency Management
Funding Source: City of Alice's General Fund
Priority: Medium
Applicable Hazard: Summer
Cost: Staff time
Timeframe: 2026

39. Obtain an emergency generator

A generator for backup power will allow support for critical infrastructure and services, such as communication systems and emergency response operations, which will help maintain functionality and safety when the main power supply is disrupted.

Responsible Entity: City of Alice's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: CTA, Cyber, Dam, Flood, Space, Summer, Transport, and Winter
Cost: Medium
Timeframe: 2026

40. Create a city Facebook page

A City of Alice Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters, supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of Alice's Auditor
Funding Source: City of Alice's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025

AMENIA

41. Build dike to protect against the Rush River
Amenia is affected from the north by overland flooding from the Rush River. Constructing a levee will protect the city and reduce the need to implement emergency measures.

Responsible Entity: City of Amenia's Auditor and Cass County Joint Water Resource District
Funding Source: FEMA's HMGP, BRIC, AND FMA with local match, ND State Water Commission, Cass County's Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $2,000,000
Timeframe: 2030

42. Installation of storm sewer and a storm sewer lift station
Upgrading Amenia's internal drainage capacity will prevent localized flooding and damage to property.

Responsible Entity: City of Amenia's Auditor
Funding Source: ND State Water Commission, ND Department of Health's Clean Water State Revolving Fund (CWSRF) Loan, USDA Rural Development's Water and Waste Disposal Loan and Grant
Priority: Medium
Applicable Hazard: Flood
Cost: $500,000
Timeframe: 2030

43. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Amenia's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Amenia's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

44. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.
Responsible Entity: City of Alice's Auditor and Cass County Emergency Management
Funding Source: City of Amenia's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

45. Obtain emergency generator
A generator for backup power will allow support for critical infrastructure and services, such as communication systems and emergency response operations, which will help maintain functionality and safety when the main power supply is disrupted.

Responsible Entity: City of Amenia's General Fund
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood, Summer, and Winter
Cost: Medium
Timeframe: 2026

ARGUSVILLE

46. Installation of warning sirens
Advanced warning will allow for increased preparedness with potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Argusville's Auditor and Red River Regional Dispatch Center
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: TBD
Timeframe: 2026-2027

47. Build a storm shelter
Constructing a storm shelter according to FEMA's engineering standards will offer residents who may not have an adequate structure and those caught outside at the onset of a storm a place of refuge and safety.

Currently, the fire department rents space in the Community Center from the city. A new separate fire hall would be ideal. Incorporating a storm shelter, that is readily available to the public, could lead to cost savings.

Responsible Entity: City of Argusville's Auditor with assistance of Moore Engineering
Funding Source: FEMA's HMGP and BRIC, and USDA Rural Development's Community Facilities Loan and Grant
Priority: Medium
Applicable Hazard: Summer
Cost: $80,000 Estimate is closer to $2M
Timeframe: 2026-2027

48. Generator for the two lift stations' backup pumps
These will ensure the two lift stations (located in the west and east portions of the city) remain operational during power outages that are often the result of severe weather.

Responsible Entity: City of Argusville's Auditor with assistance from Moore Engineering
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: $150,000
Timeframe: 2027-2028

49. Ensure community center/fire hall is able to withstand natural hazards
Given that the community center and fire hall need to remain operational in case of emergencies, it is recommended that a thorough examination by a professional is conducted in order to find out what alterations or hardening are needed.

Responsible Entity: City of Argusville's Auditor and Argusville Fire Department
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood, Geologic, Summer, Wildland, and Winter
Cost: TBD
Timeframe: 2026-2027

50. Assist households with vulnerable individuals in carrying out mitigation actions on their own properties
Argusville has areas of town with older style houses as well as modular homes where more vulnerable individuals (e.g. low income, elderly) may live. Older homes tend not to comply with the latest building codes and have maintenance issues which increase their vulnerability to severe storms.

The city can look for grant funding to help those households update their homes, remedy code deficiencies, and harden the structures thus providing protection.

Responsible Entity: City of Argusville's Auditor
Funding Source: USDA Rural Development's Housing Preservation Grant
Priority: Low
Applicable Hazard: All hazards
Cost: TBD
Timeframe: 2027-2028

51. Upgrade culverts that are not draining properly in storm events
There are several culverts that are incapable of draining in adequate time. Replacing these sections will increase the capacity and thus prevent water from backing up into lawns and buildings. The previous culvert project was about 10 to 12 years ago. These will be evaluated upon the completion of a currently underway sewer project.

Responsible Entity: City of Argusville's Auditor with assistance of Moore Engineering
Funding Source: FEMA'S BRIC, HMGP, and FMA, and USDA Rural Development's Water & Waste Disposal Loan and Grant
Priority: Medium
Applicable Hazard: Flood and Summer
Cost: TBD
Timeframe: 2027-2028

52. Raise and certify the levee around Richwood Estates/Leonard's Way
The earthen berm for the west portion of the city will be examined as part of a certification process. Alterations to the levee may be necessary to obtain this certification. In the end, this will reduce the flood risk to housing development of approximately 85 homes.

Responsible Entity: City of Argusville's Auditor with the assistance of Moore Engineering
Funding Source: ND State Water Commission and Cass County's Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $500,000
Timeframe: 2030

53. Install backup generator for the water pump at the reservoir
If the power to the pump at the reservoir goes out, city residents will go without water. A backup generator would ensure continued operation during severe weather.

Responsible Entity: City of Argusville's Auditor
Funding Source: FEMA's BRIC and HMGP
Priority: Medium
Applicable Hazard: Flood, Space, Summer, and Winter
Cost: TBD
Timeframe: 2027-2028

54. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Agrusville's Auditor with assistance of Cass County Emergency Management
Funding Source: City of Argusville's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

55. Promote storm safety information during Severe Weather Awareness Weeks

Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Argusville's Auditor and Cass County Emergency Management
Funding Source: City of Argusville's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

ARTHUR

56. Installation of warning sirens
Advanced warning of oncoming storms will allow for timely action on part of residents.

Responsible Entity: City of Arthur's Auditor and Red River Dispatch Center
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2027

57. Create a new legal drain to move water north of City limits
A new drain will reduce flood risk to the entire community, thus protecting public and private property.

Responsible Entity: City of Arthur's Auditor
Funding Source: ND State Water Commission, Cass County's Flood Sales Tax, and USDA Rural Development's Water & Waste Disposal Loan and Grant
Priority: Low
Applicable Hazard: Flood
Cost: $1,000,000
Timeframe: 2030-2035

58. Install a backup generator at lift station
Ensuring continued operation of lift stations reduces the chance for sewer backups and flooding to occur.

Responsible Entity: City of Arthur's Auditor
Funding Source: ND State Water Commission, Cass County's Flood Sales Tax, and FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: $200,000
Timeframe: 1-2 years

59. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Arthur's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Arthur's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

60. Promote storm safety during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Arthur's Auditor and Cass County Emergency Management
Funding Source: City of Arthur's General Fund
Priority: Medium

Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

61. Assess water availability for firefighting

Assessing water availability will ensure sufficient resources are accessible during emergencies. This includes evaluating the capacity and reliability of existing water sources, such as hydrants, tanks, and reservoirs, and identifying any gaps or needed improvements to support effective firefighting operations and strengthen community safety.

Responsible Entity: City of Arthur's Auditor
Funding Source: FEMA's Assistance to Firefighters Grant Program (AFGP), HMGP, and BRIC
Priority: Medium
Applicable Hazard: Urban and Wildland
Cost: TBD
Timeframe: 2027

AYR

62. Installation of warning sirens
Advance warning will allow for increased preparedness with potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Ayr's Auditor and Red River Regional Dispatch
Funding Source: FEMA's HMPG and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $25,000
Timeframe: 2026-2029

63. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Ayr's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Ayr's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

64. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Ayr's Auditor and Cass County Emergency Management
Funding Source: City of Ayr's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

65. Consider creating a city Facebook page
A City of Ayr Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters, supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of Ayr's Auditor
Funding Source: City of Ayr's General Fund
Priority: High

Applicable Hazard: All Hazards
Cost: Staff budget
Timeframe: 2025

BRIARWOOD

66. Continue campaign to get people signed up for Cass Clay Alerts

Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Briarwood's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Briarwood's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

67. Promote storm safety information during Severe Weather Weeks

Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience. Given Briarwood's small population, the city maintains an email contact list that includes all residents and is regularly used for community communication, especially for weather-related updates during flood season. This email list will remain a likely tool for distributing storm safety information during Severe Weather Weeks.

Responsible Entity: City of Briarwood's Auditor and Cass County Emergency Management
Funding Source: City of Briarwood's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

68. Create a city Facebook page

A City of Briarwood Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters, supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of Briarwood's Auditor
Funding Source: City of Briarwood's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025

BUFFALO

69. Upgrade lift station
The current lift station, built in the 1960s, is unable to handle the inflows and therefore needs an exemption to pump into a nearby ditch to relieve pressure, lest it back up into people's properties. A new lift station with greater capacity will prevent backups and internal flooding.

Responsible Entity: City of Buffalo's Auditor
Funding Source: FEMA's BRIC, FMA, and HMPG
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2027

70. Installation of backup generator at the lift station
Reduces the risk of the lift station going down during any number of incidents.

Responsible Entity: City of Buffalo's Auditor
Funding Source: FEMA'S BRIC and HMGP
Priority: Medium
Applicable Hazard: Summer
Cost: $100,000
Timeframe: 2026-2027

71. Installation of backup generator at community center
The community center currently serves as shelter and space organizing disaster response. Installing a backup generator would ensure power remains during a critical time.

Responsible Entity: City of Buffalo's Auditor
Funding Source: FEMA'S BRIC and HMPG
Priority: Low
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2026-2027

72. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts over a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Buffalo's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Buffalo's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

73. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Buffalo's Auditor and Cass County Emergency Management
Funding Source: City of Buffalo's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

CASSELTON

74. Raising levee on north side of town
The city will consider raising the levee on the north side of town depending on FEMA's update of the floodplain map.

Responsible Entity: City of Casselton's Public Works Department with assistance from engineering firm
Funding Source: FEMA'S BRIC, HMGP, and FMA
Priority: High
Applicable Hazard: Flood
Cost: $1,600,000
Timeframe: 2030

75. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts over a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Casselton's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Casselton's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

76. Obtain a standby generator for sanitary lift station
Acquire and install a standby generator to ensure continued operation of the sanitary lift station during power outages.

Responsible Entity: City of Casselton's Public Works Department
Funding Source: USDA Rural Development Water and Waste Disposal Loans and FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: Medium
Timeframe: 2026

77. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Casselton's Auditor and Cass County Emergency Management
Funding Source: City of Casselton's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

78. Obtain brush truck
To improve Casselton's ability to respond to wildfire, grass fires, and other fire incidents in rural or hard-to-reach areas by acquiring a specialized brush truck, a versatile firefighting vehicle designed specifically for wildfire suppression. The brush truck will be equipped with off-road capabilities, a water tank, a pump, and essential firefighting tools to access and combat fires in areas that traditional fire engines cannot reach.

Responsible Entity: City of Casselton's Auditor
Funding Source: NIFC's Rural Fire Assistance Grant, FEMA's BRIC, North Dakota Forest Serive's Cooperative Fire Protection Assistance (CFPA)
Priority: Medium
Applicable Hazard: Wildland
Cost: High
Timeframe: 2027

79. Create and implement a volunteer training program

Implement a robust volunteer training program to expand the capacity of emergency response efforts and bolster community resilience. The program will recruit and train volunteers to assist with critical services, including volunteer ambulance operations, disaster response, emergency shelter support, and search and rescue.

Responsible Entity: City of Casselton's Auditor
Funding Source: FEMA's EMPG, AFGP, and BRIC
Priority: Medium
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2026 and beyond

80. Upgrade first responder equipment

Replace or enhance outdated equipment used by first responders, including communication tools, protective hear, and rescue equipment, to improve operational safety and efficiency during emergencies.

Responsible Entity: Casselton Fire Department and Casselton Ambulance
Funding Source: NDFS' CFPA and FEMA's AFGP
Priority: Medium
Applicable Hazard: All Hazards
Cost: High
Timeframe: 2026 and beyond

81. Obtain an all-response truck

Procure and equip an all-response trick designed to address a wide range of emergencies, including natural disasters, hazardous materials incidents, and public safety threats. The truck will be outfitted with specialized tools, equipment, and technology to support rapid response, situational assessment, and mitigation efforts. Its multi-purpose design will allow it to be deployed in various scenarios, such as severe weather events, flood response, structural collapses, and fire incidents.

Responsible Entity: City of Casselton's Public Works Department
Funding Source: FEMA's HMGP, BRIC, EMGP, and AFGP
Priority: Medium
Applicable Hazard: CTA, Dam, Flood, Geologic, Summer, Wildland, and Winter
Cost: High
Timeframe: 2027

DAVENPORT

82. Installation of warning sirens
Advanced warning will allow for increased preparedness with potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Davenport's Auditor and Red River Regional Dispatch Center
Funding Source: FEMA'S HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2030

83. Improvements to city's drainage system
The city does not have a storm sewer system, so the drainage system is inadequate, causing localized flooding issues.

Responsible Entity: City of Davenport's Auditor and State Water Commission
Funding Source: FEMA'S BRIC and HMGP, Cass County's Flood Sales Tax, State Water Commission, ND Department of Health's Clean Water State Revolving Fund (CWSRF), USDA Rural Development's Water and Waste Disposal Loan and Grant Program
Priority: Medium
Applicable Hazard: Flood and Summer
Cost: TBD
Timeframe: 2030-2045

84. Install permanent flood protection
The city is at risk of local overland flooding and overland flooding caused by breakout flows from the Sheyenne River. A levee system will reduce the flood risk for the city and reduce or eliminate the need for emergency measures.

Responsible Entity: City of Davenport's Auditor and State Water Commission
Funding Source: FEMA's BRIC and HMGP with local match, Cass County's flood sales tax, State Water Commission, ND Department of Health's CWSFR, and USDA Rural Development's Water and Waste Disposal Loan and Grant Program
Priority: High
Applicable Hazard: Flood
Cost: $3,800,000-$5,000,000
Timeframe: 2026-2028

85. Install permanent backup generators for the community center
Davenport's community center and city hall was a former school. It has adequate space in the gym to function in that role even if the power remains out for an extended period of time.

Responsible Entity: City of Davenport's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: TBD
Timeframe: 2028-2030

86. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts over a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Davenport's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Davenport's General Fund

Priority: High
Applicable Hazard: All Hazard
Cost: Staff time
Timeframe: 2025 and beyond

87. Build a ring dike
Construct a protective ring dike around the city or an expanded area that includes room for future growth to mitigate the impact of flooding, protect lives, and minimize economic losses.

Responsible Entity: City of Davenport's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: High
Timeframe: 2028

88. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Davenport's Auditor and Cass County Emergency Management
Funding Source: City of Davenport's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

89. Create a city Facebook page
A City of Davenport Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters, supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of Davenport's Auditor
Funding Source: City of Davenport's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025

FARGO

90. Install failsafe traffic signals, street lighting and message boards along designated emergency routes
This updated equipment will ensure traffic can still flow along key evacuation routes during hazard-caused power outages."

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: CTA, Dam, Summer, Urban, and Winter
Cost: $5,000,000
Timeframe: 2035-2075

91. Remove structures from slough and cutbank areas along Red River
Continuing with property acquisition along rivers and streams will remove structures at-risk of erosion.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: Geologic and Flood
Cost: $20,000,000
Timeframe: 2030-2040

92. Execute Fargo's Revised Comprehensive Flood Mitigation Plan
Completely implementing Fargo's comprehensive flood control plan will save nearly a billion dollars in structural losses as well as removes threats to life and property by reducing reliance on emergency flood protection measures. This plan identifies buyouts and levees in areas hardest to provide emergency protection for. It also seeks to avoid loss of housing because of construction of freeboards purely for the purpose of obtaining certification in areas that have not experienced flooding in the past.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Flood Control Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $60,000,000
Timeframe: 2026-2030

93. Bury electrical power and communication lines
Coordinate with electric and telecommunications companies in identifying appropriate areas where lines can be buried.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Private companies' capital workplans
Priority: Low
Applicable Hazard: Summer and Winter
Cost: $50,000,000
Timeframe: 2035-2050

94. Elevate, floodproof, or fill basements of residential structures in the Special Flood Hazard Area
Structures that cannot be feasibly acquired and moved can be retrofitted instead according to FEMA standards that ultimately lead to a reduced flood insurance premiums for property owners.

Responsible Entity: Private
Funding Source: Flood Control Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $150,000,000
Timeframe: 2040-2055

95. Floodplain storage areas in select locations citywide (250-acre footprint or larger)
Floodwalls and levees along cannot control flooding, unless combined with water retention strategies.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $60,000,000 total
Timeframe: 2026-2035

96. Storm water retention ponds in select locations citywide
Floodwalls and levees alone cannot control flooding, unless combined with a water retention strategy.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $10,000,000
Timeframe: 2026-2035

97. Install relief storm sewer in select locations citywide
In areas where the existing storm sewer is undersized, a relief storm sewer can provide extra capacity for peak flows during extreme precipitation events.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $20,000,000
Timeframe: 2026-2035

98. Install permanent generator at STS-LS #8 (Drain 10: 32nd Street south of Main Avenue
This will ensure pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

99. Install permanent generator at STS LS #9 (Drain 40: 45th Street at Main Avenue)
This will maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood

Cost: $250,000
Timeframe: 2030-2045

100. Install permanent generator at STS LS #16 (Drain 10 south of 2nd Avenue South)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

101. Install permanent generator at STS LS #21 (Drin 3: West of 18th Street and north of 12th Avenue North)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

102. Install permanent generator at STS LS #33 (East of Dakota Drive on 19th Avenue North)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

103. Install permanent generator at STS LS #50 (45th Street South of 3rd Avenue North)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. The lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood

Cost: $250,000
Timeframe: 2030-2045

104. Raise gatewell and install permanent generator at STS LS #1 (2nd Street South at Main Avenue)
This will maintain traffic for civilian, city, and emergency personnel and from river flooding. This lift station pumps water from the underpass on 2nd Street north of Main Avenue. If this lift station lost power, the underpass would be impassable to citizens, city maintenance workers and emergency vehicles during rain events. The top of the gatewell elevation is below the flood of record and needs to be ringed with sandbags during high flood events to keep river water from expelling out of the lift station.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure and/or Flood Control Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $400,000
Timeframe: 2026-2035

105. Install permanent generator at STS LS #3 (25th Street at Main Avenue)
Maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water from the underpass on 25th Steet north of Main Avenue. If this lift station lost power, the underpass would be impassable to citizens, city maintenance workers, and emergency vehicles during rain events.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

106. Install permanent generator at STS LS #6 (45th Street at 19th Avenue North)
This will maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water in Cass County Drain 40 that collects water from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. Lift station has free flow gates but if water downstream of the lift station is at a higher elevation the pumps are needed.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

107. Install permanent generator at STS LS #11 Trollwood (east lift)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

108. Install permanent generator at STS LS #14 (West of 25th Street at 26th Avenue South)
This will maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable. This lift station is critical to pump storm water out of Bluemont Lakes in the event of heavy rainfall/large runoff.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

109. Install permanent generator at STS LS #16 (Cass County Drain 10 south of 2nd Avenue South)
This will maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2045

110. Install permanent generator at STS LS #20 (Island Park)
This will maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilians, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

111. Install permanent generator at STS LS #26 (Ridgewood Addition)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer systems from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2035-2045

112. Install permanent generator at STS LS #34 (West of Elm Street on Forest Avenue)
Maintaining pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both

residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

113. Install permanent generator at STS LS #35 (Cass County Drain 10 south of 6th Avenue South)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilians, city, and emergency personnel/ This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

114. Relocate lift station and install permanent generator at STS LS #40 (East of Eagle Street on 32nd Avenue North)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties/ The potential for property damage along with street flooding is present if this lift station was to become inoperable. The location of the lift station makes it susceptible to river flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $2,150,000
Timeframe: 2035-2045

115. Raise gatewell at STS LS #41 (10th Street North – 3700 Block)
Maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties/ The potential for property damage along with street flooding is present if this lift station was to become inoperable. The location of the lift station makes it susceptible to river flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $10,000
Timeframe: 2035-2045

116. Relocate lift station and install permanent generator at STS LS #42 (5th Steet South at 21st Avenue South)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties/ The potential for property damage along with street flooding is present if this lift station was to become inoperable. The location of the lift station makes it susceptible to river flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax

Priority: Medium
Applicable Hazard: Flood
Cost: $2,150,000
Timeframe: 2028-2035

117. Raise gatewell and install permanent generator at STS LS #49 (45th Street north of Cass County Drain 27)
Contain river water in gatewell and maintain pumping to minimize flooding damages to commercial properties along with maintain traffic for civilian, city, and emergency personnel. The top of the gatewell elevation is below the flood of record elevation. If water was to expel out of the gatewell, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $350,000
Timeframe: 2030-2040

118. Raise lift station at STS LS #52 (East of Broadway at Kandi Lane)
Contain river water in gatewell side of the lift station while maintaining pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station as to become inoperable. The top cover of the lift station is above the 2009 highwater elevation, however, the risk of flood water expelling out of the gatewell on a larger flood event is possible."

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $200,000
Timeframe: 2035-2045

119. Install permeant generator at STS LS #53 (Drain 10 at 40th Avenue North-CC20)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water in Cass County Drain 10 that collects water from both residential and commercial properties. The potential for property damage along with street flooding is present is this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $350,000
Timeframe: 2030-2040

120. Raise gatewell and install permanent generator at STS LS #54 (36th Street north of 40th Avenue South)
This lift station pumps water from the underpass on 40th Avenue South at I29. If this lift station lost power, the underpass would be impassable to citizens, city maintenance workers, and emergency vehicles during rain events.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2026-2035

121. Raise gatewell and install permanent generator at STS LS #55 (42nd Street north of Cass County Drain 27)
Contain river water in gatewell and maintain pumping to minimize flooding damages to commercial properties along with maintain traffic for civilian, city, and emergency personnel. The top of the gatewell elevation is below the flood of record elevation. If water was to expel out of the gatewell, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250000
Timeframe: 2030-2040

122. Raise lift station and install permanent generator at STS LS #56 (42nd Street south of Cass County Drain 27)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top of the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $400,000
Timeframe: 2030-2040

123. Raise lift station and install permanent generator at STS LS #57 (Trollwood – west lift)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top of the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $400,000
Timeframe: 2026-2035

124. Raise lift station at STS LS #58 (University Drive at 64th Avenue South)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top of the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $750,000
Timeframe: 2026-2035

125. Install permanent generator at STS LS #59 (36th Street at 9th Avenue South)
Maintain pumping to minimize flooding damage to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water primarily from commercial areas and from the 9th Avenue South underpass at Interstate 29. If this lift station lost power, the underpass would be impassable to citizens, city maintenance workers, and emergency vehicles during rain events.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2040

126. Raise lift station and install permanent generator at STS LS #61 (East side of 5th Street at 18th Avenue South)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top of the lift station is lower than emergency levees installed in 2009.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $300,000
Timeframe: 2030-2040

127. Raise lift station and install permanent generator at STS LS #67 (Osgood lift station – east side Cass County Drain 27)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel The top of the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $300,000
Timeframe: 2030-2040

128. Raise lift station and install permanent generator at STS LS #68 (Osgood lift station – west side Cass County Drain 27)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top of the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $300,000
Timeframe: 2030-2040

129. Raise lift station and install permanent generator STS LS #70 (45th Street south of Cass County Drain 27)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top for the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $750,000
Timeframe: 2030-2040

130. Raise lift station and install permanent generator STS LS #71 (Cass County Drain 53 at 52nd Avenue South)
Contain river water in gatewell side of lift station and maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. The top for the lift station is lower than emergency levees installed in 2009. If water was to expel out of the gatewell side of the lift station, it would lead to flooding residential and commercial property along with street flooding.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $400,000
Timeframe: 2030-2040

131. Install permanent generator at STS LS #75 (2nd Street North at 15th Avenue)
Maintain pumping to minimize flooding damages to residential and commercial properties along with maintaining traffic for civilian, city, and emergency personnel. This lift station pumps water that collects in the storm sewer system from both residential and commercial properties. The potential for property damage along with street flooding is present if this lift station was to become inoperable.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax and Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $250,000
Timeframe: 2030-2040

132. Emergency generator for lift station #58
Power supply to Lift Station #58 in event of grid power loss, allowing the city to continue sewer operations thus minimizing flooding, overflows, and sewer backup damages to properties.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $500,000
Timeframe: 2026-2035

133. Effluent force main improvements
Modify existing force main to more efficiently manage flows, which potentially minimizes flooding, overflows, and sewer backup damages to commercial and residential properties.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $4,000,000
Timeframe: 2026-2035

134. Emergency standby generator at Sheyenne River Pump Station
Power supply to the Sheyenne River Pumping Station in event of grid power loss allowing the city to continue to provide raw water to the treatment plant to be treated for fire protection and to serve users.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: All Hazards

Cost: $1,000,000
Timeframe: 2026

135. Relocation of the Sheyenne River Pump Station
New location to remove loss of service due to flood event.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: $15,000,000
Timeframe: 2026-2028

136. Emergency standby generator at Red River Pump Station
Power supply to the Red River Pumping Station in event of grid power loss allowing the city to continue to provide raw water to the treatment plant to be treated for fire protection and to serve users.

Responsible Entity: City of Fargo Water Treatment Facility
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: All Hazards
Cost: $1,000,000
Timeframe: 2026-2028

137. Permanent levee for Wastewater Treatment Plant
The construction of permanent, long-term flood protection consisting of levees, sheet piles, and road raises will protect the wastewater treatment plant up to a 500-year flood without the need for a temporary enclosure.

Responsible Entity: City of Fargo Water Treatment Facility
Funding Source: FEMA's FMA
Priority: High
Applicable Hazard: Flood
Cost: $4,900,000
Timeframe: 2025

138. Relocation of Red River Intake Screens
Relocating the intake screens from the side channel to the deeper center channel of the river would allow prolonged use of the Red River during drought periods.

Responsible Entity: City of Fargo Water Treatment Facility
Funding Source: Infrastructure Sales Tax
Priority: Low
Applicable Hazard: Drought
Cost: $1,500,000
Timeframe: 2030-2035

139. Emergency Water Supply Line Improvements
Provide water source (from?) Sheyenne River to the Water Treatment Plant for treatment in the event of the Red River being too low.

Responsible Entity: City of Fargo Engineering Department
Funding Source: Infrastructure Sales Tax
Priority: High
Applicable Hazard: Drought
Cost: $12,000,000
Timeframe: 2030-2035

140. Encourage rooftop retention on buildings and parking garages in downtown Fargo
Mitigate stormwater quantity and quality as well as storage of water for fire suppression if stored on high elevation. It is estimated in downtown Fargo there are enough flat roofs to have approximately 875,000 cubic feet of capacity.

Responsible Entity: City of Fargo Planning Department
Funding Source: Building owners
Priority: Low
Applicable Hazard: Summer
Cost: TBD
Timeframe: 2025

141. Retain rainwater on street through green infrastructure methods
The installation of storage capacity underground (i.e. under sidewalks and roads where space is available) can provide rainwater retention in an area where large-scale detention/retention basins are infeasible such as the more densely built downtown.

Responsible Entity: City of Fargo Engineering Department
Funding Source: TBD according to location and method
Priority: Summer
Applicable Hazard: Low
Cost: TBD
Timeframe: 2025

142. Increase tree canopy coverage downtown to reduce urban heat island effect
Having adequate shade can reduce temperatures in the downtown core, thus alleviating somewhat the urban heat island effect. Air conditioning costs are reduced, and the aesthetic value of street trees will increase property values.

Responsible Entity: City of Fargo Public Works
Funding Source: Fargo's Forestry Department, USDA's Forest Service Urban and Community Forest Program, and the Environmental Protection Agency's (EPA) Urban Green Grants
Priority: Low
Applicable Hazard: Summer
Cost: TBD
Timeframe: 2025

143. Support the establishment of a resource center for homeless individuals
Most of the homeless shelters in the area are only open in the evenings and overnights. A center whereby people can visit during the day will not only provide a space to access services but will also be a place to warm up or cool down during extreme temperatures.

Responsible Entity: Fargo Cass Public Health
Funding Source: FEMA's Emergency Food and Shelter Program, City of Fargo's CDBG allocation and social service funding
Priority: Low
Applicable Hazard: Summer and Winter
Cost: High
Timeframe: 2026-2030

144. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Fago Emergency Management with the assistance of Cass County Emergency Management
Funding Source: Fargo's General Fund

Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

145. Increase security at Hector Internation Airport

Bolster security measures at Hector International Airport to prevent unauthorized access to airfields. Priorities include:

- Strengthening coordination between airport management and local law enforcement.
- Investing in improved fencing and surveillance systems to detect breaches promptly.
- Continuing joint training exercises with local emergency responders to ensure effective mutual aid and response protocols, including evacuation.

Responsible Entity: Hector International Airport Emergency Management, Cass County Emergency Management, Fargo Emergency Management, Sanford Ambulance, Fargo Fire, Hector International Airport Fire Department, Red River Regional Dispatch, and TSA
Funding Source: FEMA's BRIC and DHS's HSGP
Priority: High
Applicable Hazard: CTA
Cost: TBD
Timeframe: 2026

146. Formalize mutual aid agreement to support hazard events

Formalize mutual aid agreements for coordinated responses during hazard events. Recent experiences, such as the George Floyd civil unrest in Fargo, highlight the need for clear, formal plans and agreements for cross-agency support, such as firefighter readiness for civil disturbances.

Responsible Entity: Cass County Sheriff Department, Fargo Police Department, West Fargo Police Department, Fargo Fire Department, West Fargo Fire Department, Moorhead Fire Department, Moorhead Police Department, Clay County Sheriff
Funding Source: City of Fargo's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025

FRONTIER

147. Installation of warning sirens
Advanced warning will allow for increased preparedness with the potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Frontier's Auditor and Red River Dispatch Center
Funding Source: FEMA's HMGP and PMD
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2030

148. Upgrade storm sewer system
The storm sewer system was installed in the early 1990s. It will need to be upgraded in order to handle storm water adequately.

Responsible Entity: City of Frontier's Auditor
Funding Source: ND Department of Health's Clean Water State Revolving Fund and USDA's Rural Development Grant
Priority: Medium
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2028-2030

149. Create permanent flood protection around the City
This would reduce damages to public and private property and allow a more resilient community to without the frequent emergency flood preparations that have recently plagued the area.

Responsible Entity: City of Frontier's Auditor and Cass County Emergency Management
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: High
Timeframe: 2030-2035

150. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Frontier's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Frontier's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

151. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Frontier's Auditor and Cass County Emergency Management
Funding Source: City of Frontier's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

GARDNER

152. Drainage improvement project
The installation of storm sewer and storm sewer lift station would reduce flooding issues in town and the associated damages to private property and public property infrastructure. Currently, the culverts are improperly graded and therefore are unable to adequately remove water.

Responsible Entity: City of Gardner's Auditor with assistance of City Engineer
Funding Source: State Water Commission, Cass Flood Sales Tax, FEMA's MHGP, and USDA's Rural Development's Waste and Water Disposal Loan and Grant
Priority: Medium
Applicable Hazard: Flood
Cost: $2,000,000
Timeframe: 2030-2040

153. Obtain a Crisafulli pump for overland flooding
Invest in a high capacity Crisafulli pump to manage overland flooding efficiently, with the added capacity to transfer various fluids, including toxic materials. This pump will bolster the city's response capacity for floods and environmental hazards.

Responsible Entity: City of Gardner's Auditor
Funding Source: FEMA's HMGP
Priority: High
Applicable Hazard: Flood
Cost: High
Timeframe: 2027

154. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Gardner's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Gardner's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

155. Build city hall/pump storage facility
Design and construct a storage facility adjacent to City Hall to house emergency pumps and other critical equipment. This facility will ensure quick access to essential resources during flood events and other emergencies.

Responsible Entity: City of Gardner's Auditor
Funding Source: FEMA's BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: Medium
Timeframe: 2026

156. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging

that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Gardner's Auditor
Funding Source: City of Gardner's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

GRANDIN

157. Replace ditch system with storm sewer
Installation of storm sewer and a storm sewer lift station would reduce overland flooding issues in town and associated damages to private property and public infrastructure.

Responsible Entity: City of Grandin's Auditor with assistance of city's contracted engineer
Funding Source: ND Department of Health's Clean Water State Revolving Fund and USDAs Rural Development's Water and Waste Disposal Loan and Grant
Priority: Medium
Applicable Hazard: Flood
Cost: $2,000,000
Timeframe: 2030-2040

158. Address abandoned buildings
The city has around three abandoned buildings in town which present a threat to health and safety as well as a higher safety risk.

Responsible Entity: City of Grandin's Auditor
Funding Source: Housing and Urban Development's (HUD) Community Development Block Grant (CDBG)
Priority: Medium
Applicable Hazard: Urban, Disease
Cost: TBD
Timeframe: 2028-2030

159. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Grandin's Auditor with the assistance of Cass County Emergency Management
Funding Source: City Grandin's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

HARWOOD

160. Increase permanent flood protection throughout Harwood
The city is waiting to see whether the FM Diversion will begin construction before examining what flood protection measures would be appropriate.

Responsible Entity: City of Harwood's Auditor
Funding Source: FEMA's BRIC, HMGP, and FMA, ND State Water Commission's Cost-Share Program, Cass County Flood Control Tax
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2030

161. Install backup power generators at lift station
A back-up generator at the lift station would reduce the threat of discontinued service in the event of a power outage.

Responsible Entity: City of Harwood's Auditor
Funding Source: FEMA's BRIC or HMGP
Priority: High
Applicable Hazard: All Hazards
Cost: $200,000
Timeframe: 2030

162. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Harwood's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Harwood's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

163. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Harwood's Auditor and Cass County Emergency Management
Funding Source: City of Harwood's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

164. Stage shelter equipment in the community
Harwood is located along Interstate-29 and severe weather can force I-29 travelers to seek emergency shelter. The city will strategically store essential shelter equipment, such as cots, blankets, and medical supplies, at key locations near high-

traffic areas. This proactive approach will strengthen the city's ability to provide immediate shelter, ensuring the safety and well-being of stranded road travelers during hazard events.

Responsible Entity: City of Harwood's Auditor and Cass County Emergency Management
Funding Source: FEMA's BRIC
Priority: Medium
Applicable Hazard: Flood, Summer, Transport, Urban, Wildland, and Winter
Cost: TBD
Timeframe: 2026

165. Education and outreach about winter driving safety
Create a targeted winter driving safety education and outreach program, recognizing Harwood's strategic position along I-94 as the only southbound refueling stop before Fargo. The Cenex gas station frequently serves as a refuge for travelers stranded during hazardous winter conditions or those opting to stop rather than proceed on dangerous roads. The program will include real-time winter driving tips displayed on signage at the gas station and key roadways, distribution of preparedness materials, and partnerships with local emergency responders and state agencies to provide guidance during severe weather. These efforts will reduce the risks of crashes, improve traveler safety, and make motorists better informed.

Responsible Entity: City of Harwood's Auditor, Cass County Emergency Management, and NDDES
Funding Source: FEMA's HMGP, EMPG, and BRIC
Priority: Medium
Applicable Hazard: Winter
Cost: Staff Time
Timeframe: 2026

166. Emergency management training for both personnel and residents
Provide specialized training for first responders, including emergency management, firefighters, EMS, dispatch, and law enforcement, along with general training for residents.

Responsible Entity: City of Harwood's Auditor, Harwood Fire & Rescue, and Cass County Emergency Management
Funding Source: FEMA's Community Emergency Response Team (CERT) Program and AFGP
Priority: High
Applicable Hazard: All Hazards
Cost: Low
Timeframe: 2026

167. Install backup power generators at lift station
A back-up generator at the lift station would reduce the threat of discontinued service in the event of a power outage.

Responsible Entity: City of Harwood's Auditor
Funding Source: FEMA's BRIC or HMGP
Priority: Medium
Applicable Hazard: Flood, Summer, and Winter
Cost: High
Timeframe: 2027

HORACE

168. Enhancing existing storm sewer and lift station capacity
Increasing the capacity of the city's storm sewer system and installing new lift stations as needed, particularly as the city continues to grow and build out, will be necessary to deal with sever precipitation events.

Responsible Entity: City of Horace's Community Development Department
Funding Source: TBD
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2030

169. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Horace's Communications Department with assistance of Cass County Emergency Management
Funding Source: City of Horace's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

170. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Horace's Communications Department and Cass County Emergency Management
Funding Source: City of Horace's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

171. Study on public safety needs and response times
Conduct a comprehensive study to assess public safety needs, including fire, police, and emergency medical services. Evaluate current response times and identify areas where growth and infrastructure changes are affecting service capacity. This study will include geospatial analysis, public engagement, and collaboration with public safety officials to recommend improvements.

Responsible Entity: Southern Valley Fire & Rescue, Cass County Sheriff, Horace Community Development Department, and Cass County Emergency Management
Funding Source: FEMA's EMPG
Priority: Medium
Applicable Hazard: All Hazards
Cost: Medium
Timeframe: 2026

172. Upgrade first responder equipment, especially communication capabilities (Mobile Data Terminals (MDT))
Upgrade first responder equipment to enhance communication and operation capabilities. The project will focus on acquiring and installing MDTs in emergency response vehicles. MDTs will improve real time information sharing, dispatch communication, and coordination among responders, which is critical in rapidly growing area such as Horace.

Responsible Entity: City of Horace's Community Development Department and Cass County Emergency Management
Funding Source: FEMA's AFGP
Priority: Medium
Applicable Hazard: All Hazards
Cost: High
Timeframe: 2026

173. Trainings for active shootings
Provide active shooter training, focusing on violent threats in schools and other community spaces.
School employees and other organizations should complete the free Civilian response to Active Shooter Events (CRASE) course. This two-hour seminar based on the FBI-endorsed Avoid, Deny, Defend strategy covers the history of active shooter events, civilian response options, medical issues, and drills. An online training course is also available for broader community education.

Responsible Entity: City of Horace's Community Development Department and West Fargo Public School District
Funding Source: City of Horace's General Fund and DHS's HSGP
Priority: Medium
Applicable Hazard: CTA
Cost: Low
Timeframe: 2026

HUNTER

174. Installation of generators at the water pump house and sanitary sewer lift station
The water intake station and sanitary sewer lift station are critical to houses and business in town having basic services. Generators would reduce the threat of discontinued service in the event of a power outage.

Responsible Entity: City of Hunter's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2026-2030

175. Dredging ditches and replacing culverts in town
This will increase capacity, reduce issues of standing water, and impacts to property and infrastructure.

Responsible Entity: City of Hunter's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2030

176. Upgrade the spillway capacity of the Hunter Dam to modern standards
The dam's spillway capacity was built to the standards at the time. Upgrading it to modern standards will ensure it can function during the severe precipitation events that are more common nowadays.

Responsible Entity: City of Hunter's Auditor
Funding Source: North Dakota State Water Commission
Priority: Low
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2029-2030

177. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Hunter's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Hunter's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

178. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Hunter's Auditor
Funding Source: City of Hunter's General Fund

Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

KINDRED

179. Build a new levee on the south of Highway 46
A levee built on the south end of town will address overland flooding coming from the Sheyenne River.

Responsible Entity: City of Kindred's Planning and Zoning Committee with assistance from the City Engineer
Funding Source: FEMA's BRIC, HMGP, and FMA, Cass County Flood Control Sales Tax, and ND State Water Commission
Priority: Medium
Applicable Hazards: Flood
Cost: $500,000
Timeframe: 2030

180. Stabilize the slope of Highway 46 along the bank of the Sheyenne River
Implementing stabilization measures will reduce the risk of damage to the county highway and nearby private property.

Responsible Entity: City of Kindred's Planning and Zoning Committee with assistance from the City Engineer
Funding Source: FEMA's BRIC and HMGP
Priority: Medium
Applicable Hazard: Geological
Cost: $250,000
Timeframe: 2028

181. Backup generators for three lift stations
Ensuring these remain operational during power outages will allow continued service and prevent damage caused by backups.

Responsible Entity: City of Kindred's Planning and Zoning Committee with assistance from the City Engineer
Funding Source: FEMA's BRIC and HMGP
Priority: High
Applicable Hazard: Flood
Cost: $600,000
Timeframe: 2030

182. Install storm sewer system and lift station in the original townsite
Periodic internal flooding has occurred because of the city's poor drainage. The very high-water table, likely caused by many homes having their sump pumps connected to the sewer system, has caused significant inflow and infiltration problems. Requiring homeowners to pump water above ground would only contribute to the existing drainage issues. Installing a storm sewer system and lift station would rectify these problems.

Responsible Entity: City of Kindred's Planning and Zoning Committee with assistance from the City Engineer
Funding Source: FEMA's BRIC and HMG, ND Department of Health's CWSRF, USDAs Rural Development's Water and Waste Disposal Loan and Grant
Priority: Medium
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2030

183. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Kindred's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Kindred's General Fund
Priority: High

Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

LEONARD

184. Improve drainage by installing pump station to move water to legal drain approximately 1 mile south
The development of permanent system to move standing water out of town by utilizing an already existing legal drain would reduce damages to public and private property and lessen stains on city infrastructure.

Responsible Entity: City of Leonard's Auditor
Funding Source: FEMA's HMGP and BRIC and Cass County Flood Sales Tax
Priority: Low
Applicable Hazard: Flood
Cost: $1,000,000
Timeframe: 2030-2035

185. Permanent backup generator of lift station
Installing a permanent generator saves time and effort in hooking up the portable generator the city already owns.

Responsible Entity: City of Leonard's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: $200,000
Timeframe: 2026-2028

186. Tear down dilapidated structure located on Railroad Avenue
A building on Railroad Avenue that used to house a hardware store has fallen into disrepair and will need to be demolished.

Responsible Entity: City of Leonard's Auditor
Funding Source: HUD's CDBG
Priority: High
Applicable Hazard: Urban, Disease
Cost: TBD
Timeframe: 2026-2027

187. Harden the city shop to better withstand natural hazards
The city shop building was acquired via tax forfeiture and is inadequately prepared against disasters. For example, it has no heat and is insufficiently insulated. An evaluation of the facility by a qualified professional will determine what can be done in terms of mitigation. This may include the installation of a backup generator.

Responsible Entity: City of Leonard's Auditor
Funding Source: Dependent upon specific items identified
Priority: Low
Applicable Hazard: Geologic, Flood, Summer, Wildland, and Winter
Cost: TBD
Timeframe:2026-2028

188. Install new or upgrade existing culverts around Leonard
The city's internal drainage can be enhanced by replacing culverts around town with those that are greater capacity.

Responsible Entity: City of Leonard's Auditor
Funding Source: ND Department of Health's Clean Water State Revolving Fund loan and USDAs Rural Development's Water and Waste Disposal Loan and Grant
Priority: Low
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2028-2029

189. Obtain emergency generator
A portable generator for backup power will allow support for critical infrastructure and services, such as communication

systems and emergency response operations, which will help maintain functionality and safety when the main power supply is disrupted.

Responsible Entity: City of Leonard's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood, Summer, and Winter
Cost: Medium
Timeframe: 2026

190. Continue campaign to get people signed up for Cass Clay Alerts

Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Leonard's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Leonard's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

191. Promote storm safety information during Severe Weather Awareness Weeks

Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Leonard's Auditor
Funding Source: City of Leonard's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

MAPLETON

192. Permanent backup generators for lift station
Replacing the current temporary generators with permanently installed ones will save time and effort in getting backup power going, thus preventing interruptions in service.

Responsible Entity: City of Mapleton's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: $200,000
Timeframe: 2026-2028

193. Build levee to protect southeast industrial area
This would protect the industrial park area from overland flooding coming from the nearby creeks and channels, this allowing for future development.

Responsible Entity: City of Mapleton's Auditor
Funding Source: ND State Water Commission and Cass County Flood Control Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: $500,000
Timeframe: 2030

194. Storm sewer improvements along Maple Drive
The storm sewer system in the Maplewood neighborhood is undersized and there is no storm water detention in the area for larger precipitation events, thus leading to streets becoming flooded.

Responsible Entity: City of Mapleton's Auditor
Funding Source: ND Department of Health's CWSRF and FEMA's BRIC and HMGP
Priority: Medium
Applicable Hazard: Flood
Cost: $750,000
Timeframe: 2030

195. Storm sewer improvements in I-94 Industrial Park
The industrial park on the east side of the city south of the railroad tracks has a storm sewer system, but no storm water detention pond. Roads can be inundated during storms.

Responsible Entity: City of Mapleton's Auditor
Funding Source: ND Department of Health's CWSRF and FEMA's BRIC and HMGP
Priority: Medium
Applicable Hazard: Flood
Cost: $750,000
Timeframe: 2030

196. Improve drainage in the Prairie View Estates neighborhood
In the northeast quadrant of town, inadequate drainage does not necessarily cause flooding, but it does lead to a large amount of standing water that poses a health and safety risk.

Responsible Entity: City of Mapleton's Auditor
Funding Source: ND Department of Health's CWSRF
Priority: Low
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2030

197. Continue campaign to get people signed up for Cass Clay Alerts

Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Mapleton's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Mapleton General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

198. Promote storm safety information during Severe Weather Awareness Weeks

Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Mapleton
Funding Source: City of Mapleton's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

NORTH RIVER

199. Perform dike maintenance and repair and pursue recertification
Portions of the existing dike have developed low spots over time and trees have grown on the dike. Removing those trees would leave their roots in which is a weak spot for water intrusion. Portions of the dike may need to be replaced and the dike recertification and reaccredited.

Responsible Entity: City of North River's Auditor
Funding Source: FEMA's HMGP, BRIC, and FMA and Cass County Flood Sales Tax
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2028

200. Purchase new pump
One of the city's storm water pumps was stolen while the other two are undersized. A new pump of sufficient capacity and rate will provide better protection for residential property.

Responsible Entity: City of North River's Auditor
Funding Source: FEMA's HMGP, FMA, and BRIC and Cass County Flood Sales Tax
Priority: Medium
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2026-2028

201. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of North River's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of North River's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

202. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of North River's Auditor
Funding Source: City of North River's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

203. Consider creating a city Facebook page
A City of North River Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters,

supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of North River's Auditor
Funding Source: City of North River's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff budget
Timeframe: 2025

OXBOW

204. Continue campaign to get people signed up for Cass Clay Alerts

Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Oxbow's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Oxbow's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

205. Promote storm safety information during Severe Weather Awareness Weeks

Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Oxbow's Auditor
Funding Source: City of Oxbow's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

PAGE

206. Additional storm sewer installation and new lift station
Increasing the city's storm sewer capacity will better protect against flash flooding.

Responsible Entity: City of Page's Auditor
Funding Source: FEMA's HMGP, BRIC, and FMA, ND State Water Commission, Cass County Flood Sales Tax, and HUD's CDBG
Priority: High
Applicable Hazard: Flood
Cost: $500,000
Timeframe: 2030

207. Installation of warning sirens
Advanced warning will allow for increased preparedness with the potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Page's Auditor and Red River Regional Dispatch Center
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2030

208. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Page's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Page's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

209. Promote storm safety information during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Page's Auditor
Funding Source: City of Page's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

PRAIRIE ROSE

210. Increase capacity of ditches and culverts
Increasingly heavier precipitation events may create the need for the city's internal drainage capacity to be increased.

Responsible Entity: City of Prairie Rose's Auditor
Funding Source: TBD
Priority: Medium
Applicable Hazard: Flood
Cost: TBD
Timeframe: 2030

211. Install warning sirens
Advanced warning will allow for increased preparedness with the potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Prairie Rose's Auditor and Red River Regional Dispatch Center
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2027-2028

212. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Prairie Rose's Auditor with the assistance of Cass County Emergency Management
Funding Source: City of Prairie Rose's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

213. Promote storm safety during Sever Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Prairie Rose's Auditor and Cass County Emergency Management
Funding Source: City of Prairie Rose's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

214. Create a city Facebook page
A City of Prairie Rose Facebook page will enhance emergency management and community engagement. The Facebook page will provide real-time emergency alerts for hazards, correct misinformation, and share information on shelters, supplies, volunteering opportunities, and health advisories.
Additionally, the page will be used to educate residents about the natural hazards facing the community. By featuring

excerpts from this mitigation plan, the Facebook page can spotlight a specific hazard each month using excerpts from this plan, offering tips on preparedness and response. This consistent focus will raise awareness, improve readiness, and encourage proactive measures among residents.
Leveraging Facebook over a city website allows for more effective two-way communication, crowdsourcing, and live updates, strengthening threat monitoring, resource allocation, and overall community resilience through improved outreach and interaction.

Responsible Entity: City of Prairie Rose's Auditor
Funding Source: City of Prairie Rose's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff budget
Timeframe: 2025

REILE'S ACRES

215. Increase permanent flood protection
Providing permanent flood protection for the entire city will reduce the potential for damage, reduce flood insurance costs for property owners, and encourage the continued development of the city. This includes protecting against flash flooding resulting from severe summer storms. The method for protection will be better determined upon the progress of new FEMA floodplain maps as well as the FM Diversion.

Responsible Entity: City of Reile's Acres's Auditor
Funding Source: FEMA's HMGP
Priority: High
Applicable Hazard: Flood
Cost: TBD
Timeframe: TBD

216. Purchase and install backup power generators for three pumps stations
Installing permanent generators saves time and effort in hooking up a portable generator to the pump stations, thus ensuring continued operation during events.

Responsible Entity: City of Reile's Acres's Auditor
Funding Source: FEMA's HMGP
Priority: High
Applicable Hazard: Flood
Cost: $600,000
Timeframe: 2026-2028

217. Install warning siren on the north side of the city
The city has expanded to the north with a new subdivision. Installing a warning siren there would ensure the entire city is within audible distance.

Responsible Entity: City of Reile's Acres's Auditor and Red River Regional Dispatch Center
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2028

218. Purchase and install an ICC 500 compliant storm shelter at the new public park in the north side of Reile's Acres
Building a storm shelter according to FEMA requirements will offer a safe space for park guests if a tornado or other dangerous storm were to hit.

Responsible Entity: City of Reile's Acres's Auditor
Funding Source: FEMA's HMGP
Priority: Low
Applicable Hazard: All Hazards
Cost: TBD
Timeframe: 2026-2028

219. Improve the city's fire protection capabilities by installing infrastructure that will increase the pressure of the water lines to accommodate fire hydrants or a pumper truck
Approximately 40% of the city's water lines cannot accommodate fire hydrants or pumper trucks, leaving it more difficult to respond adequately to fires. The city will consider a water tower that will pressurize water for distribution.

Responsible Entity: City of Reile's Acres's Auditor
Funding Source: The Department of the Interior's (DOI) Rural Fire Assistance (RFA) program and USDA's Rural Utilities Service (RUS)
Priority: Low
Applicable Hazard: Urban

Cost: TBD
Timeframe: 2028-2030

220. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Reile's Acres's Auditor with the assistance of Cass County Emergency Management
Funding Source: Reile's Acres General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

221. Promote storm safety during Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Reile's Acres's Auditor and Cass County Emergency Management
Funding Source: Reile's Acres General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

TOWER CITY

222. Installation of warning sirens
Advanced warning will allow for increased preparedness with the potential to reduce property damage and lessen the potential of loss of life.

Responsible Entity: City of Tower City's Auditor and Red River Regional Dispatch
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $50,000
Timeframe: 2026-2030

223. Backup generators for sanitary lift station
Installing permanent backup generators at the two lift stations will ensure continued service through an incidence of power loss.

Responsible Entity: City of Tower City's Auditor
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Flood
Cost: $400,000
Timeframe: 2027-2028

224. Procure weather radios for residents and the fire hall
NOAA weather radios are a valuable tool to warn residents of an incoming severe storm or tornado. Procuring these and offering them to residents will ensure everyone is made aware and seeks appropriate shelter.

Responsible Entity: City of Tower City's Auditor
Funding Source: FEMA's BRIC and HMGP
Priority: Low
Applicable Hazard: Summer
Cost: TBD
Timeframe: 2027-2028

225. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: City of Tower City's Auditor with the assistance of Cass County Emergency Management
Funding Source: Tower City's General Fund
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2025 and beyond

226. Stage shelter equipment
Tower City is located along Interstate-94 and severe weather can force I-94 travelers to seek emergency shelter. The city will strategically store essential shelter equipment, such as cots, blankets, and medical supplies, at key locations near high-traffic areas. This proactive approach will strengthen the city's ability to provide immediate shelter, ensuring the safety and well-being of stranded road travelers during hazard events.

Responsible Entity: City of Tower City's Auditor and Cass County Emergency Management
Funding Source: FEMA's BRIC

Priority: Medium
Applicable Hazard: Flood, Summer, Transport, Urban, Wildland, and Winter
Cost: TBD
Timeframe: 2026

227. Promote storm safety information for Severe Weather Awareness Weeks
Promote the National Weather Service's storm safety information during Severe Weather Awareness Weeks by distributing educational materials though local partners, schools, and community organizations. This includes utilizing materials created by Cass County Emergency Management (such as flyers, social media posts, and PSAs) as a basis for community messaging that will strengthen public preparedness and response to severe weather, aiming to reduce storm-related risks and improve community resilience.

Responsible Entity: City of Tower City's Auditor and Cass County Emergency Management
Funding Source: Tower City's General Fund
Priority: Medium
Applicable Hazard: Summer and Winter
Cost: Staff time
Timeframe: 2025 and beyond

228. Assess dam impacts to Tower City
Conduct an assessment of the Koldok Railroad Dam's impact on Tower's City, focusing on its capacity to manage extreme weather events and prevent potential flooding. The study will include hydrological modeling, risk assessments, and development of mitigation measures such as improved flood control infrastructure or emergency action plans.

Responsible Entity: Tower City's Auditor and Cass County Emergency Management
Funding Source: National Oceanic and Atmospheric Administration's (NOAA) Hydrologic Research Grants, FEMA's BRIC, US Army Corps of Engineers' (USACE) Silver Jackets, and North Dakota State Water Commission
Priority: Low
Applicable Hazard: Dam
Cost: Medium
Timeframe: 2028

WEST FARGO

229. Inventory of riverbank semiannually, LIDAR, plus physical observation assessments with video imaging on the river and geospatial (drones)
By conducting semiannual inventories of riverbanks using LIDAR, physical observation, video imaging, and drone-based geospatial assessments, the City of West Fargo will maintain a detailed and up-to-date understanding of riverbank conditions. This action will help early identification of geologic hazards, supporting timely actions to protect public safety, infrastructure, and the environment.

Responsible Entity: City of West Fargo's Engineering Department
Funding Source: FEMA's HMGP and BRIC
Priority: Medium
Applicable Hazard: Geological
Cost: $350,000
Timeframe: 2025-2035

230. Replace storm sewer outfalls along Sheyenne River and rehabilitate storm force-main and stabilize riverbank at locations
This action will reduce future losses of land due to sloughing in the area and maintain integrity of infrastructure and private property in the area.

Responsible Entity: City of West Fargo Engineering Department
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Geological
Cost: $1,500,000
Timeframe: 2026-2029

231. Acquire and remove residential homes along the Sheyenne River followed by stabilization of the riverbank and restoration of greenspace
This will reduce future damages to the removed structures as well as allow additional green way in for emergency protection in case of a future event. Bank stabilization would be an added benefit to land beyond the immediate project area.

Responsible Entity: City of West Fargo Emergency Management
Funding Source: FEMA's HMGP, BRIC, and FMA
Priority: High
Applicable Hazard: Geological
Cost: $3,500,000
Timeframe: 2026-2027

232. Acquire and demolish condominiums at 530 6th Ave W and remove or repair attendant utilities
This will remove residences currently at risk from flooding. The additional green way can provide space for emergency protection if needed. Bank stabilization and utility rehabilitation or removal would be an added benefit to the entire system
Responsible Entity: City of West Fargo Emergency Management and Engineering Department
Funding Source: FEMA's HMGP, BRIC and FMA
Priority: High
Applicable Hazard: Geological
Cost: $2,000,0000-$3,000,000
Timeframe: 2026-2036

233. Riverbank stabilization by Main Avenue Self Storage
This will prevent future erosion in the area and maintain the integrity of infrastructure and private property in the area.

Responsible Entity: City of West Fargo
Funding Source: FEMA's HMGP and BRIC
Priority: High

Applicable Hazard: Geological
Cost: $200,000
Timeframe: 2026-2027

234. Assess slope stabilization design and implement related outreach
Assess areas at risk of erosion and slope instability, develop a comprehensive outreach program to educate property owners, and implement slope stabilization projects where needed.

Responsible Entity: City of West Fargo
Funding Source: FEMA's BRIC
Priority: Low
Applicable Hazard: Geological
Cost: $300,000
Timeframe: 2026-2030

235. Address land subsidence along Center Street by stabilizing the riverbank
This will prevent future erosion in the area and maintain the integrity of infrastructure and private property in the area.

Responsible Entity: City of West Fargo Engineering Department
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Geological
Cost: $750,000
Timeframe: 2026-2030

236. Assess and remove sediment in retention ponds and review and implement a city policy on stormwater retention ponds maintenance
Evaluate and remove accumulated sediment in retention ponds to restore stormwater capacity and effectiveness of managing stormwater. By addressing sediment buildup, this project will reduce flood risks, improve water quality, and enhance the overall resilience of stormwater management systems. Additionally, the development and implementation of a city-wide policy for the ongoing maintenance of retention ponds. This policy will establish regular inspection schedules, sediment removal plans, and long-term maintenance standards to sustain these improvements and prevent future capacity loss.

Responsible Entity: City of West Fargo Public Works Department
Funding Source: FEMA's BRIC
Priority: Low
Applicable Hazard: Flood
Cost: $300,000
Timeframe: 2026-2030

237. Amend landscape ordinances that encourage the use of xeriscaping and plants native to the region
Allowing property owners to use less water-dependent landscaping methods can lead to noticeable changes in overall water consumption if implemented on a wide-enough scale. This would be helpful during times of drought.

Responsible Entity: City of West Fargo Planning and Zoning Department
Funding Source: Incorporate with future department budgets
Priority: Low
Applicable Hazard: Drought
Cost: $20,000
Timeframe: 2027-2029

238. Upgrade lift station by installing onsite permanent generators, purchasing dedicated portable generators, and design lift stations with pads for installation of generators or pads for portable generators access
This will improve the system's existing capacity by ensuring efficient and effective removal of sewage in lines during disasters, thus reducing health issues and improving treatment capability

Responsible Entity: City of West Fargo Public Works
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: $200,000
Timeframe: 2026-2030

239. Review, evaluate update master plans and neighborhood plans for opportunities to mitigate all hazards and harden infrastructure

Review, evaluate, and update existing master plans and neighborhood plans to identify and incorporate strategies for mitigating all hazards. Key objectives include strengthening critical infrastructure, improving building codes, integrating hazard mitigation strategies, and aligning local development goals with resilience best practices. The effort will focus on ensuring the community is better prepared for natural disasters, technological hazards, and human caused threats.

Responsible Entity: City of West Fago
Funding Source: FEMA's HMGP, and BRIC
Priority: Medium
Applicable Hazard: All Hazards
Cost: $50,000
Timeframe: 2026-2030

240. Implement a barrier at the Lights parking ramp that addresses public safety concerns for self-harm and targeted mass casualty opportunities

Design and install physical barriers at the Lights parking ramp to prevent self-harm incidents and reduce vulnerabilities to mass casualty events. The implementation will include robust safety measures and infrastructure improvements to create a safer environment for the public, deterring potential threats while fostering a sense of security in high-traffic urban areas.

Responsible Entity: City of West Fargo Police Department
Funding Source: DHS's HSGP and FEMA's BRIC
Priority: High
Applicable Hazard: CTA
Cost: $1,100,000
Timeframe: 2026-2030

241. Evaluate and install stationary license plate readers at strategic locations (points of entry) and systems to alert locations for LE to track and address individuals and persons of interest

Evaluate and strategically install stationary license plate readers at key points of entry to enhance law enforcement's ability to monitor and track individuals and vehicles of interest. The system will include real-time alerts to support rapid response to potential threats, enabling local jurisdictions to address criminal activities more effectively while bolstering regional security efforts.

Responsible Entity: City of West Fargo Police Department
Funding Source: DHS's HSGP
Priority: Medium
Applicable Hazard: CTA
Cost: $1,200,000
Timeframe: 2026-2029

242. Recording devices and systems for metro area cameras that are installed and can be monitored in real time

Procure and install recording devices and monitoring systems for existing and future metro area cameras. These systems will provide real-time surveillance capabilities to improve situational awareness, incident response, and public safety across the metro area.

Responsible Entity: City of West Fargo Police Department
Funding Source: DHS's HSGP
Priority: Medium
Applicable Hazard: CTA

Cost: $2,000,000
Timeframe: 2026-2029

243. Metro-wide training for mobile field force and arrest teams so that all jurisdictions are trained together and in the same exact ways so they can function together as one large force intermingled jurisdictions
Develop and implement metro-wide training programs for mobile field forces and arrest teams to ensure standardized training across all jurisdictions in the County. By training all units together and using consistent protocols, this imitative will enable seamless inter-jurisdictional collaboration, during emergencies or civil unrest, and enhance overall public safety operations.

Responsible Entity: City of West Fargo Police Department
Funding Source: DHS's HSGP
Priority: High
Applicable Hazard: CTA
Cost: $1,200,000
Timeframe: 2026-2036

244. Evaluate, assess and install a lift station along with upgrading infrastructure in downtown core area to address poor drainage and back pressure against the storm water system from the river. Purchasing of property for local retention
Evaluate, assess, and install a new lift station and upgrade existing infrastructure in the downtown core area to address poor drainage and back pressure on the stormwater system caused by the river. Additional activities include acquiring property and retention basins to reduce urban flooding risks and improve long-term stormwater management.

Responsible Entity: City of West Fargo Engineering Department
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Summer
Cost: $13,000,000
Timeframe: 2026-2036

245. Redundant lift stations to all that are single point transference of Sanitary Sewer, specifically SA 40 and SA 27
Bigger lift stations with more backup pumps or secondary redundant lift stations are needed at two locations SA 40 and SA 27) of the West Fargo Sanitary Sewer system. Currently they pose risks to certain neighborhoods because the loss of a lift station will result in sewage backup into homes, and other options would be environmentally unsound. Installation of redundant lift stations will mitigate this potential impact.

Responsible Entity: City of West Fargo Engineering Department
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: Flood
Cost: $1,440,000
Timeframe: 2026-2036

246. Sediment removal and maintenance policy for retention ponds
Evaluate and remove accumulated sediment in retention ponds to restore stormwater capacity and reduce flood risks. Develop and implement a city-wide policy for ongoing maintenance of stormwater retention ponds to sustain these improvements.

Responsible Entity: City of West Fargo Public Works Department
Funding Source: FEMA's BRIC
Priority: Low
Applicable Hazard: Flood
Cost: $150,000
Timeframe: 2026-2028

247. Continue campaign to get people signed up for Cass Clay Alerts
Continue the campaign to increase enrollment in the Cass Clay Alerts emergency notification system. This service allows

residents of Cass County, ND and Clay County, MN, to opt-in for real-time alerts via email, text, or voice messages. The alerts cover a range of emergency situations, including natural disasters, severe weather, chemical spills, and community service updates. The more people who sign up for this alert service, the better local officials can directly share critical information with residents, strengthening public safety, and empowering individuals with the knowledge they need to take appropriate action.

Responsible Entity: West Fargo Emergency Management
Funding Source: West Fargo's General Fund
Priority: Medium
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2026-2030

248. Continue strengthening planning collaboration between law enforcement and emergency management
Enhance planning collaboration between law enforcement agencies and emergency management to improve resource allocation, coordination, and incident response. Given the strain large-scale events place on law enforcement, there is a need for closer coordination with regional emergency management teams. By integrating emergency management strategies and incent command structures across departments, this action aims to ensure a unified approach to managing outdoor and indoor events. The partnership will prioritize joint planning sessions, shared training opportunities, and the development of comprehensive incident response protocols to address potential hazards effectively while optimizing the use of resources

Responsible Entity: City of West Fargo Police Department
Funding Source: FEMA's HMGP and BRIC
Priority: High
Applicable Hazard: All Hazards
Cost: Staff time
Timeframe: 2026-2030

CHAPTER 6: Plan Maintenance

This chapter details the plan maintenance process to make sure the Cass County Multi-Hazard Mitigation Plan will remain an active and relevant document. The plan maintenance process includes:

- monitoring progress in implementation of mitigation strategy and actions,
- evaluating the success of the plan at achieving its goals,
- maintaining public participation,
- documenting new information or when significant events occur for the next plan update,
- working toward integration of the plan into other participant planning mechanisms, and
- preparing for updating the plan.

Plan Monitoring and Evaluation

The Emergency Management Steering Committee (similar to an LEPC) will review the plan once per year. A basic agenda for the meeting should include:

- Responsible entity reports on project status
- Discussion of project progress for the current year
- Discussion of upcoming projects and grant/funding opportunities
- Development of action list for upcoming year

The responsible entities for mitigation actions will be requested to provide the following basic information about projects in the reporting period:

- What was accomplished since the last review meeting
- What obstacles, problems or delays the project encountered
- If the project needs to be changed or reviewed

The Emergency Manager will provide a briefing of the annual Steering Committee plan review to the Cass County Board of County Commissioners. Notice of this briefing will be published like other public notices and the briefing will take place at a County Commission regular meeting which is open to public attendance and input. Community officials will be invited as well.

Project progress should be recorded on a standard form such as the Mitigation Action Progress Report Form found in Appendix E. A form should be completed for each project during the reporting period (and projects from previous reporting periods that have not been completed). If time constraints are an issue, the Steering Committee may decide to only complete the form for high priority projects; lower-priority projects may be generally discussed without completing the form. The Emergency Manager should maintain a folder with all Mitigation Action Progress Report Forms and meeting notes.

A risk and vulnerability assessment should be evaluated during a Steering Committee meeting approximately two years after plan adoption. Any changes to risks since plan adoption, such as a major flood event that damaged areas thought to be safe from flooding, should be noted. If there are new additions or changes to critical facilities in a jurisdiction, a report detailing these changes should be made. The Emergency Manager should save the report of changes for reference during the next five-year plan update.

Steering Committee meetings that are reserved for discussion of the plan should be open to the public. Since weather and infectious disease impacts have been so significant in the area in recent years, there may be public interest in ongoing efforts to reduce hazard impacts. A simple Annual Emergency Management Status Report may be a reasonable product of the Steering Committee monitoring and evaluation process. The report could be posted on the relevant county website and Facebook pages. A copy of the Report could be sent to newspapers serving the area.

Project success will be measured by the stage of implementation each year. Table 6.1 illustrates a three-stage process for each kind of mitigation action. Some actions may only achieve Stage 1 in a given year but should aim to achieve at least the next stage the following year. Measurement of success in education activities should be evaluated a little differently. The primary objective is to complete all the annual activities planned for a year. But more incremental measurement can be

achieved by documenting efforts to increase the number of annual activities planned for each year, and by increasing the number of activities completed each year.

Table 6.1 Project Success Measurement			
Action Type	**Stage 1**	**Stage 2**	**Stage 3**
Structural	Funding identified and requested	Funding received or obligated	Construction completed
Natural	Design completed	Resources in hand	Action completed
Planning	Document development process initiated	Document approved	Implementation ongoing or completed
Education	Annual activities identified	Number of activities prepared	Number of activities completed

Community Engagement in Plan Maintenance

Gaining widespread public participation in hazard mitigation planning is extremely challenging. Although inviting public attendance and input through websites and advertisements for the Emergency Manager's annual review briefing should be done, it may be more effective to focus on outreach at the community level. In addition to the annual review by the Steering Committee, County Emergency Management staff reach to each of the communities in Cass County. Objectives for this outreach are to remind the city of mitigation action items listed for the community and encourage the completion of the mitigation activities. Individual communities are responsible for their own outreach endeavors and should center on mitigation action status and emerging needs. Table 6.2 lists outreach mediums each community can involve the public.

Table 6.2 Community Outreach Strategies													
	Alice	**Amenia**	**Argusville**	**Arthyr**	**Ayr**	**Briarwood**	**Buffalo**	**Casselton**	**Davenport**	**Fargo**	**Frontier**	**Gardner**	**Grandin**
Provide link to County's Emergency Management Webpage on each jurisdiction's Facebook or Website	X	X	X		X		X	X		X	X	X	X
Use outreach booth at community events (could partner with First District Public Heath or County Water Board)	X	X	X	X	X	X	X	X	X	X	X	X	X
Ask NDDES to organize a Community Coffee each year	X	X	X	X	X	X	X	X	X	X	X	X	X
Request that MHMP Action Items for each jurisdiction be posted on their Facebook or Website	X	X	X		X		X	X		X	X	X	X
Post infographics regarding critical topics germane to each jurisdiction at a community bulletin board or a kiosk located in or near a community gathering spot	X	X	X	X	X	X	X	X	X	X	X	X	X
Add MHMP on County/Municipal Website	X	X	X	X	X	X	X	X	X	X	X	X	X
Provide a monthly news release on articulated needs to the Cass County Reporter and Fargo Inform on Hazard of the Month										X			
Seek to collaborate on a monthly basis with local radio and tv stations to publicize implementation activities in which residents can participate	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 5.2 Community Outreach Strategies														
	Harwood	Horace	Hunter	Kindred	Leonard	Mapleton	North River	Oxbow	Page	Prairie Rose	Reile's Acres	Tower City	West Fargo	Cass County
Provide link to County's Emergency Management Webpage on each jurisdiction's Facebook or Website	X	X	X	X	X		X	X	X	X	X	X	X	X
Use outreach booth at community events (could partner with First District Public Heath or County Water Board)	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ask NDDES to organize a Community Coffee each year	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Request that MHMP Action Items for each jurisdiction be posted on their Facebook or Website	X	X	X	X	X		X	X	X	X	X	X	X	X
Post infographics regarding critical topics germane to each jurisdiction at a community bulletin board or a kiosk located in or near a community gathering spot	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Add MHMP on County/Municipal Website	X	X		X	X		X	X	X				X	X
Provide a monthly news release on articulated needs to the Cass County Reporter and Fargo Inform on Hazard of the Month													X	X
Seek to collaborate on a monthly basis with local radio and tv stations to publicize implementation activities in which residents can participate	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Integration into Existing County-wide Planning Mechanisms

Due to the limited resources of most jurisdictions in Cass County, few planning mechanisms generally are in place for them. But all jurisdictions establish annual budgets. Budgets are a planning mechanism because they define primary objectives and intentions of a jurisdiction for each year. Some of the mitigation actions included in this plan are infrastructure related. It would be helpful for each jurisdiction to incorporate the infrastructure projects pertaining to them, or at least have the project details available for the beginning of their annual budget process. It is the role of each responsible entity identified in Chapter 5 to be present at annual budget meetings and advocate for consideration of mitigation projects. Additionally, the Cass County Emergency Management Department intends to reach out to each community each year to encourage the communities to work toward completion of its mitigation actions. This should take place before the annual budget process of each community begins.

Comprehensive Plans are another important planning mechanism. A comprehensive plan is a valuable tool for counties and cities to evaluate needs and establish strategies for meeting these needs. Many Cass County jurisdictions do not have comprehensive plans. These plans are especially useful as tools to look for synergies in addressing multiple needs in a comprehensive and coordinated manner. The best emergency management practices prevent problems from even being constructed or initiated because jurisdictional practices reduce the lack of foresight that allows such things to happen. Comprehensive Plans are most useful when paired with land use regulations such as zoning and subdivision codes. To the extent possible, local jurisdictions should establish comprehensive plan policies and zoning and subdivision regulations that minimize potential impacts to community assets from hazards. As an example, this may include establishing larger setback requirements from potential hazards.

Each jurisdiction's planning and regulatory capabilities are identified in Table 4.1. The process for updating or creating comprehensive plans and land use regulations is extensive and costly. And if a jurisdiction does not have the capabilities of administering and enforcing them, there is little value to them. But when jurisdictions choose to develop new or update existing plans and regulations they should incorporate or utilize information regarding hazards and actions identified in this mitigation plan. Table 6.3 provides examples of mitigation strategies which can be incorporated into planning mechanisms.

The following list identifies existing planning mechanisms which may be used to integrate and/or implement hazard mitigation actions:

- City of Alice Building Codes
- City of Alice Zoning Ordinance
- City of Amenia Building Code
- City of Amenia Zoning Ordinance
- City of Argusville Building Code
- City of Argusville Zoning Ordinance
- City of Argusville Comprehensive Plan
- City of Arthur Building Code
- City of Arthur Comprehensive Plan
- City of Arthur Stormwater Management Plan
- City of Briarwood Building Code
- City of Briarwood Zoning Ordinance
- City of Briarwood Floodplain Management Ordinance
- City of Buffalo Building Code
- City of Buffalo Zoning Ordinance
- City of Buffalo Historic Preservation Plan
- City of Casselton Building Code
- City of Casselton Zoning Ordinance
- City of Casselton Subdivision Ordinance
- City of Casselton Floodplain Management Ordinance
- City of Casselton Comprehensive Plan
- City of Casselton Historic Preservation Plan
- City of Casselton Stormwater Plan

- City of Casselton Capital Improvement Plan
- City of Davenport Building Code
- City of Davenport Zoning Ordinance
- City of Davenport Floodplain Management Ordinance
- City of Gardner Zoning Ordinance
- City of Gardner Subdivision Ordinance
- City of Grandin Building Codes
- City of Grandin Zoning Ordinance
- City of Grandin Capital Improvement Plan
- City of Harwood Building Code
- City of Harwood Zoning Ordinance
- City of Harwood Floodplain Management Ordinance
- City of Harwood Stormwater Management Plan
- City of Harwood Capital Improvement Plan
- City of Kindred Building Code
- City of Kindred Zoning Ordinance
- City of Kindred Subdivision Ordinance
- City of Kindred Floodplain Management Ordinance
- City of Kindred Comprehensive Plan
- City of Kindred Stormwater Plan
- City of Kindred Capital Improvement Plan
- City of Mapleton Building Code
- City of Mapleton Zoning Ordinance
- City of Mapleton Subdivision Ordinance
- City of Mapleton Floodplain Management Ordinance
- City of Mapleton Comprehensive Plan
- City of Mapleton Transportation Plan
- City of Mapleton Stormwater Management Plan
- City of North River Building Code
- City of North River Zoning Ordinance
- City of Oxbow Building Code
- City of Oxbow Zoning Ordinance
- City of Oxbow Subdivision Ordinance
- City of Page Zoning Ordinance
- City of Prairie Rose Zoning Ordinance
- City of Prairie Rose Subdivision Ordinance
- City of Prairie Rose Comprehensive Plan
- City of Prairie Rose Stormwater Management Plan
- City of Prairie Rose Capital Improvement Plan
- City of West Fargo Zoning Ordinance
- City of West Fargo Subdivision Ordinance
- City of West Fargo Floodplain Ordinance
- City of West Fargo Comprehensive Plan
- City of West Fargo Stormwater Management Plan
- City of West Fargo Capital Improvement Plan

Table 6.3 – Incorporating the Mitigation Plan into Jurisdictional Planning Mechanisms	
Planning Mechanism	**Mitigation Strategies to Do**
Building Code	Adopting and enforcing building codes to mitigate risk from hazards such as flooding, severe summer & winter weather, geologic hazards and dam failure
Zoning Ordinance	Adopting zoning regulations that mitigate risk from hazards such as flooding, hazardous materials releases, dam failure, and wildfire
Subdivision Ordinance	Identify floodplains on plats as required by state law; evaluate potential from hazards to impact proposed development defined by the plat; use stormwater management standards to reduce potential for overland flooding
Comprehensive Plan	Include policies to reduce hazard risks. Examples may include increased setbacks or defining hazard areas as non-development areas
Capital Improvement Plan	Include actions to reduce hazard risks. Examples may include transportation and public utility infrastructure improvements.
Cass County Emergency Operations Plan	Incorporate the plans for response, preparedness, and recovery operations that are linked to mitigation action

Plan participants that do not currently have some or all of the planning mechanisms listed above could establish those planning mechanisms to further implement this plan. This includes:

- Adopting the state building code
- Enacting subdivision and zoning regulations
- Collaborating with the next relevant Comprehensive Economic Development Strategy (CEDS) process by sharing analyses from this document to inform the CEDS planning process, and potentially help implement mitigation strategies of this document.
- Creating comprehensive plans to actively integrate with multi-hazard mitigation planning
- Budgeting for mitigation actions during each year's annual budgeting process or create a project finance plan (which may include pursuit of grants) to accumulate funds toward completion of the projects

All jurisdictions should prioritize action items applicable to them and incorporate them into their annual budget decisions. While the small communities in Cass County have limited resources, it is especially important that they consider potential hazard impacts related to the decisions they make and to development that may occur. For the next five years, specific effort needs to be directed at reminding each community of the need to be mindful of potential hazard impacts.

Items from the risk/vulnerability assessment and action items that involve response activities from this plan should also be integrated into the county's Emergency Operations Plan (EOP).

Independent of local jurisdiction activities, the County Emergency Management Department may be able to unilaterally educate and encourage implementation of best practices.

Updating the Plan

The County Emergency Manager is responsible for overseeing the five-year update process. It is advisable to begin the plan update process approximately twenty-four months prior to the expiration of the current plan because of the additional level of effort required by new FEMA policy guidance. The new guidance requires substantially increased record keeping, and it would behoove each jurisdiction to identify all records that should be kept so as to have the information on hand when the next update is initiated. The Emergency Manager should maintain any documentation gathered during the five-year period that will be useful when developing the update. The most helpful way to prepare is to track the status of the mitigation actions in this plan. This will help to greatly reduce the research collection phase of the plan update, which will reduce the time and cost of the plan update. It will also ensure that any priority items identified during Steering Committee monitoring meetings will be included in the plan.

Appendix A: Adoption Resolutions

Appendix B: Planning Process

Overview

At the onset of the project, the emergency manager and consultant discussed the planning team and outreach issues and opportunities. The overall approach to the planning process included ongoing data collection and development of jurisdictional capabilities and hazard assessment while conducting two rounds of outreach to community members and officials. The two rounds of outreach were to be supplemented by a project website and direct contact with key stakeholders. Mitigation strategy development was intended to be initiated by the consultant and the emergency manager and supplemented by input from the second round of community meetings. The intent was to publicize the website, community meetings, and means for direct comment to **provide opportunity to be involved to the whole community**. Opportunity to be involved means that these stakeholders are invited to be engaged or are asked to provide information or input to inform the plan's content. When it became apparent that this project would be subject to the new FEMA guidance on equity, **more targeted outreach to disenfranchised and underserved cohorts of the whole community was added**. Involvement means being engaged and actively participating in the development of the plan: providing input, affecting, or editing plan content as the representative of the participating jurisdiction or organization. **The level of involvement at the community meetings was limited and resulted in considerable direct contact to key stakeholders in order to obtain critical information or input from each jurisdiction and from other agencies or organizations**. The following sections provide more details about the planning process.

Project Meeting Schedule

A round of meeting events was held to engage the public and local jurisdiction officials. A community coffee event was organized to engage key stakeholders from underserved communities. A business safety meeting brought together professionals from various sectors within the County to discuss hazard concerns. Additionally, the Planning Team hosted a Microsoft Teams meeting with neighboring counties to gather input on hazard concerns and local actions that could impact Cass County. Sign-in Sheets and Meeting Notices can be found later in this Appendix. A list of representatives from participating jurisdictions is available with the sign-in sheets.

Community MHMP Meeting ((June 6, 2024); (Horace Fire Hall), (Horace, ND))

Reviewed MHMP purpose and process; reviewed recent hazard events; discussed most significant hazards and potential mitigation actions.

Community MHMP Meeting ((June 10, 2024); (Casselton City Auditorium), (Casselton, ND))

Reviewed MHMP purpose and process; reviewed recent hazard events; discussed most significant hazards and potential mitigation actions.

Community MHMP Meeting ((June 12, 2024); (Northern Cass School Auditorium), (Hunter, ND))

Reviewed MHMP purpose and process; reviewed recent hazard events; discussed most significant hazards and potential mitigation actions.

Community MHMP Meeting ((June 17, 2024); (Buffalo Community Center), (Buffalo, ND))

Reviewed key points from the draft MHMP, reviewed and refined draft mitigation actions for individual cities.

Community Coffee with Access and Functional Needs Individuals and Organizations; ((June 24, 2024); (Fargo Public Library – Downtown) (Fargo, ND))

Received feedback about disabled persons within the community regarding hazards, support methods people with disabilities seek during an emergency, challenges faced during a disaster, impacts of climate change, advocates, and personal preparedness.

Northern Region Association of Safety Professionals (NRASP) ((July 8, 2024); (Dawson Insurance Agency) (Fargo, ND))

Described MHMP development process; discussed hazard events and concerns for represented industries.

Neighboring Communities Meeting ((August 26, 2024); (Teams Meeting)

Discussed hazard threats, capabilities, and areas of desired increased coordination in mitigation efforts among neighboring counties.

Cass County Steering Committee Meeting ((September 4, 2024); (Public Safety Building) (Fargo, ND))

Reviewed MHMP purpose and process; reviewed recent hazard events; discussed most significant hazards, what is working well, threats, and potential mitigation actions.

Meeting Attendance

Representatives from each participating jurisdiction who attended at least one meeting are listed below. Planning Team members are denoted with an asterisk (*).

HORACE (SOUTHERN VALLEY FIRE & RESCUE)

- No attendance

CASSELTON (CASSELTON CITY AUDITORIUM)

- Albert Frisinger, Reed Township Zoning Administrator & Supervisor

HUNTER (NORTHERN CASS PUBLIC SCHOOL)

- Chayla Hanson, City of Harwood Auditor*

BUFFALO (BUFFALO COMMUNITY CENTER)

- Jim Jager, City of Buffalo Mayor*

FARGO (ACCESS AND FUNCTIONAL NEEDS MEETING)

- Lori Miller, Fargo Cass Public Health, Representative*
- Doug Murphy, Fargo Cass Public Health, Coordinator*
- Molly Benedetto, YWCA, Shelter Manager
- Leslie Dawson, United Way Cass Clay, Representative
- Katie Leitch, NDDES, Planning Department Specialist
- Denny Grocott, Dakota Boys & Girls Ranch, Facilities Manager
- Valentia Asiedu, Global Refuge, Refugee Health Navigator
- Jennifer Illich, FirstLink, Executive Director
- Rebecca Knutson, Great Plains Food Bank, Corporate Engagement Manager
- Sylivayns Domah, Fargo Cass Public Health, Representative
- Suzanne Degrugillier, Presentation Partners in Housing, Executive Administrative Assistant
- Quin Overland, Moorhead, MN, citizen
- Joel Quanbeck, KLJ Engineering, Community Planner
- Kris Baumann, Fraser, Health Services Administrator
- Tammy DeSautel, Job Service North Dakota, North Dakota State Council on Developmental Disabilities (NDSCDD)
- Stacie Loegering, Emergency Food Pantry, Executive Director
- Dan Hannaher, Global Refugee, North Dakota Field Director
- Sarah Weisser, Freedom Resource Center
- Allison Vetter, NDDES, Strategic Communications Chief
- Greg Gust, NDDES, Meteorologist
- Kathleen Donahue, NDDES, Deputy Planning Chief

- Shannon Stanke, North Dakota Brain Injury Network, Representative
- Ahmed Makaraan, ESHARA, Executive Director
- Suedo Mohmad, ESHARA, Representative

FARGO (NRASP MEETING)

- Dale Larson, Associated Builders and Contractors, ND Regional Director
- Melissa Olheiser, OSHA Environmental Compliance Systems, Regional Director
- Chris Anderson, Cargill, Environmental Health and Safety Supervisor
- Rodger Schmidt, Borsheim Crane Service, Safety Director
- Ashley Mund, North Dakota Workforce Safety & Insurance, Safety Consultant
- Matt Weis, Marsh McLennan Agency, Loss Control Manager
- Brady Scribner, City of Fargo, Emergency Manager*
- Joel Quanbeck, KLJ Engineering, Community Planner

ONLINE (NEIGHBORING COMMUNITIES MEETING)

- Amanda Johnson, Cass County, Assistant Emergency Manager*
- Pierre Freeman, City of West Fargo, Emergency Manager*
- Jim Prochniak, Cass County, Emergency Manager*
- Gabe Tweten, Clay County, Emergency Manager
- Ben Gates, Steele County and Trail County, Emergency Manager
- Joel Quanbeck, KLJ Engineering, Community Planner

FARGO (PUBLIC SAFETY BUILDING)

- Jason Dura, West Fargo Police Department, Commander*
- Cole Hansen, Cass County, Planner*
- Kyle Litchy, Cass County, Highway Department Assistant Engineer*
- Kristi Kanski, Red River Regional Dispatch, Assistant Director*
- Mathew Stamness, Cass County, Highway*
- Jake Anderson, City of West Fargo, IT Team Lead*
- Dennis Olsen, North Dakota Air National Guard, Emergency Management Specialist*
- Kristi Erickson, North Dakota Air National Guard, Emergency Manager*
- Jeremy Gorla, City of Fargo, Engineer*
- Jody Bertrand, City of Fargo, Engineer*
- Doug Murphy, Fargo Cass Public Health, Coordinator *
- Lori Miller, Fargo Cass Public Health, Representative*
- Hunter Hubris, Fargo Cass Public Health, Representative*
- Chad Mickelson, Sanford Ambulance, Director of Operations*
- Andrew Aakre, Moore Engineering, City of Harwood and City of Oxbow Engineer*
- Kurt Lysne, Moore Engineering, Cass County Water Resource Districts Representative*
- Bob Henderson, Cass County, IT Director*
- Nick Lindhog, City of Fargo, IT Department Chief Information Security Officer*
- Brady Scribner, City of Fargo, Emergency Manager*
- Marc Williams, City of Fargo, Planner*
- Dan Hanson, City of West Fargo, City Engineer*
- Aaron Nelson, City of West Fargo, Planner*
- Travis Genty, City of West Fargo, GIS Manager*
- Haider Howitzer, City of West Fargo, IT Manager*
- Jake Anderson, City of West Fargo, IT Team Lead*
- Kay Anderson, Cass County GIS Manager*
- Kendel Frost, West Fargo Fire Department, Fire Chief*

Community Participation and Feedback

One round of community input meetings were held for the public and community officials to provide input for this plan. At the meetings, participants identified critical facilities and key issues on maps. Community representatives took a jurisdictional survey to identify capabilities, gaps, hazard treats, and vulnerabilities while community members were asked to take the public survey to commented on the most significant hazard threats to their communities. Many new or affirmed mitigation actions resulted from the jurisdictional survey and public survey. Every community but Frontier and Hunter completed the jurisdictional survey. Key feedback from the jurisdictional surveys are listed below:

- Alice identified storms as their biggest hazard threat.
- Amenia returned the jurisdictional survey but did not provide specific comment.
- Agrusville considers overland flooding their biggest threat.
- Arthur considers natural weather and fire as their biggest threats.
- Ayr uses phone calls or texts to communicate with vulnerable groups in their community.
- Most of the homes that experienced repetitive loss due to flooding in Briarwood were bought out by the county.
- Briarwood identified their vulnerable populations as “unaware” residents during a hazard event.
- Buffalo has strong two-way communication with their residents, citing citizens are always welcome to share their voice via personal phone call with the city mayor and council members.
- As Casselton grows, the city would like to expand their ability to expand or improve existing mitigation capabilities by training more personnel and volunteer staff.
- Davenport typically communicates with their residents via monthly water bills and posting posters at the post office. The city believes their ability to expand and improve existing capabilities could improve.
- Fargo Emergency Manager and multiple city staff participated in the survey and completed input throughout the MHMP process, although no specific comments were written in the jurisdictional survey.
- Gardner utilizes a city Facebook page to share immediate information but identify elderly and children with no access to Facebook as a vulnerable population in their community.
- Grandin has been using a city Facebook page to communicate with residents. They are currently working on creating a city website as another form of outreach to their community.
- Harwood considers flooding and severe winter weather as their largest hazard threats.
- Horace has been growing fast and noted with more staffing, they could improve their mitigation capabilities.
- Kindred identified that they would like permanent backup generators placed addressed in this MHMP update.
- Leonard identified that power outages and sewer failures as their biggest hazard threats.
- Mapleton stated they use a wide variety of outreach methods to communicate with residents, including utilizing the newspaper, online platforms, and postings at City Hall and Post Office.
- North River said they would like to see their dike along the Red River certified as a mitigation action during this MHMP update.
- Oxbow believes their biggest hazard threat is severe winter and summer weather.
- Page identified severe winter weather and severe summer weather as their biggest hazard threats.
- Prairie Rose would like to address early warning sirens for tornados and an emergency broadcast system from the county to address their biggest hazard concern of tornadoes in this MHMP update.
- Reile’s Acres said that they do not have an emergency shelter, and they consider that to be a big vulnerability for their community.
- Tower City currently uses door knocking or phone calls to share information to vulnerable groups in their community.
- West Fargo identified their biggest hazard threats as high winds, hazmat spills, and violent persons.
- Cass County believes cyber threats, severe weather events that do not allow for advanced notice to residents, and active assailants as their biggest hazard threats.

Feedback from 211 public survey respondents has been summarized below, highlighting key insights from the most important questions:

Ranking of hazards by concern levels

- **Top Concerns**
  - Severe Winter Weather (Score: 9.56; Average Rank: 4.20)
  - Flood (Score: 9.30; Average Rank: 4.42)
  - Severe Summer Weather (Score: 8.35; Average Rank: 5.52)
- **Least Concerning**
  - Space Weather (Score: 2.57; Average Rank: 11.25)
  - Geological Hazards (Score: 3.36; Average Rank: 10.14)
  - Wildland Fire (Score: 3.92; Average Rank: 9.87)

Score – Sum of the weight of each ranked position, multiplied by the response count for the position choice, divided by the total contributions. Weights are inverse to rank positions.
Average rank – Sum of the rank position of the choice, multiplied by the response count for the position choice, divided by the total "Count" of the choice.

Perception of weather changes in the past five years

- **More frequent and intense:** 54.55%
- **No change:** 29.19%
- **Less frequent and intense:** 8.61%

If you do not have flood insurance, why not?

- Lot located in a floodplain: 53.13%, 85 respondents
- Located in a floodplain but insurance is not required (no mortgage/500-year floodplain): 12.50%, 20 respondents
- Not necessary because it never floods: 1.25%. 2 respondents
- Not necessary because my home is elevated or otherwise protected: 15.63%, 25 respondents
- Too expensive: 3.13%, 5 respondents
- Other: 14.38%, 23 respondents

What actions have you taken to make your home, family, or neighborhood safer from hazards?
Common actions:

- Installed smoke/CO2 detectors, sump pumps, fire extinguishers, and backup generators.
- Stockpiled food, water, medical supplies, and emergency kits.
- Implemented family emergency plans, evacuation plans, and evacuation routes.
- Improved property drainage, elevated homes, and regrated yards to reduce flood risk.
- Participating in preparedness training and signed up for Cass Clay Alerts.
- Maintained cybersecurity, added camera, and reinforced home security systems.

Notable contributions:

- Sandbagging during floods, advocating for city planning, and updating homes to modern safety codes.
- Collaboration with neighbors for mutual support and hazard preparedness.

Preferred methods of receiving hazard safety information:

- **Internet:** 58.74% (121 respondents)
- **Email:** 53.40% (110 respondents)
- **Social media:** 52.91% (109 respondents)
- **Television:** 38.83% (80 respondents)

- **Radio:** 31.07% (64 respondents)
- **Mail:** 34.95% (72 respondents)
- **Newspaper:** 20.39% (42 respondents)
- **Public workshops/meetings:** 7.77% (16 respondents)
- **School meetings:** 7.77% (16 respondents)
- **Other:** 5.34% (11 respondents)

Best method of community involvement in plan implementation/monitoring:

- **Online survey:** 42.72% (88 respondents)
- **Social media/community app updates:** 49.03% (101 respondents)
- **County website updates:** 37.38% (77 respondents)
- **In-person meetings:** 23.30% (44 respondents)
- **Virtual meetings:** 21.36% (44 respondents)
- **Mailers or billing enclosures:** 31.56% (65 respondents)

Most vulnerable locations in the community:

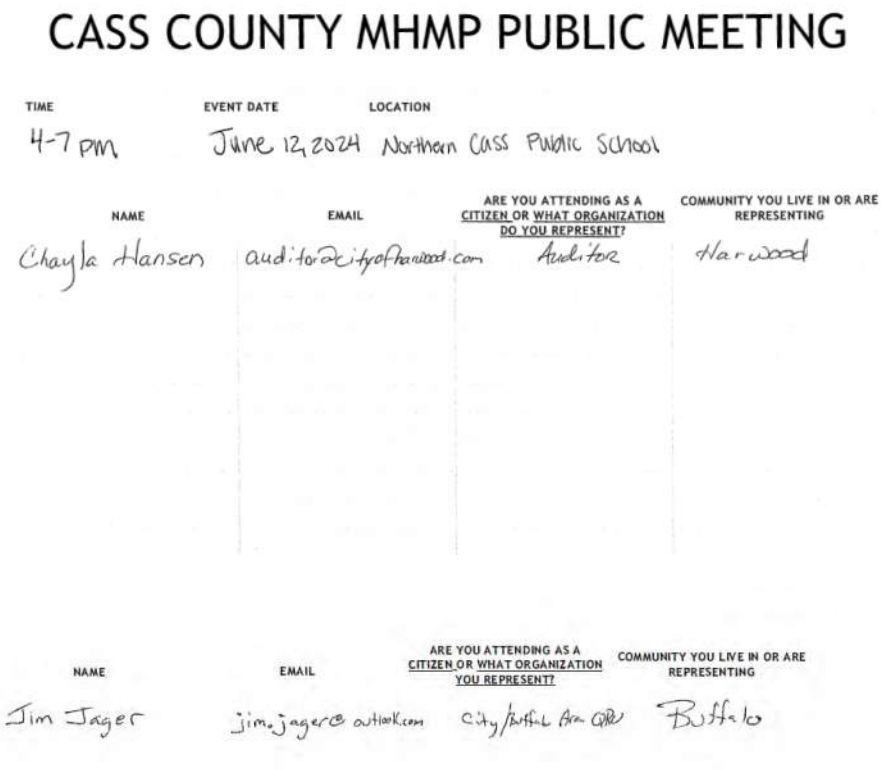
- **General areas:**
  - Floodplains, especially along the Red River and other waterways.
  - Low-income and high-density neighborhoods.
  - Rural and outlying areas with limited resources and response capabilities.
- **Critical infrastructure:**
  - Power grids, water treatment plants, and schools.
  - Hospitals, nursing homes, and large public gathering venues.
- **Social vulnerabilities:**
  - Vulnerable populations, such as the homeless, elderly, and disabled.
  - Areas lacking adequate planning, drainage, or modern infrastructure.
- **Hazard specific concerns:**
  - Cybersecurity threats to critical systems.
  - Potential impacts on density packed homes and urban areas.

CASS COUNTY MHMP PUBLIC MEETING

TIME	EVENT DATE	LOCATION
4-7 pm	June 6, 2024	Southern Valley Fire + Rescue - Horace

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION DO YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Albert Fahsinger	al_f@yahoo.com	Reed Township	Harwood, ND

Harwood's auditor, Chayla, is new to her role and commented at the public meeting she is open and wanting feedback and direction from county emergency managers to expand Harwood's existing capabilities to mitigate hazards.



CASS COUNTY MHMP PUBLIC MEETING

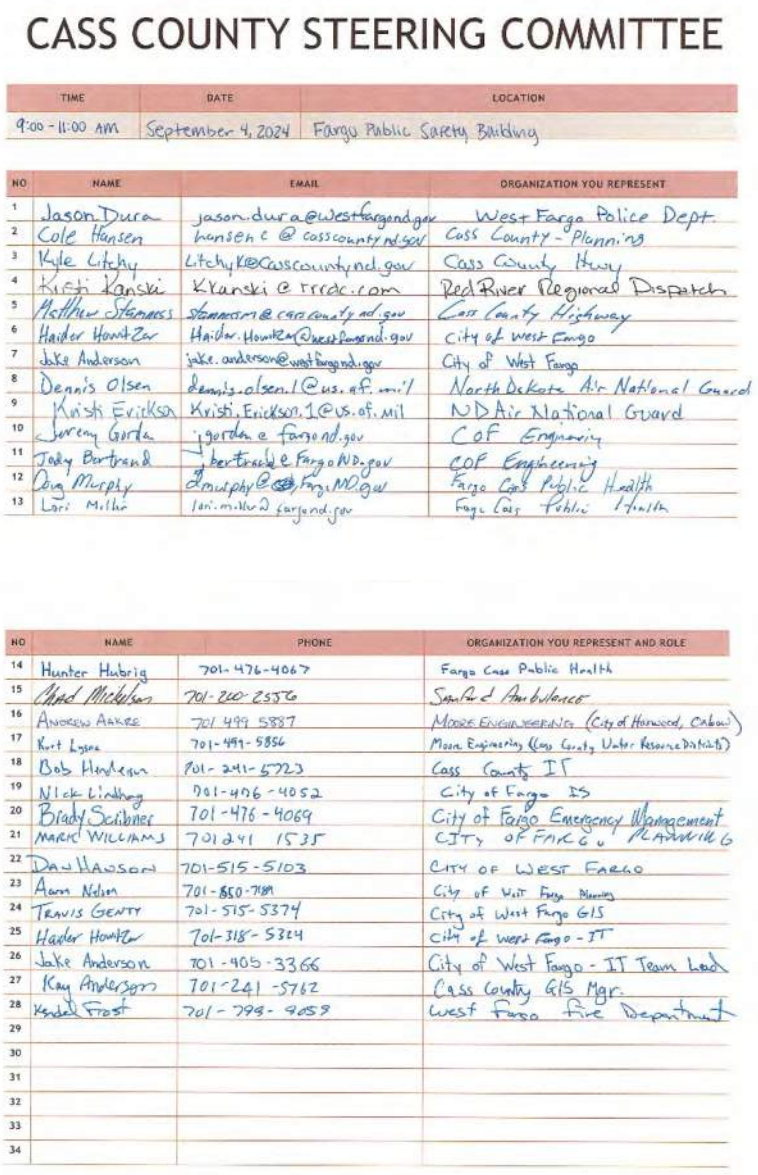
TIME	EVENT DATE	LOCATION
4-7 pm	June 12, 2024	Northern Cass Public School

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION DO YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Chayla Hansen	auditor@cityofharwood.com	Auditor	Harwood

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Jim Jager	jim.jager@outlook.com	City/Buffalo Area CDC	Buffalo

Steering Committee Meeting

This meeting highlighted several key concerns and mitigation strategies for rural and small communities in Cass County. Priority risks include blizzards, severe summer weather, severe winter weather, flooding, power loss, aging infrastructure, cyber vulnerabilities, and hazardous materials incidents. Vulnerable populations, especially in rural areas, often lack awareness and resources for preparedness. Critical mitigation actions include burying power lines, improving IT security and connectivity, and enhancing backup power systems for critical facilities like water towers and lift stations. Rural communities face challenges with funding, staffing, and FEMA compliance; these challenges require ongoing funding support, education on risks (e.g., cyber threats), and regional collaboration. Notable successes include updating stormwater models and flood mitigation efforts, though gaps remain in addressing long-duration events and infrastructure resilience.



CASS COUNTY STEERING COMMITTEE

TIME	DATE	LOCATION
9:00 - 11:00 AM	September 4, 2024	Fargo Public Safety Building

NO	NAME	EMAIL	ORGANIZATION YOU REPRESENT
1	Jason Dura	jason.dura@westfargond.gov	West Fargo Police Dept.
2	Cole Hansen	hansenc@casscountynd.gov	Cass County - Planning
3	Kyle Litchy	LitchyK@Casscountynd.gov	Cass County Hwy
4	Kristi Kanski	Kkanski@rrrdc.com	Red River Regional Dispatch
5	Matthew Steinwand	steinwam@casscountynd.gov	Cass County Highway
6	Haider Hountzer	Haider.Hountzer@westfargond.gov	City of West Fargo
7	Jake Anderson	jake.anderson@westfargond.gov	City of West Fargo
8	Dennis Olsen	dennis.olsen.1@us.af.mil	North Dakota Air National Guard
9	Kristi Erickson	Kristi.Erickson.1@us.af.mil	ND Air National Guard
10	Jeremy Gorden	jgorden@fargond.gov	COF Engineering
11	Jody Bertrand	jbertrand@FargoND.gov	COF Engineering
12	Doug Murphy	dmurphy@FargoND.gov	Fargo Cass Public Health
13	Lori Mitha	lori.mitha@fargond.gov	Fargo Cass Public Health

NO	NAME	PHONE	ORGANIZATION YOU REPRESENT AND ROLE
14	Hunter Hubrig	701-476-4067	Fargo Cass Public Health
15	Chad Michelson	701-200-2556	Sanford Ambulance
16	Andrew Aakre	701 499 5887	Moore Engineering (City of Harwood, Cabou)
17	Kurt Lysne	701-499-5856	Moore Engineering (Cass County, Water Resource District)
18	Bob Henderson	701-241-5723	Cass County IT
19	Nick Lindberg	701-476-4052	City of Fargo IS
20	Brady Scribner	701-476-4069	City of Fargo Emergency Management
21	Mark Williams	701 241 1535	City of Fargo Planning
22	Dan Hanson	701-515-5103	City of West Fargo
23	Aaron Nelson	701-850-7181	City of West Fargo Planning
24	Travis Gentry	701-515-5374	City of West Fargo GIS
25	Haider Hountzer	701-318-5324	City of West Fargo - IT
26	Jake Anderson	701-405-3366	City of West Fargo - IT Team Lead
27	Kay Anderson	701-241-5762	Cass County GIS Mgr.
28	Kendall Frost	701-799-9059	West Fargo Fire Department
29			
30			
31			
32			
33			
34			

Access and Functional Needs Meeting

Cass County Emergency Management, Fargo Emergency Management, West Fargo Emergency Management and NDDES conducted a Community Coffee (Access and Functional Needs Meeting) at the Fargo Main Library. The informative dialogue provided insights into the nexus of hazard events and people with access and functional needs. There were 25 participants in this dialogue. Key takeaways included:

- Challenges for Access and Functional Needs (AFN) Populations
    - Language Barriers – Limited multilingual alerts; Google Translate is insufficient
    - Vulnerable Populations – Poverty and basic needs issues worsen during disaster impacts
    - Preparedness Gaps – Families lack clear communication plans; warnings sometimes unclear or inaccessible
- Current Practices and Gaps
    - Training and Resources – Fargo CERT training is unavailable; staff shortages strain response efforts

  - Accessibility Needs – Hard-of-hearing individuals need visual alerts; heavy fire doors remain a challenge
  - Community Involvement – New Americans excel in disaster roles with instruction; children aid family preparedness
- Recommendations and Ideas
  - Expand multilingual alerts and translation services
  - Reinstate CERT or similar training programs
  - Build a database of community needs for targeted support
  - Simplify warnings for clarity and accountability
  - Involve all vulnerable populations in planning

CASS COUNTY COMMUNITY COFFEE

TIME	EVENT DATE	LOCATION
2-3 pm	June 24, 2024	Fargo Public Library (Downtown)

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION DO YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Jon Miller	jon.miller@fargond.gov	FEPH - EMR	Wahpeton
Doug Murphy	dmurphy@FargoND.gov	FCPH - EPR	Fargo
Molly Benedetto	mbenedetto@ywcacassclay.org	YWCA	Fargo
Lesley Dawson	LDawson@unitedwaycassclay.org	United Way Cass Clay	Fargo
Katie Leitch	Katieleitch@nd.gov	NDDES	Bismarck
Dennis Grocott	d.grocott@dakotaranch.org	Dakota Boys & Girls Ranch	Fargo
Valentina Asiedu	valentina.asiedu@globalrefuge.org	Global Refuge	Fargo
Jennifer Illich	jennifer@myfirstlink.org	Represent - FirstLink	Fargo - All VA
Rebecca Knutson	r/knutson@greatplainsfoodbank.org	Great Plains Food Bank	Fargo
Sylvanus Domah	Sylvanus.domah@clayco.gov	CCPH	Sylvanus.Domah@co.clay.mn.us
SUZANNE DELRUHILLIER	SUZANNE@FMAPP.IN.ORG	PRESENTATION PARTNERS IN HOUSING	FARGO

▪

CASS COUNTY COMMUNITY COFFEE

TIME	EVENT DATE	LOCATION
2-3 pm	June 24, 2024	Fargo Public Library (Downtown)

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION DO YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Quin Overland	overlandq@gmail.com	Citizen	Moorhead
Joel Quanbeck	joel.quanbeck@kljeng.com	KLJ	Fargo
Kris Baumann	kbaumann@fraserltd.org	Fraser	Fargo
Tammy DeSautel	tgdesautel@nd.gov	JTSND	Fargo
Stacie Evegenis	stacie@emergencyfoodpantry.com	Emergency Food Pantry	Fargo
Dan Hannahs	Dan.Hannahs@globalrefuge.org	Global Refuge	Fargo
Sarah Weisser	SarahW@freedomrc.org	Citizen Freedom Resource Center	Fargo
Allison Vetter	alvetter@nd.gov	NDDES	Bismarck
Greg Gust	ggust@nd.gov	NDDES	Grand Forks
Kathleen Comrie	Kcomrie@nd.gov	NDDES	Fargo
Shannan Stanke	Shannan.stanke@und.edu	NDBIN.org	Fargo
Khaled Makaraan	info@eshara.org		

CASS COUNTY MHMP COMMUNITY COFFEE

TIME: 2-3pm
EVENT DATE: June 24, 2024
LOCATION: Fargo Public Library (Downtown)

NAME	EMAIL	ARE YOU ATTENDING AS A CITIZEN OR WHAT ORGANIZATION DO YOU REPRESENT?	COMMUNITY YOU LIVE IN OR ARE REPRESENTING
Sudo Mohamed		a sharer	& New Americans

Local Businesses Meeting

The Northern Region Association of Safety Professionals (NRASP) is an organization dedicated to promoting workplace safety. During our meeting with the group, we explained the MHMP development process and encouraged them to share any hazard concerns relevant to their industries. One attendee noted that their organization prepares for targeted violence or protests due to potential misinformation. Members took our materials and survey link to share within their organizations. While we received no further feedback from the group, we remain hopeful that their colleagues contributed to our public survey responses.

NORTHERN REGION ASSOCIATION OF SAFETY PROFESSIONALS (NRASP) MEETING

TIME	EVENT DATE	LOCATION

NAME	EMAIL	ORGANIZATION YOU REPRESENT AND ROLE
Dale Larson	dale.larson@[redacted]ndabc.com	ABC MN/ND
Melissa Olheiser	melissa@oecscomply.com	OECS
Chas Anderson	Chas_anderson@cargill.com	Cargill
Rudger Schmidt	rudgers rschmidt@borsheimcrane.com	Borsheim Crane
Ashley Mund	amund@nsc.gov	WSI
Matt Weis	matt.weis@marshmma.com	MMA
Brady Scribner	bscribner@fargond.gov	The City of Fargo - Emergency Manager
Joel Quanbeck	joel.quanbeck@klgeng.com	

Neighboring Communities Meeting

A Teams Meeting was held between Cass County, Clay County, Steele County and Trail County emergency managers. Concerns, such as flooding, severe winter weather, windstorms, tornadoes, hazardous materials releases, cyber threats, and critical facilities issues were discussed. Regional collaboration capabilities were discussed, some of which include the regional dispatch center and jail facilities shared between Cass and Clay Counties. These shared capabilities emphasized the need to continue coordinated planning and mitigation. Some ongoing actions amongst the counties included dam projects and a unified school response plan. Interest in expanding regional partnerships and infrastructure was discussed, including utilizing electronic signs between counties and hardening critical infrastructure.



CASS COUNTY MHMP NEIGHBORING COMMUNITY MEETING

MEETING DATE	LOCATION
August 26, 2024	Microsoft Teams Meeting

NO	NAME	EMAIL	REPRESENTING
1	Amanda Johnson	JohnsonA@CassCountyND.gov	Cass County Emergency Management
2	Pierre Freeman	Pierre.Freeman@WestFargoND.gov	City of West Fargo Emergency Management
3	Jim Prochniak	ProchniakJ@CAssCountyND.gov	Cass County Emergency Management
4	Gabe Tweten	Gabe.Tweten@Co.Clay.MN.us	Clay County Emergency Management
5	Ben Gates	BGates@ND.gov	Trail and Steele County Emergency Management
6	Joel Quanbeck	Joel.Quanbeck@KLJEng.com	KLJ Engineering

Additional Project Consultations

A number of direct consultations with Planning Team members, regional agency or organization representatives, other key stakeholders and experts were used to supplement the input received from project meetings. People not participating directly in meetings who provided assistance included:

- Greg Gust, former NWS Meteorologist, extreme weather variability and climate change impacts
- Planning Team representatives from each community were emailed draft documents at the draft review stage to solicit comments on the draft plan.

Planning Team

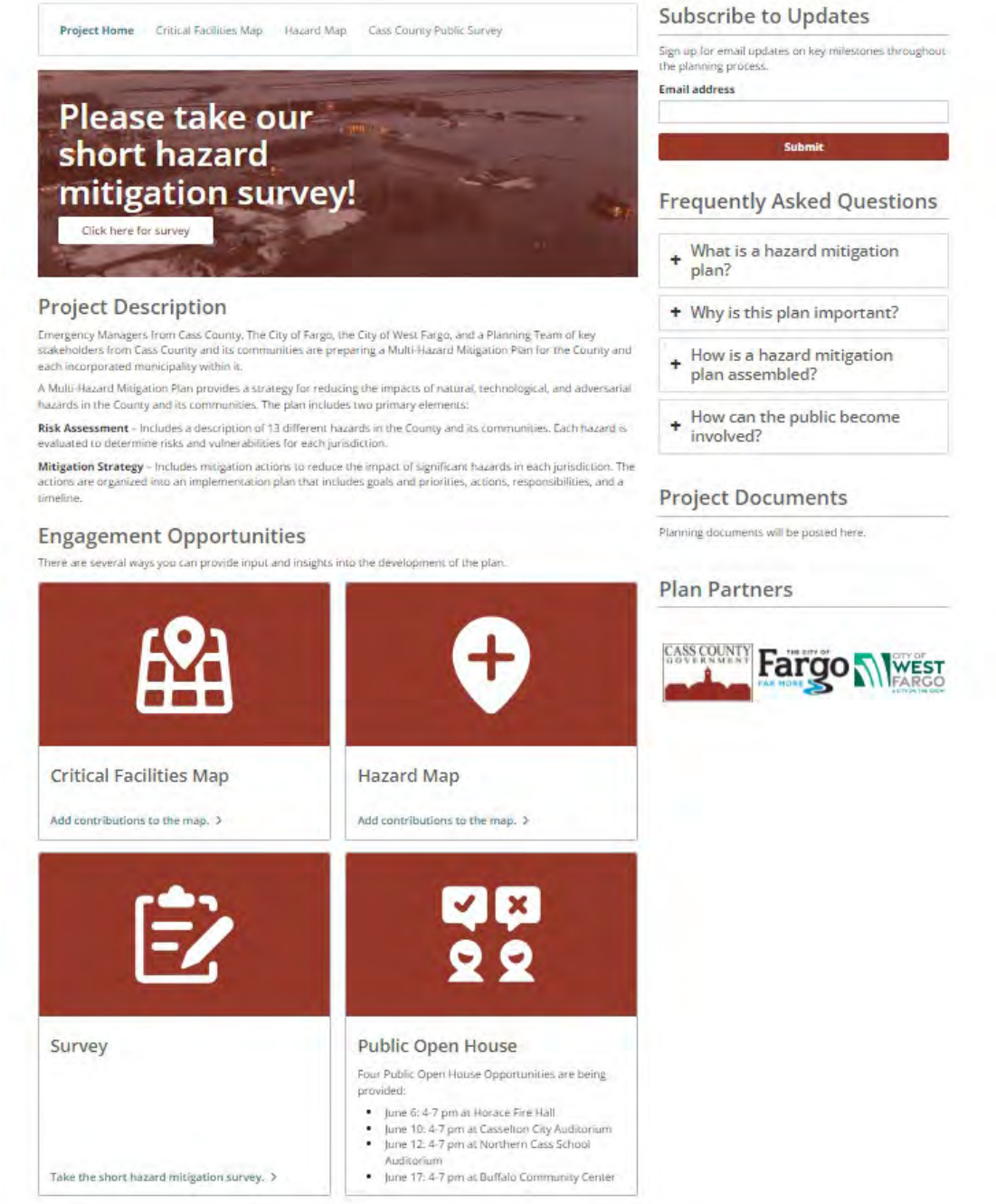
The Planning Team consisted of members of the Emergency Management Steering Committee and additional key representatives from each city in Cass County. Because of the difficulty of getting good attendance at community meetings), individual consultations with additional key stakeholders also occurred. The following table lists Planning Team members who participated in at least one meeting or a consultation.

Planning Team Members	Jurisdiction/ Organization
Jim Prochniak, Emergency Manager	Cass County
Amanda Johnson, Assistant Emergency Manager	Cass County
Brady Scribner, Emergency Management	City of Fargo
Pierre Freeman, Emergency Manager	City of West Fargo Fire
Dan Lund, Mayor	City of Alice
Tony Rother, Mayor	City of Amenia
Travis Winterquist, Auditor	City of Argusville
Natalie Keller, Auditor	City of Arthur
Diane Hovland, Auditor	City of Ayr
Michael Fritz, Auditor	City of Briarwood
Jim Jager, Mayor	City of Buffalo
Harmony Richman, Auditor	City of Buffalo
Kevin Mayer, Public Works Director	City of Casselton
Mark Roster, Auditor	City of Davenport
Jason Lotzer, Mayor	City of Davenport
Jeremy Fordon, City Engineer	City of Fargo
Jody Bertrand. City Engineer	City of Fargo
Nick Lindhog, IT Department Chief Information Security Officer	City of Fargo
Mark Williams, Planner	City of Fargo
Shannon Kalash, Auditor	City of Gardner
Tracy Dahl, Auditor	City of Grandin
Chayla Hanson, Auditor	City of Harwood
Andrew Aakre, City Engineer	City of Harwood
Jace Hellman, Community Development Director	City of Horace
Rich Schock, Public Works Superintendent	City of Kindred
Tabitha Arnaud, Auditor	City of Kindred
Trina Nudell, Auditor	City of Leonard
Michelle Kalvoda-Baumann, Auditor	City of Mapleton

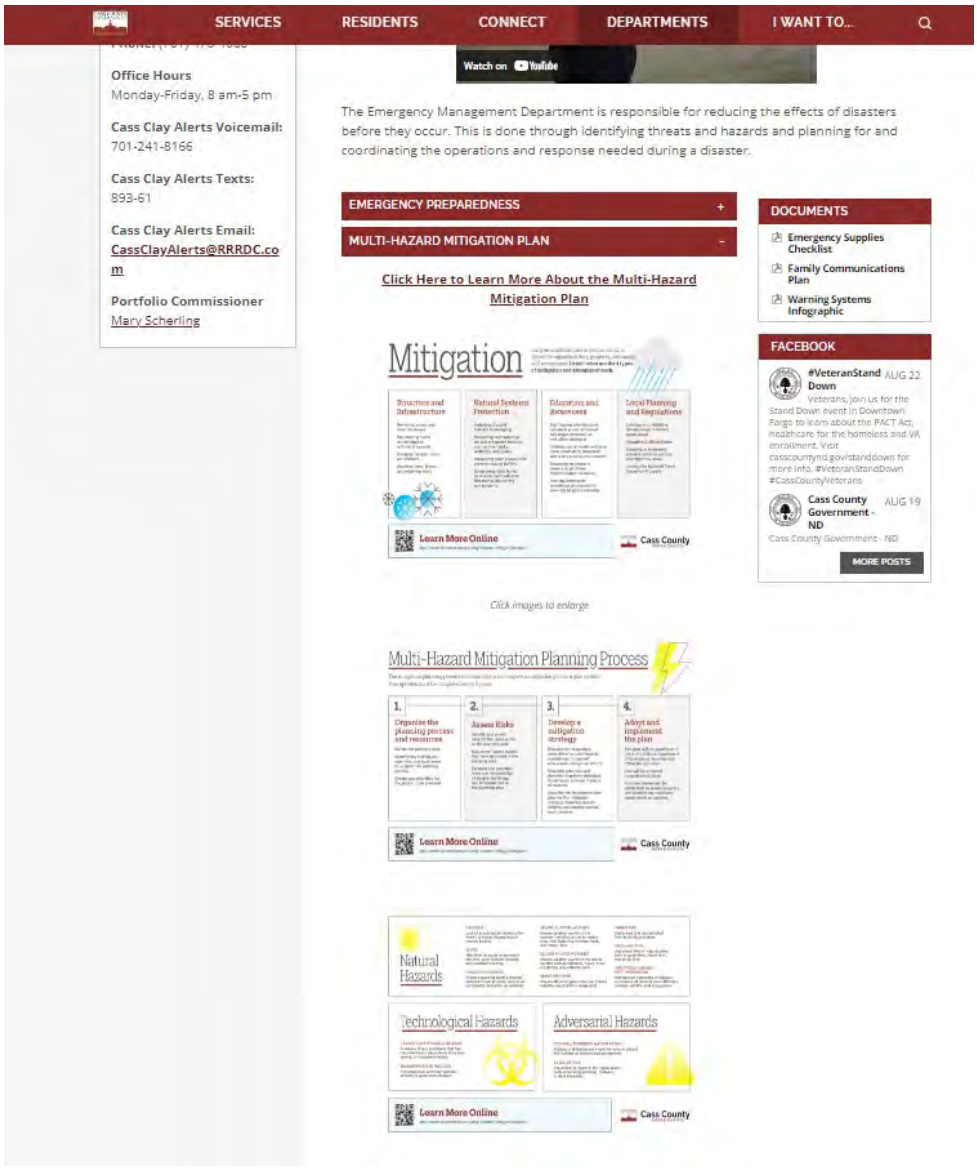
Casey Eggermont, Auditor	City of North River
Andrew Aakre, City Engineer	City of Oxbow
Judy Johnson, Auditor	City of Page
Bob Staloch, Auditor	City of Prairie Rose
Andrew Kasel, Mayor	City of Tower City
Aaron Nelson, Planner	City of West Fargo
Dan Hanson, City Engineer	City of West Fargo
Haider Howitzer, IT Manager	City of West Fargo
Jake Anderson, IT Team Lead	City of West Fargo
Jason Dura, Police Department	City of West Fargo
Kay Anderson, GIS Manager	City of West Fargo
Kendal Frost, Fire Department Fire Chief	City of West Fargo
Travis Genty, GIS Manager	City of West Fargo
Bob Henderson, IT Manager	Cass County
Cole Hanson, Planner	Cass County
Kyle Litchy, Highway Department Assistant Engineer	Cass County
Mathew Stamness, Highway Department Assistant Engineer	Cass County
Kurt Lysne, representative	Cass County Water Resource District
Doug Murphy, Coordinator	Fargo Cass Public Health
Hunter Hubrig, representative	Fargo Cass Public Health
Lori Miller, representative	Fargo Cass Public Health
Dennis Olson, Emergency Management Specialist	North Dakota Air National Guard
Kristi Erickson, Emergency Manager	North Dakota Air National Guard
Kristi Kanski, Assistant Director	Red River Regional Dispatch
Chad Mickelson, Director of Operations	Sanford Ambulance

Publicity

The project and project meetings were publicized by ads, posters, notices on county and project websites, email blasts, and phone calls. Additionally, community representatives and key stakeholders were invited by phone call or email to participate in the meetings. The draft document was also posted to the project website for review and comment. The following images illustrate some of these publicity tools.



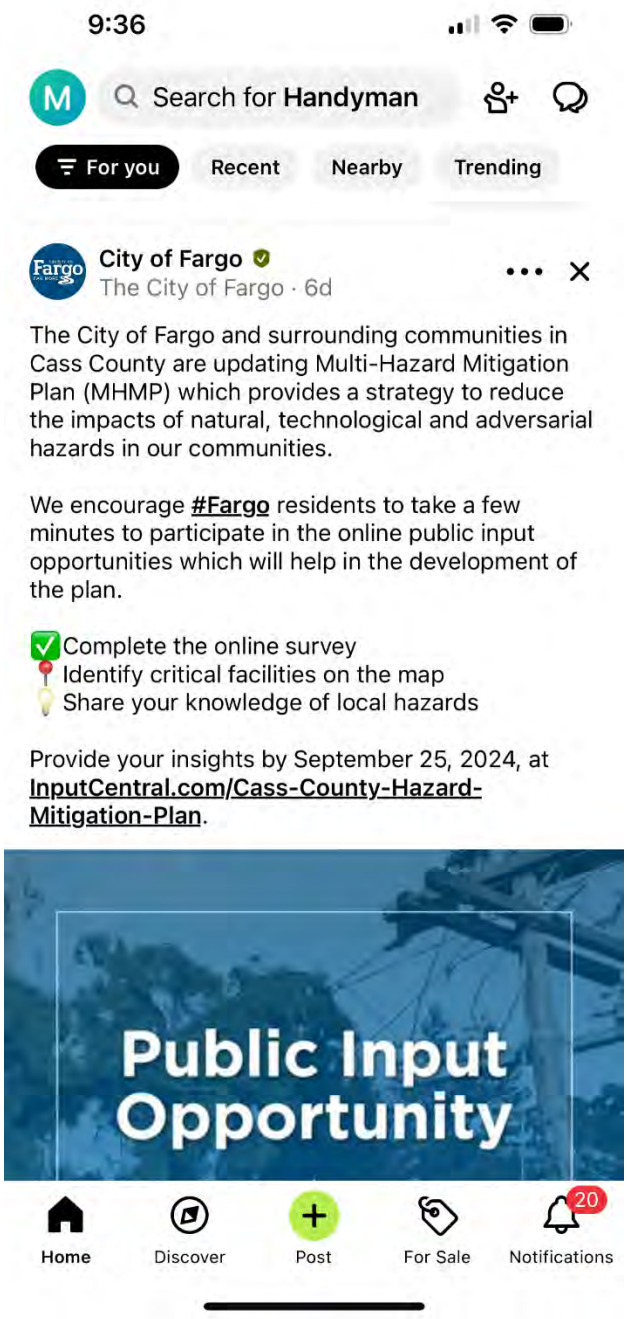

Cass County Multi-Hazard Mitigation Plan
Public Engagement Meeting
Cass County is updating their
Multi-Hazard Mitigation Plan
This plan will describe actions the County and its jurisdictions will take to reduce disaster impacts on lives and property.
The County is seeking public input at four meetings
where the public can share concerns over hazards and their impacts.
This meeting will be an open house format.
Feel free to stop in at any time to view information and share your thoughts.
Horace Fire Hall
413 Main St, Horace, ND 58047
Thursday June 6th
4-7pm
Casselton City Auditorium
702 1st St N, Casselton, ND 58012
Monday June 10th
4-7pm
Northern Cass School Auditorium
16021 18th St SE, Hunter, ND 58048
Wednesday June 12th
4-7pm
Buffalo Community Center
409 Main St, Buffalo, ND 58011
Monday June 17th
4-7pm
Learn More Online
inputcentral.com/cass-county-hazard-mitigation-plan
Cass County
NORTH DAKOTA


SERVICES
RESIDENTS
CONNECT
DEPARTMENTS
I WANT TO...
Office Hours
Monday-Friday, 8 am-5 pm
Cass Clay Alerts Voicemail:
701-241-8166
Cass Clay Alerts Texts:
893-61
Cass Clay Alerts Email:
CassClayAlerts@RRRDC.com
Portfolio Commissioner
Mary Scherling
Watch on YouTube
The Emergency Management Department is responsible for reducing the effects of disasters before they occur. This is done through identifying threats and hazards and planning for and coordinating the operations and response needed during a disaster.
EMERGENCY PREPAREDNESS +
MULTI-HAZARD MITIGATION PLAN -
Click Here to Learn More About the Multi-Hazard Mitigation Plan
Mitigation
Learn More Online
Cass County
Click images to enlarge
Multi-Hazard Mitigation Planning Process
Learn More Online
Cass County
Natural Hazards
Technological Hazards
Adversarial Hazards
Learn More Online
Cass County
DOCUMENTS
Emergency Supplies Checklist
Family Communications Plan
Warning Systems Infographic
FACEBOOK
#VeteranStand Down AUG 22
Veterans, join us for the Stand Down event in Downtown Fargo to learn about the PACT Act, healthcare for the homeless and VA enrollment. Visit casscountynd.gov/standdown for more info. #VeteranStandDown #CassCountyVeterans
Cass County Government - ND AUG 19
Cass County Government - ND
MORE POSTS


Mitigation
Long term actions take to reduce, avoid, or eliminate impacts to lives, property, livelihoods, and ecosystems. Listed below are the 4 types of mitigation and examples of each.
Structure and Infrastructure
Removing structures from floodways
Engineering roads and bridges to withstand hazards
Designating safe rooms and shelters
Building dams, levees, and retaining walls
Natural Systems Protection
Installing drought tolerant landscaping
Protecting and restoring natural mitigation features, such as riverbanks, wetlands, and dunes
Preserving open spaces that serve as natural buffers
Using prescribed burns to reduce fuel loads that threaten public safety and property
Education and Awareness
Distributing informational materials about individual and organizational risk reduction strategies
Utilizing social media and local news channels to broadcast alerts and educational content
Encouraging property owners to purchase hazard related insurance
Hosting community workshops and events to promote hazard awareness
Local Planning and Regulations
Limiting or prohibiting development in hazard prone areas
Adopting Building Codes
Creating or increasing setback limits on parcels near high risk areas
Joining the National Flood Insurance Program
Learn More Online
inputcentral.com/cass-county-hazard-mitigation-plan
Cass County
NORTH DAKOTA


Multi-Hazard Mitigation Planning Process
The mitigation planning process includes 4 steps to complete a mitigation plan or a plan update.
Plan updates must be completed every 5 years.
1.
Organize the planning process and resources
Define the planning area
Identify key individuals, agencies, and businesses to support the planning process
Create opportunities for the public to be involved
2.
Assess Risks
Identify and profile hazards that pose a risk to the planning area
Document hazard events that have occurred in the planning area
Estimate the potential loses and vulnerability of people, buildings, and infrastructure in the planning area
3.
Develop a mitigation strategy
Evaluate the regulatory, administrative, and financial capabilities to support and sustain mitigation efforts
Establish priorities and develop long-term strategies to minimize adverse impacts of hazards
Describe the implementation plan for the mitigation strategy, detailing specific actions, responsible parties, and timelines
4.
Adopt and implement the plan
The plan will be submitted to the North Dakota Department of Emergency Services and FEMA for approval
Plan will be adopted by each jurisdiction
Routine reviews will be conducted to assess progress and identify any necessary adjustments or updates
Learn More Online
inputcentral.com/cass-county-hazard-mitigation-plan
Cass County
NORTH DAKOTA


Natural Hazards
DROUGHT
Lack of precipitation lasting a few weeks or longer depending on outside factors.
FLOOD
The influx of water on normally dry land, such as flash flooding and overland flooding.
GEOLOGIC HAZARDS
Events caused by Earth's internal movement and process, such as an earthquake, landslide, or sinkhole.
SEVERE SUMMER WEATHER
Intense weather events in the summer months such as tornados, wind, hail, lightning, extreme heat, and heavy rains.
SEVERE WINTER WEATHER
Intense weather events in the winter months such as blizzards, heavy snow, ice storms, and extreme cold.
SPACE WEATHER
Any condition in space that can impact satellites and Earth's energy grid.
URBAN FIRE
Unplanned and uncontrolled fires in developed areas.
WILDLAND FIRE
Unplanned fires in natural areas such as grass fires, forest fires, and scrub fires.
INFECTIOUS DISEASE/ PEST INFESTATION
Widespread outbreaks of diseases or invasion of harmful pests affecting humans, wildlife, and ecosystems.
Technological Hazards
HAZARDOUS MATERIALS RELEASE
A release of any substance that has the potential to cause harm to human, animal, or ecosystem health.
TRANSPORTATION INCIDENT
Any largescale vehicular, railroad, aircraft, or watercraft incident.
Adversarial Hazards
CRIMINAL/TERRORIST NATION ATTACK
Attacks or disturbances meant to harm or disrupt the routines of citizens and government.
CYBER ATTACK
The attack or hijack in the digital realm such as hacking, phishing, malware, or data breaches.
Learn More Online
inputcentral.com/cass-county-hazard-mitigation-plan
Cass County
NORTH DAKOTA



City of Fargo posted the website and survey link to the app NextDoor to help facilitate public input.

INFORUM

Public meetings to discuss Cass County hazard mitigation plan announced

The plan addresses threats such as natural disasters, technological hazards including dam failures and hazmat spills, and cyber and terrorist attacks.



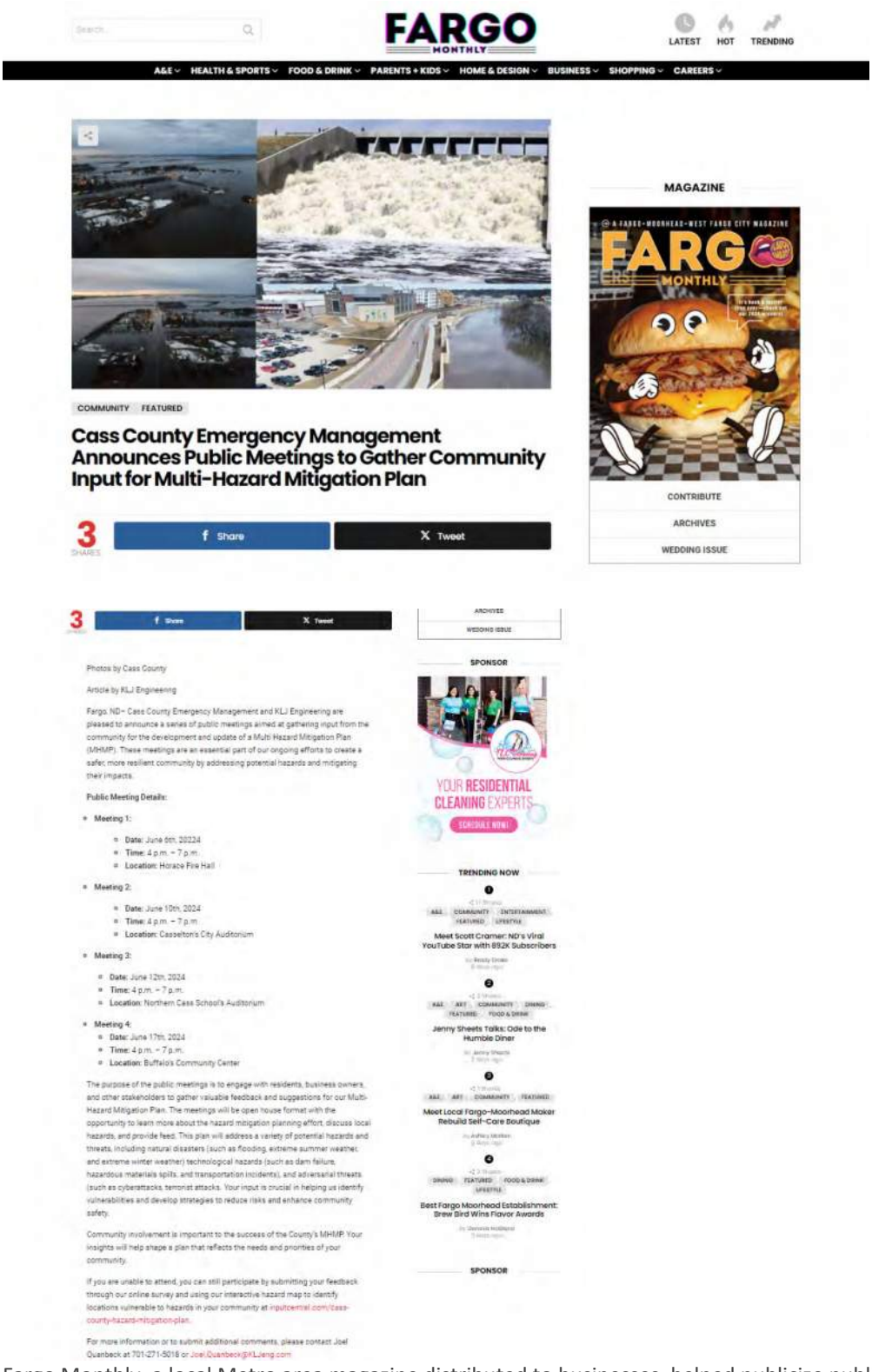
By Forum staff
June 04, 2024 at 5:35 PM

Comments Share News reporting

FARGO — Cass County Emergency Management and KLJ Engineering have announced a series of public meetings aimed at gathering input from the community for the development and update of the county's Multi Hazard Mitigation Plan (MHMP).

The MHMP addresses potential hazards and threats, such as natural disasters like flooding and extreme weather, technological hazards including dam failure, hazardous materials spills, and transportation incidents, and adversarial threats such as cyber and

Fargo Inforum posted public meeting dates in an article posted online.



Fargo Monthly, a local Metro area magazine distributed to businesses, helped publicize public meetings.

Reviewed Documents & Sources

Documents and other sources reviewed and incorporated into this plan include:

- 2019 Cass County Multi-Hazard Mitigation Plan. (n.d.-a). https://www.casscountynd.gov/Home/ShowDocument?id=6094 for hazard information
- 2024 North Dakota Enhanced Mitigation Mission Area Operations Plan. (n.d.-b). https://www.des.nd.gov/sites/www/files/documents/reports-plans/2024_HazardMitigation_ProgressReport.pdf for hazard information and histories
- *Amenia levee*. Cityofamenia. (n.d.). https://www.ameniand.com/projects-6 for flooding vulnerabilities and risk
- Analysis of the January 2023 Freezing Fog Episodes in North Dakota (undated PowerPoint Presentation; Adnan Akyuz, ND State Climatologist) for information on Freezing Fog event
- *BlueVoyant report reveals biotech and pharmaceutical industry under...* BlueVoyant. (n.d.). https://www.bluevoyant.com/press-releases/bluevoyant-report-reveals-biotech-and-pharmaceutical-industry-under-attack for cyberattack history
- Bureau, U. S. C. (n.d.). Explore census data. https://data.census.gov/table/ACSDT1Y2023.B08016?t=Commuting&g=050XX00US38017 for population data
- Cass County, North Dakota. (n.d.-a). https://www.swc.nd.gov/info_edu/reports_and_publications/county_groundwater_studies/pdfs/Cass_Part_I.pdf
- City of Fargo's Modular Vehicle Barrier to Protect Soft Targets & Crowded Spaces grant application for the Criminal/Terrorist attack hazard profile
- City of Fargo's Operations Vehicle to Support First Responders of the RRBUASU grant application for the Criminal/Terrorist attack hazard profile
- City of Fargo's Real-time Intelligence Monitoring and Information Sharing grant application for the Criminal/Terrorist attack hazard profile
- City of West Fargo. (2024, September 3). *City of West Fargo Commission Meeting - Tuesday, September 3, 2024*. YouTube. https://www.youtube.com/watch?v=jc4pkLQN01Y for riverbank slumping information) for geological hazard profile
- Department of Homeland Security's "Mass Gathering Security Awareness for Soft Targets and Crowded Place" for criminal/national terrorist attacks mitigation actions and hazard profile Mass Gatherings: Security Awareness for Soft Targets and Crowded Places (cisa.gov) for criminal/terrorist attack hazard profile
- Environmental Protection Agency. (n.d.). EPA. https://www.epa.gov/climate-indicators for climate change information
- *Extreme heat*. Extreme Heat | Ready.gov. (n.d.). https://www.ready.gov/heat for severe summer weather profile
- Falat, B. (2023, December 27). *Hundreds of power poles break during recent Ice storm*. https://www.valleynewslive.com. https://www.valleynewslive.com/2023/12/27/hundreds-power-poles-break-during-recent-ice-storm/ for severe winter weather history
- *Fargo series*. Official Series Description - FARGO Series. (n.d.). https://soilseries.sc.egov.usda.gov/OSD_Docs/F/FARGO.html#:~:text=The%20Fargo%20series%20consists%20of,from%200%20to%202%20percent for the geological hazard profile
- Federal Emergency Management Agency (FEMA). (n.d.). Resilience analysis planning tool. Retrieved from https://www.fema.gov/about/reports-and-data/resilience-analysis-planning-tool for critical facilities
- *FeedList, hay hotline connect livestock feed buyers, sellers*. Plone site. (n.d.). https://www.ag.ndsu.edu/news/newsreleases/2021/july-12-2021/feedlist-hay-hotline-connect-livestock-feed-buyers-sellers for the drought hazard profile
- *Information by region - North Dakota*. Information by Region - North Dakota | U.S. Geological Survey. (n.d.). https://www.usgs.gov/programs/earthquake-hazards/science/information-region-north-dakota for the geological hazards profile
- Gretchen Hjelmstad and Valley News Live - Staff. (2023, March 16). *Court docs: Trial cancelled for semi driver charged with negligent homicide in fiery crash*. https://www.valleynewslive.com for transportation incident history
- https://www.valleynewslive.com/2023/03/15/semi-crash-fire-prompts-i-94-closure-between-casselton-mapleton/

- Filters for embankment dams - FEMA. (n.d.-b). https://www.fema.gov/sites/default/files/2020-08/fema_dam-safety_risk-management_P-1025.pdf for transportation incident history
- Gretchen Hjelmstad and Valley News Live - Staff. (2023, March 16). *Court docs: Trial cancelled for semi driver charged with negligent homicide in fiery crash*. https://www.valleynewslive.com. https://www.valleynewslive.com/2023/03/15/semi-crash-fire-prompts-i-94-closure-between-casselton-mapleton/ for transportation incident history
- Guidance on extreme temperatures for state, local, tribal, ... (n.d.-c). https://www.fema.gov/sites/default/files/documents/fema_guidance-extreme-temperatures-state-local-tribal-territorial-leaders.pdf for severe summer weather profile
- Hail size as related to objects (storm prediction center). (n.d.-a). https://www.spc.noaa.gov/misc/tables/hailsize.htm for severe summer weather profile
- InForum. (2019, March 26). *Flood of 2009 forced mass evacuation of vulnerable populations*. InForum. https://www.inforum.com/newsmd/flood-of-2009-forced-mass-evacuation-of-vulnerable-populations for flooding history
- Kunkel, K. E. (1970, January 1). *State climate summaries 2022*. North Dakota - State Climate Summaries 2022. https://statesummaries.ncics.org/chapter/nd/ for climate change information
- Larson, C. (2023, December 26). *Freezing Rain, ice storm leading to regional power outages*. The Flag - AM 1100 and FM 92.3 WZFG. https://www.am1100theflag.com/news/regional-news/71367-freezing-rain-ice-storm-leading-to-regional-power-outages/ for severe winter weather history
- Login. (n.d.). https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fnfipservices.floodsmart.gov%2Fsites%2Fdefault%2Ffiles%2Fnfip_policy-information-by-state_20240630.xlsx&wdOrigin=BROWSELINK for NFIP information
- Maday, K. (2023, August 24). *Back to school immunization numbers declining*. https://www.valleynewslive.com. https://www.valleynewslive.com/2023/08/24/back-school-immunization-numbers-declining/ for infectious disease hazard profile
- N0D DWR Dams Database for dam information for dam failure hazard profile information
- National Climatic Data Center Storm Events Database for historical weather events data
- *National Drought Mitigation Center (NDMC)*. Drought.gov. (n.d.-a). https://www.drought.gov/about/partners/national-drought-mitigation-center-ndmc for drought hazard profile
- National Inventory of Dams. (n.d.). https://nid.sec.usace.army.mil/ for dam failure hazard profile
- Ncei. (n.d.). *Storm events database*. National Centers for Environmental Information. https://www.ncdc.noaa.gov/stormevents/ for historical hazard event histories
- NCEI.Monitoring.Info@noaa.gov. (n.d.). *Regional snowfall index (RSI)*. Regional Snowfall Index (RSI) | National Centers for Environmental Information (NCEI). https://www.ncei.noaa.gov/access/monitoring/rsi/
- ND Risk Assessment Map Service for flood risk information
- NDAWN station: Fargo, ND. (n.d.-d). https://ndawn.ndsu.nodak.edu/station-info.html?station=23
- *Neighborhood River Monitoring Groups*. Neighborhood River Monitoring Groups | West Fargo, ND. (n.d.). https://www.westfargond.gov/1045/Neighborhood-River-Monitoring-Groups for flood hazard profile
- Nelson, T. (2024, January 2). *Cass County Commissioners declare an emergency for costs from ice storm*. KVRR Local News. https://www.kvrr.com/2024/01/02/cass-county-commissioners-declare-an-emergency-for-costs-from-ice-storm/ for severe winter weather histories
- *NFIP Community status book - V1*. NFIP Community Status Book - v1 | FEMA.gov. (n.d.). https://www.fema.gov/openfema-data-page/nfip-community-status-book-v1#:~:text=The%20NFIP%20Community%20Status%20Book%20dataset%20contains%20the,insurance%20as%20well%20as%20qualify%20for%20disaster%20assistance for NFIP information
- *NOAA Space Weather Scales*. NOAA Space Weather Scales | NOAA / NWS Space Weather Prediction Center. (n.d.). https://www.swpc.noaa.gov/noaa-scales-explanation for space weather hazard information
- North Dakota Department of Public Instruction. (n.d.). Data. Retrieved from https://www.nd.gov/dpi/ for public schools and attendance numbers

- North Dakota response to the 1997 disasters. (n.d.-e). https://www.fema.gov/pdf/hazard/archive/grandforks/report.pdf for flood histoires
- Noxious weed identification | Cass County, ND. (n.d.-f). https://www.casscountynd.gov/our-county/weed-control/noxious-weed-identification for infectious disease and pest infestation hazard profile
- On the probability of occurrence of extreme space weather events - riley - 2012 - space weather - wiley online library. (n.d.-g). https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2011SW000734 for space weather hazard profile
- Person. (2022, December 6). *The spread of the emerald ash borer*. ArcGIS StoryMaps. https://storymaps.arcgis.com/stories/5010d73aae714807836f0a61189dc1c3 for infectious disease and pest infestation hazard profile
- Pinnon, M. V. (2021, September 27). *Updated with names: Two men die, others seriously injured in head-on crash in I-29 construction zone south of Fargo*. InForum. https://www.inforum.com/newsmd/updated-with-names-two-men-die-others-seriously-injured-in-head-on-crash-in-i-29-construction-zone-south-of-fargo for transportation incident history
- *Planetary K-index*. Planetary K-index | NOAA / NWS Space Weather Prediction Center. (n.d.). https://www.swpc.noaa.gov/products/planetary-k-index#:~:text=The%20K%2Dindex%20quantifies%20disturbances,during%20a%20three%2Dhour%20interval for space weather hazard profile
- Red River of the north at Fargo. (n.d.). https://water.noaa.gov/gauges/FGON8 for flood hazard profile
- *Sheyenne diversion*. Sheyenne Diversion | West Fargo, ND. (n.d.). https://www.westfargond.gov/270/Sheyenne-Diversion for flood hazard profile
- Springer, P. (2022, November 30). *5 years after N.D. oil train derailment, some changes made, others opposed*. Twin Cities. https://www.twincities.com/2018/12/29/5-years-after-n-d-oil-train-derailment-some-changes-made-others-opposed/ for hazardous release history
- St. Louis Federal Reserve. (n.d.). cp38017.pdf for mean commute times
- Staff (2025, January 5). *Blaze involving semi hauling 41,000 pounds of pork closes portion of I-29 northbound overnight*. InForum. https://www.inforum.com/news/north-dakota/semi-truck-trailer-blaze-closes-interstate-29-northbound-for-3-hours-overnight for transportation history
- *Statistics*. North Dakota Fire Marshal. (n.d.). https://www.firemarshal.nd.gov/communications/statistics for wildfire hazard profile
- *Study: Hackers attack every 39 seconds*. Study: Hackers Attack Every 39 Seconds | A. James Clark School of Engineering, University of Maryland. (n.d.). https://eng.umd.edu/news/story/study-hackers-attack-every-39-seconds for cyberattack hazard profile
- *Swelling clays map of the conterminous United States*. Swelling clays map of the conterminous United States | U.S. Geological Survey. (n.d.). https://www.usgs.gov/maps/swelling-clays-map-conterminous-united-states for geological hazard profile
- *The national risk index*. FEMA.gov. (n.d.). https://hazards.fema.gov/nri/ for natural hazard probability
- *Types of sinkholes*. Helicon. (2024, June 11). https://heliconusa.com/types-of-sinkholes/ for geological hazard profile
- *U.S. Drought Monitor (USDM)*. Drought.gov. (n.d.-b). https://www.drought.gov/data-maps-tools/us-drought-monitor for drought hazard profile
- U.S. Forest Service. (n.d.). Climate Change. Retrieved from https://www.fs.usda.gov/science-technology/climate-change for climate change information for climate change impact to wildland fires
- US Census Bureau. 2000, 2010, 2020 Decennial Censuses, 2017-2023 ACS for demographic data
- US Department of Commerce, N. (2015, July 15). *Heat Index Chart*. National Weather Service. https://www.weather.gov/ffc/hichart for severe summer hazard profile
- US Department of Commerce, N. (2016a, September 2). *Beaufort wind scale*. National Weather Service. https://www.weather.gov/mfl/beaufort for severe summer hazard profile

- US Department of Commerce, N. (2024a, January 31). *The Enhanced Fujita Scale (EF scale)*. National Weather Service. https://www.weather.gov/oun/efscale for severe summer weather profile
- US Department of Commerce, N. (2024b, May 25). *Flash flooding definition*. National Weather Service. https://www.weather.gov/phi/FlashFloodingDefinition for flood hazard profile
- US Department of Commerce, N. (2024c, October 3). *Wind Chill*. National Weather Service. https://www.weather.gov/gjt/windchill for severe winter hazard profile
- US Drought Monitor. 2000-2024 Historical drought data
- *USGS flood information*. USGS Flood Information | U.S. Geological Survey. (n.d.). https://www.usgs.gov/mission-areas/water-resources/science/usgs-flood-information for drought hazard profile
- What climate change means for North Dakota. (n.d.-i). https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-nd.pdf for climate change information

Appendix C: Additional Hazard Information

Storm Events Database

This section contains storm events from the NOAA National Climatic Data Center Storm Events Database. The criteria for each event type to qualify for inclusion to the database are:

- **Blizzard:** Sustained winds of 35 MPH or greater, snow reducing visibility to less than ¼ mile and lasting at least three hours.
- **Cold/Wind Chill:** Wind chill reaching -35 degrees F or lower.
- **Flash Flood:** Rapid and extreme flow of high water above pre-determined flood levels, beginning within six hours of the causative event.
- **Drought:** Deficiency of moisture resulting in a D2 classification or higher as indicated in the multi-agency Drought Monitor.
- **Flood:** Any high flow, overflow or inundation by water that causes or threatens damage, generally occurring more than six hours after the causative event.
- **Funnel Cloud:** A rotating, visible, extension of a cloud pendant from a convective cloud with circulation not reaching the ground.
- **Hail:** Hail of at least ¾ inch diameter, or hail less than ¾ inch diameter that causes injuries or fatalities.
- **Heavy Rain:** Unusually large amount of rain which does not cause a flash flood or flood, but causes damage, e.g., roof collapse or other human/economic impact. Urban ponding events would generally be classified as heavy rain.
- **Heat:** A period of heat resulting from high temperatures and relative humidity as determined by locally-established thresholds.
- **Heavy Snow:** Snow accumulation exceeding locally defined 12 and/or 24-hour criteria. Could include snow events of 6, 8 or 10 inches in 24 hours or less depending on typical regional snowfall.
- **High/Strong/Thunderstorm Wind:** Sustained winds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph for any duration.
- **Ice Storm:** Ice accretion of ¼ or ½ inch or more (varies depending on local jurisdiction defining criteria).
- **Lightning:** Sudden electrical discharge from a storm resulting in a fatality, injury or property damage.
- **Tornado:** A funnel cloud that makes contact with the ground and creates ground-based visual effects such as dust/dirt or other disturbance.
- **Wildfire:** Wildfire that causes one or more fatalities or injuries, and/or property damage.
- **Winter Storm:** A winter weather event that has more than one significant hazard (i.e. heavy snow and blowing snow; snow and ice; snow and sleet; sleet and ice; or snow, sleet and ice). A winter storm would normally pose a threat to life and property.
- **Winter Weather:** Winter precipitation event that causes a death, injury or significant economic impact.

Note that in most instances property and crop damage was not included with storm reports in the counties.

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
CASS (ZONE)	1/17/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/17/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/1/1996	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/1/1996	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/10/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/10/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/22/1996	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/22/1996	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/26/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/27/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/23/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/23/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/10/1996	Flood		0	0	$0.00	$0.00
CASS (ZONE)	4/10/1996	Flood		0	0	$0.00	$0.00
CASS (ZONE)	4/10/1996	Flood		0	0	$0.00	$0.00
FARGO	5/17/1996	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	5/17/1996	Flash Flood		0	0	$100,000.00	$0.00
GARDNER	6/5/1996	Tornado		0	0	$0.00	$0.00
PAGE	6/5/1996	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	6/5/1996	Hail	0.75 in.	0	0	$0.00	$0.00
TOWER CITY	9/1/1996	Hail	0.75 in.	0	0	$0.00	$0.00
TOWER CITY	9/1/1996	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	10/29/1996	High Wind	61 mph	0	0	$2,000.00	$0.00
CASS (ZONE)	11/16/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	11/20/1996	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	11/25/1996	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/17/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/21/1996	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/31/1996	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/4/1997	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/4/1997	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/9/1997	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/15/1997	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/21/1997	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/30/1997	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/3/1997	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/4/1997	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/13/1997	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	4/2/1997	Flood		0	0	$10,000,000.00	$0.00
CASS (ZONE)	4/4/1997	Ice Storm		0	0	$6,000,000.00	$0.00
CASS (ZONE)	4/5/1997	Blizzard		0	0	$6,000,000.00	$0.00
CASS (ZONE)	4/8/1997	Flood		0	0	$100,000,000.00	$0.00
CASS (ZONE)	4/16/1997	Flood		0	0	$150,000,000.00	$0.00
FARGO	4/17/1997	Flash Flood		0	0	$0.00	$0.00
BUFFALO	5/17/1997	Hail	1.75 in.	0	0	$0.00	$0.00
WEST FARGO	6/19/1997	Thunderstorm Wind		0	0	$2,000.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
WEST FARGO	6/23/1997	Thunderstorm Wind		0	0	$5,000.00	$0.00
MAPLETON	6/23/1997	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
DAVENPORT	7/1/1997	Lightning		1	2	$0.00	$0.00
CASSELTON	7/1/1997	Thunderstorm Wind		0	0	$20,000.00	$0.00
PROSPER	7/1/1997	Thunderstorm Wind		0	0	$500.00	$0.00
CASS (ZONE)	7/1/1997	High Wind		0	0	$10,000.00	$0.00
ARGUSVILLE	7/26/1997	Tornado		0	0	$0.00	$0.00
WEST FARGO	7/26/1997	Tornado		0	0	$0.00	$0.00
ARGUSVILLE	7/26/1997	Tornado		0	0	$0.00	$0.00
MAPLETON	8/2/1997	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	8/2/1997	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	8/2/1997	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	8/5/1997	Thunderstorm Wind		0	0	$10,000.00	$0.00
FARGO	8/5/1997	Thunderstorm Wind		0	0	$20,000.00	$0.00
CASSELTON	8/5/1997	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
WEST FARGO	8/5/1997	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
LEONARD	8/5/1997	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
CHAFFEE	8/31/1997	Hail	0.75 in.	0	0	$0.00	$0.00
CHAFFEE	9/1/1997	Hail	0.75 in.	0	0	$0.00	$0.00
BUFFALO	9/1/1997	Hail	1.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	9/7/1997	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	9/7/1997	Hail	0.75 in.	0	0	$500,000.00	$0.00
FARGO	9/7/1997	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	10/8/1997	Thunderstorm Wind		0	0	$5,000.00	$0.00
WEST FARGO	10/8/1997	Thunderstorm Wind		0	0	$5,000.00	$0.00
CASS (ZONE)	11/2/1997	High Wind	54 mph	0	0	$0.00	$0.00
CASS (ZONE)	3/13/1998	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/15/1998	Heavy Snow		0	0	$0.00	$0.00
PAGE	6/10/1998	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	6/10/1998	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	6/18/1998	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	6/18/1998	Hail	0.75 in.	0	0	$0.00	$0.00
WEST FARGO	6/18/1998	Flash Flood		0	0	$250,000.00	$0.00
FARGO	6/18/1998	Flash Flood		0	0	$250,000.00	$0.00
GRANDIN	6/18/1998	Funnel Cloud		0	0	$0.00	$0.00
GARDNER	6/18/1998	Funnel Cloud		0	0	$0.00	$0.00
FARGO	6/26/1998	Funnel Cloud		0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
HORACE	7/14/1998	Hail	1.75 in.	0	0	$0.00	$0.00
TOWER CITY	7/18/1998	Hail	1 in.	0	0	$0.00	$0.00
ALICE	7/18/1998	Hail	1 in.	0	0	$0.00	$0.00
ALICE	8/16/1998	Hail	1 in.	0	0	$0.00	$0.00
LEONARD	9/25/1998	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	11/10/1998	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	11/18/1998	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/17/1999	High Wind	55 mph	0	0	$0.00	$0.00
ALICE	6/3/1999	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	6/3/1999	Hail	1 in.	0	0	$0.00	$0.00
KINDRED	6/3/1999	Hail	0.75 in.	0	0	$0.00	$0.00
HARWOOD	6/4/1999	Hail	0.75 in.	0	0	$0.00	$0.00
ARTHUR	6/22/1999	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ARGUSVILLE	7/3/1999	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	7/4/1999	Thunderstorm Wind		0	0	$2,000.00	$0.00
MAPLETON	7/4/1999	Thunderstorm Wind		0	0	$10,000.00	$0.00
WEST FARGO	7/4/1999	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	7/4/1999	Thunderstorm Wind		0	0	$10,000.00	$0.00
WEST FARGO	7/4/1999	Thunderstorm Wind		0	0	$5,000,000.00	$0.00
WEST FARGO	7/4/1999	Thunderstorm Wind		0	0	$15,000.00	$0.00
FARGO	7/4/1999	Thunderstorm Wind	91 mph	0	0	$80,000,000.00	$0.00
FARGO	7/4/1999	Flood		0	0	$15,000.00	$0.00
HARWOOD	7/4/1999	Thunderstorm Wind		0	0	$50,000.00	$0.00
HARWOOD	7/4/1999	Thunderstorm Wind		0	0	$25,000.00	$0.00
KINDRED	7/4/1999	Hail	1 in.	0	0	$0.00	$0.00
WEST FARGO	7/4/1999	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	7/22/1999	Hail	1 in.	0	0	$0.00	$0.00
LEONARD	7/22/1999	Hail	1 in.	0	0	$0.00	$0.00
LEONARD	7/22/1999	Thunderstorm Wind		0	0	$1,000.00	$0.00
TOWER CITY	7/22/1999	Hail	1.75 in.	0	0	$0.00	$0.00
LEONARD	7/22/1999	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	7/22/1999	Flash Flood		0	0	$10,000.00	$0.00
LEONARD	7/22/1999	Flash Flood		0	0	$10,000.00	$0.00
ARGUSVILLE	7/25/1999	Hail	1.75 in.	0	0	$0.00	$0.00
FARGO	7/25/1999	Hail	0.75 in.	0	0	$0.00	$0.00
BUFFALO	7/27/1999	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	7/27/1999	Hail	1.75 in.	0	0	$0.00	$0.00
ARTHUR	7/27/1999	Hail	2.75 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
AMENIA	7/27/1999	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	7/27/1999	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/27/1999	Hail	1.75 in.	0	0	$0.00	$0.00
WEST FARGO	7/27/1999	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	8/9/1999	Hail	0.88 in.	0	0	$0.00	$0.00
PAGE	8/9/1999	Thunderstorm Wind		0	0	$500.00	$0.00
CASSELTON	8/9/1999	Hail	0.88 in.	0	0	$0.00	$0.00
BUFFALO	8/22/1999	Thunderstorm Wind	60 mph	0	0	$15,000.00	$0.00
MAPLETON	8/22/1999	Thunderstorm Wind		0	0	$15,000.00	$0.00
CASSELTON	8/22/1999	Tornado		0	0	$0.00	$0.00
CASS (ZONE)	11/1/1999	High Wind	76 mph	0	0	$150,000.00	$0.00
CASS (ZONE)	3/8/2000	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/8/2000	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/5/2000	High Wind	71 mph	0	0	$0.00	$0.00
CASS (ZONE)	4/10/2000	Heavy Snow		0	0	$0.00	$0.00
LEONARD	6/10/2000	Thunderstorm Wind		0	0	$1,000.00	$0.00
FARGO ARPT	6/10/2000	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
FARGO	6/19/2000	Thunderstorm Wind		0	0	$2,000.00	$0.00
WEST FARGO	6/19/2000	Flash Flood		0	0	$5,000,000.00	$0.00
FARGO	6/19/2000	Flash Flood		0	0	$100,000,000.00	$0.00
CASSELTON	6/19/2000	Flash Flood		0	0	$500,000.00	$0.00
CASS (ZONE)	6/19/2000	Flood		0	0	$0.00	$20,000,000.00
FARGO	6/19/2000	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HORACE	6/19/2000	Hail	0.75 in.	0	0	$0.00	$0.00
LEONARD	7/4/2000	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	7/4/2000	Thunderstorm Wind		0	0	$500.00	$0.00
MAPLETON	7/5/2000	Flash Flood		0	0	$0.00	$0.00
TOWER CITY	7/7/2000	Hail	0.75 in.	0	0	$0.00	$0.00
DURBIN	7/7/2000	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	7/31/2000	High Wind		1	11	$3,000,000.00	$0.00
DAVENPORT	8/14/2000	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	8/16/2000	Hail	1 in.	0	0	$0.00	$0.00
FARGO	8/30/2000	Thunderstorm Wind		0	0	$500.00	$0.00
ALICE	9/2/2000	Hail	1 in.	0	0	$0.00	$0.00
EMBDEN	9/2/2000	Hail	0.88 in.	0	0	$0.00	$0.00
ALICE	9/2/2000	Hail	0.88 in.	0	0	$0.00	$0.00
HORACE	9/2/2000	Hail	0.75 in.	0	0	$0.00	$0.00
KINDRED	9/2/2000	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO ARPT	9/2/2000	Hail	0.75 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
FARGO	9/2/2000	Hail	1 in.	0	0	$0.00	$0.00
FARGO	9/2/2000	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	11/6/2000	Winter Storm		0	0	$2,000.00	$0.00
CASS (ZONE)	11/11/2000	Heavy Snow		0	0	$20,000.00	$0.00
CASS (ZONE)	11/19/2000	Blizzard		0	0	$3,000.00	$0.00
CASS (ZONE)	11/28/2000	Heavy Snow		0	0	$25,000.00	$0.00
CASS (ZONE)	12/16/2000	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/20/2000	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/27/2000	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/23/2001	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/24/2001	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/6/2001	Flood		0	0	$4,000,000.00	$0.00
KINDRED	4/7/2001	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	4/22/2001	Winter Storm		0	0	$0.00	$0.00
TOWER CITY	6/11/2001	Hail	1.75 in.	0	0	$0.00	$0.00
BUFFALO	6/11/2001	Hail	1 in.	0	0	$500.00	$0.00
ARGUSVILLE	6/11/2001	Hail	0.88 in.	0	0	$0.00	$0.00
FARGO	6/11/2001	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	6/13/2001	Hail	0.75 in.	0	0	$0.00	$0.00
ARTHUR	6/20/2001	Hail	0.75 in.	0	0	$0.00	$0.00
LYNCHBURG	7/17/2001	Hail	2.75 in.	0	0	$0.00	$0.00
CHAFFEE	7/17/2001	Hail	4.5 in.	0	0	$50,000.00	$0.00
CHAFFEE	7/17/2001	Hail	3 in.	0	0	$0.00	$0.00
KINDRED	7/17/2001	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	7/17/2001	Hail	1.75 in.	0	0	$0.00	$0.00
LEONARD	7/17/2001	Hail	1.75 in.	0	0	$0.00	$0.00
TOWER CITY	7/18/2001	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	7/21/2001	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
CHAFFEE	7/22/2001	Thunderstorm Wind		0	0	$1,000.00	$0.00
ARTHUR	7/30/2001	Hail	0.88 in.	0	0	$0.00	$0.00
GAR	7/30/2001	Hail	1 in.	0	0	$0.00	$0.00
ARTHUR	7/31/2001	Thunderstorm Wind		0	0	$500.00	$0.00
BUFFALO	7/31/2001	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
EMBDEN	7/31/2001	Hail	0.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/31/2001	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	8/4/2001	Heat		0	0	$0.00	$0.00
BUFFALO	8/7/2001	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
GRANDIN	8/8/2001	Thunderstorm Wind		0	0	$50,000.00	$0.00
FARGO ARPT	8/8/2001	Thunderstorm Wind	56 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
FARGO	8/8/2001	Thunderstorm Wind		0	0	$5,000.00	$0.00
ALICE	8/8/2001	Thunderstorm Wind		0	0	$20,000.00	$0.00
ALICE	8/8/2001	Thunderstorm Wind		0	0	$10,000.00	$0.00
FARGO	8/8/2001	Flash Flood		0	0	$0.00	$0.00
HICKSON	8/17/2001	Hail	0.88 in.	0	0	$0.00	$0.00
TOWER CITY	8/17/2001	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	9/6/2001	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	10/24/2001	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	11/26/2001	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/22/2001	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/11/2002	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	3/8/2002	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	4/6/2002	High Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	4/23/2002	High Wind	60 mph	0	0	$15,000.00	$0.00
FARGO	6/9/2002	Flash Flood		0	0	$0.00	$0.00
GARDNER	6/9/2002	Hail	0.75 in.	0	0	$0.00	$0.00
AYR	6/25/2002	Hail	1 in.	0	0	$0.00	$0.00
AYR	6/25/2002	Hail	1.75 in.	0	0	$0.00	$0.00
WHEATLAND	6/25/2002	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	6/25/2002	Hail	0.88 in.	0	0	$0.00	$0.00
FARGO	7/10/2002	Flash Flood		0	0	$0.00	$0.00
TOWER CITY	7/17/2002	Hail	1.75 in.	0	0	$0.00	$0.00
TOWER CITY	7/17/2002	Thunderstorm Wind		0	0	$10,000.00	$0.00
ALICE	7/17/2002	Hail	0.75 in.	0	0	$0.00	$0.00
ALICE	7/17/2002	Thunderstorm Wind		0	0	$200.00	$0.00
LEONARD	7/17/2002	Hail	0.75 in.	0	0	$0.00	$0.00
AMENIA	7/25/2002	Hail	1 in.	0	0	$0.00	$0.00
FARGO	7/25/2002	Hail	0.88 in.	0	0	$0.00	$0.00
PAGE	8/1/2002	Hail	1 in.	0	0	$0.00	$0.00
GARDNER	8/1/2002	Hail	1 in.	0	0	$0.00	$0.00
MAPLETON	8/1/2002	Hail	1 in.	0	0	$0.00	$0.00
WEST FARGO	8/1/2002	Hail	0.75 in.	0	0	$0.00	$0.00
DAVENPORT	8/11/2002	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
ARGUSVILLE	8/11/2002	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	8/11/2002	Thunderstorm Wind		0	0	$5,000.00	$0.00
GRANDIN	8/16/2002	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	8/16/2002	Thunderstorm Wind		0	0	$1,000.00	$0.00
KINDRED	8/28/2002	Hail	0.75 in.	0	0	$0.00	$0.00
AYR	8/28/2002	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
AYR	8/28/2002	Hail	1 in.	0	0	$0.00	$0.00
LYNCHBURG	8/28/2002	Tornado		0	0	$0.00	$0.00
FARGO	8/28/2002	Flash Flood		0	0	$0.00	$0.00
FARGO	8/31/2002	Hail	0.75 in.	0	0	$0.00	$0.00
HORACE	9/2/2002	Hail	0.75 in.	0	0	$0.00	$0.00
EMBDEN	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
BUFFALO	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
LYNCHBURG	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
AMENIA	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
MAPLETON	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	9/18/2002	Flash Flood		0	0	$0.00	$0.00
FARGO	9/18/2002	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	11/29/2002	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	2/11/2003	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/8/2003	Cold/Wind Chill		0	0	$50,000.00	$0.00
ARTHUR	4/27/2003	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	6/6/2003	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	6/6/2003	Flash Flood		0	0	$0.00	$0.00
FARGO	6/6/2003	Hail	0.88 in.	0	0	$0.00	$0.00
GRANDIN	6/21/2003	Hail	1 in.	0	0	$0.00	$0.00
HICKSON	6/22/2003	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	6/22/2003	Flash Flood		0	0	$0.00	$0.00
TOWER CITY	6/24/2003	Thunderstorm Wind	110 mph	0	0	$600,000.00	$0.00
TOWER CITY	6/24/2003	Thunderstorm Wind	90 mph	0	0	$100,000.00	$0.00
AYR	6/24/2003	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
BUFFALO	6/24/2003	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
ERIE	6/24/2003	Thunderstorm Wind	90 mph	0	0	$25,000.00	$0.00
ARTHUR	6/24/2003	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
ARTHUR	6/24/2003	Thunderstorm Wind	90 mph	0	0	$150,000.00	$0.00
GARDNER	6/24/2003	Thunderstorm Wind	100 mph	0	0	$534,000.00	$0.00
GARDNER	6/24/2003	Thunderstorm Wind	100 mph	0	0	$67,000.00	$0.00
GARDNER	6/24/2003	Thunderstorm Wind	92 mph	0	0	$40,000.00	$0.00
ARGUSVILLE	6/24/2003	Thunderstorm Wind	100 mph	0	1	$200,000.00	$0.00
GARDNER	6/24/2003	Hail	0.88 in.	0	0	$1,250,000.00	$0.00
HUNTER	7/19/2003	Hail	0.88 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASS (ZONE)	12/15/2003	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/24/2004	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/26/2004	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/10/2004	High Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	4/25/2004	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	4/27/2004	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	5/5/2004	High Wind	63 mph	0	0	$0.00	$0.00
DURBIN	5/19/2004	Tornado		0	0	$0.00	$0.00
CASS (ZONE)	6/23/2004	Cold/Wind Chill		0	0	$0.00	$0.00
FARGO	6/23/2004	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
KINDRED	7/10/2004	Hail	1.75 in.	0	0	$0.00	$0.00
CHAFFEE	7/10/2004	Hail	0.75 in.	0	0	$0.00	$0.00
HORACE	7/10/2004	Tornado		0	0	$0.00	$0.00
HORACE	7/10/2004	Hail	1 in.	0	0	$0.00	$0.00
HORACE	7/10/2004	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
WILD RICE	7/10/2004	Tornado		0	0	$0.00	$0.00
AMENIA	7/10/2004	Hail	0.75 in.	0	0	$0.00	$0.00
CASSELTON	7/10/2004	Hail	1 in.	0	0	$0.00	$0.00
FARGO	7/10/2004	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	7/10/2004	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
AMENIA	7/10/2004	Flash Flood		0	0	$0.00	$0.00
WEST FARGO	7/10/2004	Flash Flood		0	0	$0.00	$0.00
GARDNER	7/12/2004	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HARWOOD	7/12/2004	Hail	1.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/12/2004	Hail	1 in.	0	0	$0.00	$0.00
HARWOOD	7/12/2004	Hail	1.75 in.	0	0	$0.00	$0.00
HARWOOD	7/12/2004	Hail	1.75 in.	0	0	$0.00	$0.00
PAGE	7/18/2004	Hail	0.88 in.	0	0	$0.00	$0.00
PAGE	7/18/2004	Tornado		0	0	$0.00	$0.00
BUFFALO	7/18/2004	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
TOWER CITY	7/18/2004	Tornado		0	0	$500,000.00	$0.00
TOWER CITY	7/18/2004	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
BUFFALO	7/18/2004	Tornado		0	0	$0.00	$0.00
BUFFALO	7/19/2004	Flash Flood		0	0	$0.00	$0.00
PAGE	8/2/2004	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	8/19/2004	Cold/Wind Chill		0	0	$0.00	$0.00
CASSELTON	8/24/2004	Hail	0.88 in.	0	0	$0.00	$0.00
GRANDIN	8/24/2004	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
TOWER CITY	8/25/2004	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	8/29/2004	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
FARGO	8/29/2004	Hail	1.5 in.	0	0	$0.00	$0.00
FARGO	8/29/2004	Hail	1.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	12/11/2004	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/30/2004	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/31/2004	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/1/2005	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/13/2005	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/21/2005	Blizzard		0	0	$0.00	$0.00
ALICE	5/7/2005	Hail	0.75 in.	0	0	$0.00	$0.00
DURBIN	5/8/2005	Hail	0.75 in.	0	0	$0.00	$0.00
HINTER	5/18/2005	Hail	0.88 in.	0	0	$0.00	$0.00
WHEATLAND	5/20/2005	Funnel Cloud		0	0	$0.00	$0.00
WHEATLAND	5/20/2005	Tornado		0	0	$10,000.00	$0.00
CASSELTON	5/20/2005	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	5/20/2005	Hail	2.5 in.	0	0	$0.00	$0.00
CASSELTON	5/20/2005	Hail	0.75 in.	0	0	$0.00	$0.00
KINDRED	5/20/2005	Tornado		0	0	$0.00	$0.00
KINDRED	5/20/2005	Hail	0.75 in.	0	0	$0.00	$0.00
KINDRED	5/20/2005	Hail	0.88 in.	0	0	$0.00	$0.00
OW	5/20/2005	Hail	1 in.	0	0	$0.00	$0.00
EMBDEN	5/20/2005	Hail	1 in.	0	0	$0.00	$0.00
CHAFFEE	5/20/2005	Hail	1 in.	0	0	$0.00	$0.00
EMBDEN	5/20/2005	Flash Flood		0	0	$0.00	$0.00
ALICE	6/7/2005	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
FARGO	6/11/2005	Flash Flood		0	0	$0.00	$0.00
GRANDIN	6/11/2005	Funnel Cloud		0	0	$0.00	$0.00
CASSELTON	6/11/2005	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	6/11/2005	Flood		0	0	$0.00	$0.00
CASS (ZONE)	6/12/2005	Flood		0	0	$0.00	$0.00
CASS (ZONE)	6/13/2005	Flood		0	0	$0.00	$0.00
CASS (ZONE)	6/13/2005	Flood		0	0	$0.00	$0.00
CASS (ZONE)	6/15/2005	Flood		0	0	$0.00	$0.00
TOWER CITY	6/20/2005	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	6/20/2005	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	6/20/2005	Lightning		0	0	$0.00	$0.00
GRANDIN	6/27/2005	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
KINDRED	6/29/2005	Tornado		0	0	$0.00	$0.00
WILD RICE	7/2/2005	Hail	0.88 in.	0	0	$0.00	$0.00
ERIE	7/14/2005	Hail	0.75 in.	0	0	$0.00	$0.00
KINDRED	8/8/2005	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	8/17/2005	Hail	1 in.	0	0	$0.00	$0.00
GRANDIN	8/25/2005	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	8/25/2005	Flash Flood		0	0	$0.00	$0.00
WEST FARGO	8/25/2005	Flash Flood		0	0	$0.00	$0.00
PROSPER	9/5/2005	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
FARGO	9/5/2005	Hail	1 in.	0	0	$0.00	$0.00
FARGO	9/5/2005	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	9/5/2005	Hail	1 in.	0	0	$0.00	$0.00
EMBDEN	9/5/2005	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	9/5/2005	Hail	0.88 in.	0	0	$0.00	$0.00
CASSELTON	9/5/2005	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
MAPLETON	9/5/2005	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
WEST FARGO	9/5/2005	Funnel Cloud		0	0	$0.00	$0.00
FARGO	9/5/2005	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
HORACE	9/5/2005	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
HORACE	9/5/2005	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
HORACE	9/5/2005	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
HORACE	9/5/2005	Tornado		0	0	$0.00	$0.00
LEONARD	9/5/2005	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
HICKSON	9/5/2005	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
WILD RICE	9/5/2005	Tornado		0	0	$0.00	$0.00
ALICE	9/8/2005	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	9/9/2005	Hail	0.88 in.	0	0	$0.00	$0.00
PAGE	9/9/2005	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	9/9/2005	Hail	0.75 in.	0	0	$0.00	$0.00
GRANDIN	9/9/2005	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	11/8/2005	High Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/27/2005	Winter Storm		0	0	$250,000.00	$0.00
CASS (ZONE)	11/28/2005	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/29/2005	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/24/2006	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/16/2006	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/24/2006	Winter Storm		0	0	$0.00	$0.00
COUNTYWIDE	3/29/2006	Flood		0	0	$0.00	$0.00
COUNTYWIDE	4/1/2006	Flood		1	0	$1,340,000.00	$0.00
TOWER CITY	4/13/2006	Hail	0.75 in.	0	0	$0.00	$0.00
GARDNER	5/7/2006	Tornado		0	0	$0.00	$0.00
GARDNER	5/9/2006	Hail	0.75 in.	0	0	$0.00	$0.00
HORACE	6/5/2006	Hail	0.75 in.	0	0	$0.00	$0.00
BUFFALO	6/5/2006	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	6/5/2006	Funnel Cloud		0	0	$0.00	$0.00
LEONARD	6/5/2006	Tornado		0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASSELTON	6/5/2006	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
MAPLETON	6/5/2006	Hail	0.88 in.	0	0	$0.00	$0.00
BUFFALO	6/23/2006	Hail	0.88 in.	0	0	$0.00	$0.00
CASS (ZONE)	7/25/2006	Drought		0	0	$0.00	$0.00
ARTHUR	7/25/2006	Hail	0.88 in.	0	0	$0.00	$0.00
WEST FARGO	7/25/2006	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ALICE	8/5/2006	Hail	0.75 in.	0	0	$0.00	$0.00
DAVENPORT	8/5/2006	Hail	1.75 in.	0	0	$0.00	$0.00
DAVENPORT	8/5/2006	Hail	1.75 in.	0	0	$0.00	$0.00
HORACE	8/5/2006	Hail	1.75 in.	0	0	$0.00	$0.00
LEONARD	8/5/2006	Hail	1.75 in.	0	0	$0.00	$0.00
LEONARD	8/5/2006	Tornado		0	0	$0.00	$0.00
CASS (ZONE)	8/8/2006	Drought		0	0	$0.00	$0.00
PAGE	8/9/2006	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	8/9/2006	Hail	0.88 in.	0	0	$0.00	$0.00
ALICE	8/9/2006	Hail	0.88 in.	0	0	$0.00	$0.00
MAPLETON	8/10/2006	Hail	1 in.	0	0	$0.00	$0.00
ERIE	8/10/2006	Hail	0.88 in.	0	0	$0.00	$0.00
ABSARAKA	8/10/2006	Hail	2 in.	0	0	$0.00	$0.00
ABSARAKA	8/10/2006	Hail	1.5 in.	0	0	$0.00	$0.00
WHEATLAND	8/10/2006	Tornado		0	0	$0.00	$0.00
PAGE	9/7/2006	Hail	0.88 in.	0	0	$0.00	$0.00
CASS (ZONE)	12/30/2006	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/3/2007	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/24/2007	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/27/2007	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/1/2007	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/1/2007	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	5/6/2007	High Wind	58 mph	0	0	$0.00	$0.00
FARGO	5/18/2007	Hail	0.88 in.	0	0	$0.00	$0.00
FARGO	5/18/2007	Flash Flood		0	0	$0.00	$0.00
BUFFALO	5/18/2007	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	5/18/2007	Hail	1.75 in.	0	0	$0.00	$0.00
AYR	5/30/2007	Tornado		0	0	$0.00	$0.00
PAGE	5/30/2007	Tornado		0	0	$0.00	$0.00
PAGE	5/30/2007	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
PAGE	5/30/2007	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
EMBDEN	6/7/2007	Hail	0.88 in.	0	0	$0.00	$0.00
ELIZABETH	6/17/2007	Hail	0.75 in.	0	0	$0.00	$0.00
LEONARD	6/17/2007	Tornado		0	0	$0.00	$0.00
KINDRED	6/17/2007	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
BUFFALO	6/17/2007	Thunderstorm Wind	96 mph	0	0	$0.00	$0.00
ST BENEDICT	6/17/2007	Thunderstorm Wind	85 mph	0	0	$0.00	$0.00
HICKSON	6/17/2007	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
WEST FARGO	6/17/2007	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HICKSON	6/17/2007	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
(FAR) HECTOR INTL ARP	6/17/2007	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	6/17/2007	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	7/10/2007	High Wind	61 mph	0	0	$0.00	$0.00
PAGE	7/15/2007	Hail	1 in.	0	0	$500,000.00	$15,000,000.00
PAGE	7/15/2007	Hail	2 in.	0	0	$500,000.00	$15,000,000.00
BUFFALO	7/15/2007	Thunderstorm Wind	63 mph	0	0	$500,000.00	$20,000,000.00
TOWER CITY	7/15/2007	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	7/15/2007	Thunderstorm Wind	85 mph	0	0	$1,000,000.00	$11,000,000.00
EMBDEN	7/15/2007	Tornado		0	0	$250,000.00	$0.00
LEONARD	7/15/2007	Funnel Cloud		0	0	$0.00	$0.00
EMBDEN	7/15/2007	Hail	0.88 in.	0	0	$1,000,000.00	$24,000,000.00
CHAFFEE	7/15/2007	Tornado		0	0	$250,000.00	$0.00
EMBDEN	7/15/2007	Thunderstorm Wind	100 mph	0	0	$1,000,000.00	$11,000,000.00
HUNTER	7/15/2007	Hail	0.75 in.	0	0	$0.00	$0.00
PAGE	7/15/2007	Thunderstorm Wind	81 mph	0	0	$0.00	$6,000,000.00
PROSPER	7/15/2007	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
TOWER CITY	7/15/2007	Thunderstorm Wind	81 mph	0	0	$1,000,000.00	$22,000,000.00
MAPLETON	7/15/2007	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
TOWER CITY	7/15/2007	Tornado		0	0	$1,000,000.00	$0.00
TOWER CITY	7/15/2007	Tornado		0	0	$2,500,000.00	$0.00
TOWER CITY	7/15/2007	Thunderstorm Wind	100 mph	0	0	$2,500,000.00	$12,000,000.00
ALICE	7/15/2007	Thunderstorm Wind	75 mph	0	0	$500,000.00	$0.00
ALICE	7/15/2007	Thunderstorm Wind	81 mph	0	0	$1,000,000.00	$14,000,000.00
PAGE	7/22/2007	Hail	0.88 in.	0	0	$0.00	$0.00
PROSPER	8/13/2007	Hail	0.88 in.	0	0	$0.00	$0.00
LEONARD	9/21/2007	Hail	2 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
HORACE	9/21/2007	Hail	1 in.	0	0	$0.00	$0.00
FARGO	9/21/2007	Hail	2 in.	0	0	$0.00	$0.00
FARGO	9/21/2007	Lightning		0	0	$10,000.00	$0.00
FARGO	9/21/2007	Hail	1.75 in.	0	0	$0.00	$0.00
HORACE	9/21/2007	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	9/21/2007	Hail	2.75 in.	0	0	$0.00	$0.00
FARGO	9/21/2007	Hail	3.5 in.	0	0	$30,000,000.00	$0.00
FAR	9/21/2007	Hail	1.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	12/1/2007	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/4/2007	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/13/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/17/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/29/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/9/2008	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/9/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/13/2008	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/19/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/21/2008	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	4/6/2008	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	4/10/2008	Winter Storm		0	0	$0.00	$0.00
FARGO	4/21/2008	Lightning		0	0	$20,000.00	$0.00
ELIZABETH	5/24/2008	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	5/27/2008	Frost/Freeze		0	0	$0.00	$0.00
CASS (ZONE)	6/11/2008	High Wind	48 mph	0	0	$20,000.00	$0.00
DAVENPORT	6/11/2008	Thunderstorm Wind	60 mph	0	0	$0.00	$200,000.00
CASS (ZONE)	6/11/2008	High Wind	46 mph	0	0	$0.00	$0.00
FARGO	6/11/2008	Flash Flood		0	0	$100,000.00	$0.00
BUFFALO	6/14/2008	Thunderstorm Wind	66 mph	0	0	$0.00	$0.00
GRANDIN	6/14/2008	Hail	0.75 in.	0	0	$0.00	$500,000.00
LEONARD	6/14/2008	Thunderstorm Wind	60 mph	0	0	$20,000.00	$0.00
WEST FARGO	6/14/2008	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
FARGO	6/14/2008	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
TOWER CITY	6/14/2008	Tornado		0	0	$10,000.00	$20,000.00
BUFFALO	6/14/2008	Thunderstorm Wind	63 mph	0	0	$20,000.00	$500,000.00
CASSELTON	6/14/2008	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASSELTON	6/14/2008	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASSELTON	6/14/2008	Hail	0.88 in.	0	0	$0.00	$0.00
WEST FARGO	6/14/2008	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
WEST FARGO	6/14/2008	Thunderstorm Wind	64 mph	0	0	$50,000.00	$500,000.00
FARGO	6/14/2008	Thunderstorm Wind	63 mph	0	0	$500,000.00	$0.00
(FAR) HECTOR INTL ARP	6/14/2008	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	6/14/2008	Thunderstorm Wind	63 mph	0	0	$300,000.00	$300,000.00
OSGOOD	6/14/2008	Funnel Cloud		0	0	$0.00	$0.00
KINDRED	6/24/2008	Thunderstorm Wind	60 mph	0	0	$20,000.00	$20,000.00
DAVENPORT	7/7/2008	Hail	1 in.	0	0	$0.00	$0.00
WARREN	7/7/2008	Hail	0.88 in.	0	0	$0.00	$0.00
GRANDIN	7/7/2008	Hail	1.75 in.	0	0	$50,000.00	$100,000.00
AYR	8/2/2008	Hail	1 in.	0	0	$10,000.00	$200,000.00
FARGO	8/14/2008	Hail	1 in.	0	0	$10,000.00	$50,000.00
HARWOOD	9/8/2008	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	10/26/2008	High Wind	40 mph	0	0	$0.00	$0.00
ARTHUR	11/5/2008	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	12/13/2008	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/15/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/19/2008	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/20/2008	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/29/2008	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/4/2009	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/11/2009	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/14/2009	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/14/2009	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/15/2009	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/31/2009	High Wind	46 mph	0	0	$0.00	$0.00
CASS (ZONE)	2/8/2009	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/26/2009	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/9/2009	Blizzard		0	0	$0.00	$0.00
WALDEN	3/22/2009	Flood		0	0	$5,000.00	$0.00
CASS (ZONE)	3/24/2009	Winter Storm		0	0	$0.00	$0.00
FARGO	3/27/2009	Flash Flood		0	0	$1,000.00	$0.00
CASS (ZONE)	3/29/2009	Winter Storm		0	0	$0.00	$0.00
WALDEN	4/1/2009	Flood		0	0	$5,000.00	$0.00
WALDEN	5/1/2009	Flood		0	0	$5,000.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
WARREN	6/17/2009	Flood		0	0	$2,000.00	$5,000.00
FARGO	6/27/2009	Hail	0.75 in.	0	0	$0.00	$0.00
GRANDIN	7/20/2009	Hail	1 in.	0	0	$0.00	$0.00
GARDNER	7/20/2009	Hail	0.75 in.	0	0	$0.00	$0.00
WOODS	7/20/2009	Hail	0.75 in.	0	0	$0.00	$0.00
FARGO	7/20/2009	Hail	0.75 in.	0	0	$0.00	$0.00
LEONARD	7/20/2009	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
PINKHAM	9/11/2009	Funnel Cloud		0	0	$0.00	$0.00
CASS (ZONE)	12/23/2009	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/24/2009	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/7/2010	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/7/2010	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/22/2010	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/25/2010	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/6/2010	Winter Storm		0	0	$0.00	$0.00
WALDEN	3/12/2010	Flood		0	0	$0.00	$0.00
TOWER CITY	5/24/2010	Funnel Cloud		0	0	$0.00	$0.00
MAGNOLIA	5/24/2010	Hail	1 in.	0	0	$0.00	$0.00
HUNTER	5/24/2010	Hail	1 in.	0	0	$0.00	$0.00
HUNTER	5/24/2010	Hail	0.75 in.	0	0	$0.00	$0.00
CASSELTON	5/24/2010	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
Page	5/25/2010	Flood		0	0	$2,000.00	$50,000.00
(FAR) HECTOR INTL ARP	6/17/2010	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
RIVERSIDE	6/17/2010	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
WEST FARGO	6/17/2010	Flash Flood		0	0	$25,000.00	$5,000.00
BUFFALO	6/22/2010	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ALICE	7/13/2010	Tornado		0	0	$0.00	$0.00
KINDRED	7/13/2010	Funnel Cloud		0	0	$0.00	$0.00
LEONARD	7/14/2010	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
CASSELTON	7/14/2010	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
WEST FARGO	7/14/2010	Thunderstorm Wind	90 mph	0	0	$1,000,000.00	$0.00
RIVERSIDE	7/14/2010	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
FARGO	7/14/2010	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
HORACE	7/17/2010	Hail	1 in.	0	0	$0.00	$0.00
HORACE	7/17/2010	Hail	0.75 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
HORACE	7/27/2010	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
COTTER	7/27/2010	Thunderstorm Wind	72 mph	0	0	$0.00	$0.00
BUFFALO	7/27/2010	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
CASSELTON	7/27/2010	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
WOODS	7/27/2010	Tornado		0	0	$0.00	$250,000.00
DAVENPORT	8/12/2010	Hail	1 in.	0	0	$0.00	$0.00
FARGO	8/12/2010	Flash Flood		0	0	$10,000.00	$5,000.00
RIVERSIDE	8/12/2010	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	8/12/2010	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
FARGO	8/12/2010	Thunderstorm Wind	68 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/26/2010	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/26/2010	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	11/22/2010	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/15/2010	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/19/2010	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/30/2010	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/31/2010	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/1/2011	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/1/2011	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/8/2011	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/13/2011	High Wind	40 mph	0	0	$0.00	$0.00
CASS (ZONE)	3/11/2011	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/22/2011	Winter Storm		0	0	$0.00	$0.00
WALDEN	4/3/2011	Flood		0	0	$0.00	$0.00
WALDEN	5/1/2011	Flood		0	0	$0.00	$0.00
HICKSON	5/9/2011	Flash Flood		0	0	$500.00	$5,000.00
RIVERSIDE	5/10/2011	Hail	1.75 in.	0	0	$0.00	$0.00
WOODS	5/30/2011	Funnel Cloud		0	0	$0.00	$0.00
KINDRED	5/30/2011	Tornado		0	0	$50,000.00	$0.00
ST BENEDICT	5/30/2011	Tornado		0	0	$250,000.00	$0.00
HORACE	5/30/2011	Tornado		0	0	$600,000.00	$0.00
FARGO	5/30/2011	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
WEST FARGO	5/30/2011	Tornado		0	0	$750,000.00	$0.00
FARGO	5/30/2011	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
RIVERSIDE	5/30/2011	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
FARGO	5/30/2011	Thunderstorm Wind	72 mph	0	0	$0.00	$0.00
HARWOOD	5/30/2011	Funnel Cloud		0	0	$0.00	$0.00
ARGUSVILLE	5/30/2011	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
HARWOOD	5/30/2011	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
GRANDIN	7/4/2011	Tornado		0	0	$5,000.00	$5,000.00
GARDNER	7/4/2011	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
GARDNER	7/4/2011	Hail	0.88 in.	0	0	$0.00	$0.00
AMENIA	7/4/2011	Tornado		0	0	$150,000.00	$150,000.00
EVEREST	7/4/2011	Funnel Cloud		0	0	$0.00	$0.00
LEONARD	7/4/2011	Hail	1 in.	0	0	$0.00	$0.00
OSGOOD	7/15/2011	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	7/16/2011	Excessive Heat		0	0	$0.00	$0.00
PAGE	7/17/2011	Hail	1.75 in.	0	0	$0.00	$0.00
MASON	7/17/2011	Hail	1.5 in.	0	0	$0.00	$0.00
NOLAN	7/17/2011	Hail	1.75 in.	0	0	$0.00	$0.00
AYR	7/17/2011	Tornado		0	0	$0.00	$0.00
AYR	7/17/2011	Funnel Cloud		0	0	$0.00	$0.00
ABSARAKA	7/17/2011	Hail	1.5 in.	0	0	$0.00	$0.00
MAGNOLIA	7/17/2011	Funnel Cloud		0	0	$0.00	$0.00
ABSARAKA	7/19/2011	Hail	1 in.	0	0	$0.00	$0.00
WALDEN	7/19/2011	Hail	1 in.	0	0	$0.00	$0.00
WHEATLAND	7/19/2011	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASSELTON	7/19/2011	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
OSGOOD	7/19/2011	Thunderstorm Wind	63 mph	0	0	$200,000.00	$100,000.00
OSGOOD	7/19/2011	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
FARGO	7/19/2011	Flash Flood		0	0	$20,000.00	$5,000.00
FARGO	7/19/2011	Flash Flood		0	0	$5,000.00	$25,000.00
CASSELTON	7/19/2011	Flash Flood		0	0	$1,000.00	$20,000.00
AYR	7/23/2011	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
LEONARD	7/23/2011	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
LYNCHBURG	7/23/2011	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
GARDNER	7/23/2011	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
FARGO	7/23/2011	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
FARGO	7/23/2011	Thunderstorm Wind	90 mph	0	0	$500,000.00	$0.00
RIVERSIDE	7/23/2011	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	7/23/2011	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
FARGO	7/23/2011	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
ALICE	7/30/2011	Hail	1 in.	0	0	$0.00	$0.00
ERIE	8/1/2011	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
ARTHUR	8/1/2011	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HORACE	8/1/2011	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
PAGE	8/1/2011	Flash Flood		0	0	$25,000.00	$50,000.00
PAGE	8/1/2011	Flood		0	0	$10,000.00	$20,000.00
HICKSON	8/6/2011	Funnel Cloud		0	0	$0.00	$0.00
GRANDIN	8/12/2011	Hail	1.5 in.	0	0	$0.00	$0.00
GARDNER	8/12/2011	Heavy Rain		0	0	$0.00	$0.00
FARGO	8/12/2011	Thunderstorm Wind	56 mph	0	0	$0.00	$5,000.00
GARDNER	8/12/2011	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	10/7/2011	High Wind	40 mph	0	0	$0.00	$0.00
CASS (ZONE)	1/18/2012	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/25/2012	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/28/2012	Winter Storm		0	0	$0.00	$0.00
PROSPER	6/7/2012	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
PROSPER	6/7/2012	Hail	0.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	6/7/2012	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
GARDNER	6/7/2012	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	7/10/2012	Drought		0	0	$0.00	$0.00
WOODS	7/22/2012	Hail	1.5 in.	0	0	$0.00	$0.00
KINDRED	7/22/2012	Hail	0.88 in.	0	0	$0.00	$0.00
ST BENEDICT	7/22/2012	Hail	1 in.	0	0	$0.00	$0.00
RIVERSIDE	7/24/2012	Hail	0.88 in.	0	0	$0.00	$0.00
(FAR) HECTOR INTL ARP	7/24/2012	Hail	1 in.	0	0	$0.00	$0.00
CASS (ZONE)	8/1/2012	Drought		0	0	$0.00	$0.00
GRANDIN	8/3/2012	Hail	0.88 in.	0	0	$0.00	$0.00
GRANDIN	8/3/2012	Hail	1.25 in.	0	0	$0.00	$0.00
ST BENEDICT	8/3/2012	Funnel Cloud		0	0	$0.00	$0.00
CASS (ZONE)	9/1/2012	Drought		0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASS (ZONE)	10/1/2012	Drought		0	0	$0.00	$0.00
CASS (ZONE)	1/11/2013	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/19/2013	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/20/2013	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/28/2013	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	2/10/2013	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/18/2013	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/4/2013	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/17/2013	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/17/2013	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/14/2013	Winter Storm		0	0	$0.00	$0.00
(FAR) HECTOR INTL ARP	5/14/2013	Thunderstorm Wind	64 mph	0	0	$2,000.00	$0.00
WEST FARGO	5/30/2013	Flood		0	0	$15,000.00	$0.00
GRANDIN	6/20/2013	Hail	1 in.	0	0	$0.00	$0.00
TOWER CITY	6/20/2013	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	6/20/2013	Hail	1.75 in.	0	0	$0.00	$0.00
DAVENPORT	6/20/2013	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
RIVERSIDE	6/20/2013	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
HARWOOD	6/20/2013	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	6/20/2013	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
ST BENEDICT	6/20/2013	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
HICKSON	6/20/2013	Hail	1.25 in.	0	0	$0.00	$0.00
CASSELTON	6/20/2013	Heavy Rain		0	0	$0.00	$0.00
ELIZABETH	6/20/2013	Hail	1 in.	0	0	$0.00	$0.00
LYNCHBURG	6/25/2013	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	6/25/2013	Hail	0.88 in.	0	0	$0.00	$0.00
CHAFFEE	6/25/2013	Hail	1 in.	0	0	$0.00	$0.00
HUNTER	6/25/2013	Hail	1.25 in.	0	0	$0.00	$0.00
ST BENEDICT	6/25/2013	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HUNTER	6/25/2013	Hail	0.75 in.	0	0	$0.00	$0.00
OSGOOD	6/25/2013	Hail	1 in.	0	0	$0.00	$0.00
ERIE	6/25/2013	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	6/25/2013	Flash Flood		0	0	$50,000.00	$50,000.00
CASSELTON	6/25/2013	Flash Flood		0	0	$5,000.00	$50,000.00
FARGO	8/25/2013	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
LYNCHBURG	8/29/2013	Hail	1.25 in.	0	0	$0.00	$0.00
CASSELTON	8/29/2013	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
COTTER	9/9/2013	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
WHEATLAND	9/18/2013	Hail	0.75 in.	0	0	$0.00	$0.00
CASS (ZONE)	12/3/2013	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/6/2013	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/28/2013	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/28/2013	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/3/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/4/2014	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/16/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/22/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/22/2014	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/26/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/26/2014	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/13/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/1/2014	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/31/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/1/2014	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	4/19/2014	High Wind	62 mph	0	0	$0.00	$0.00
PERSIS	6/1/2014	Funnel Cloud		0	0	$0.00	$0.00
PERSIS	6/1/2014	Tornado		0	0	$0.00	$0.00
CASSELTON	6/5/2014	Hail	0.75 in.	0	0	$0.00	$0.00
MYRA	6/5/2014	Hail	0.75 in.	0	0	$0.00	$0.00
CASSELTON	6/5/2014	Hail	1.5 in.	0	0	$0.00	$0.00
MYRA	6/5/2014	Hail	1 in.	0	0	$0.00	$0.00
CHAFFEE	6/5/2014	Funnel Cloud		0	0	$0.00	$0.00
LYNCHBURG	6/5/2014	Hail	0.75 in.	0	0	$0.00	$0.00
CHAFFEE	6/5/2014	Tornado		0	0	$0.00	$0.00
LEONARD	6/5/2014	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	6/21/2014	Hail	0.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	6/21/2014	Thunderstorm Wind	70 mph	0	0	$5,000.00	$0.00
ARGUSVILLE	6/21/2014	Hail	1 in.	0	0	$0.00	$0.00
PAGE	7/5/2014	Hail	1 in.	0	0	$0.00	$0.00
GARDNER	7/5/2014	Hail	1 in.	0	0	$0.00	$0.00
OSGOOD	7/5/2014	Hail	1 in.	0	0	$0.00	$0.00
RIVERSIDE	7/5/2014	Hail	0.88 in.	0	0	$0.00	$0.00
WARREN	8/16/2014	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
HORACE	8/18/2014	Funnel Cloud		0	0	$0.00	$0.00
KINDRED	9/4/2014	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
ALICE	9/4/2014	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
LYNCHBURG	9/4/2014	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
LEONARD	9/4/2014	Tornado		0	0	$0.00	$0.00
KINDRED	9/4/2014	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
FARGO	9/4/2014	Flash Flood		0	0	$15,000.00	$0.00
CASSELTON	9/4/2014	Flash Flood		0	0	$1,000.00	$5,000.00
CASS (ZONE)	1/3/2015	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/6/2015	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/21/2015	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	5/18/2015	Frost/Freeze		0	0	$0.00	$0.00
GRANDIN	6/2/2015	Hail	0.88 in.	0	0	$0.00	$0.00
GRANDIN	6/2/2015	Hail	1.5 in.	0	0	$0.00	$0.00
ERIE	6/27/2015	Funnel Cloud		0	0	$0.00	$0.00
ERIE	6/27/2015	Funnel Cloud		0	0	$0.00	$0.00
ERIE	6/27/2015	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
WHEATLAND	6/27/2015	Hail	1.75 in.	0	0	$0.00	$0.00
CASSELTON	6/27/2015	Hail	1 in.	0	0	$0.00	$0.00
LYNCHBURG	6/27/2015	Hail	1.75 in.	0	0	$0.00	$0.00
HICKSON	7/12/2015	Funnel Cloud		0	0	$0.00	$0.00
HARGO	7/12/2015	Hail	1.25 in.	0	0	$0.00	$0.00
ABSARAKA	7/14/2015	Funnel Cloud		0	0	$0.00	$0.00
OSGOOD	7/15/2015	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
AYR	7/17/2015	Hail	1 in.	0	0	$0.00	$0.00
VANCE	7/17/2015	Hail	2.5 in.	0	0	$0.00	$0.00
AMENIA ARPT	7/17/2015	Hail	0.88 in.	0	0	$0.00	$0.00
NEWMAN	7/17/2015	Funnel Cloud		0	0	$0.00	$0.00
PROSPER	7/17/2015	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
HUNTER	7/23/2015	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
HUNTER	7/23/2015	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
PAGE	8/7/2015	Hail	1.5 in.	0	0	$0.00	$0.00
BUFFALO	8/7/2015	Hail	1.75 in.	0	0	$0.00	$0.00
ARTHUR	8/7/2015	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ARTHUR	8/7/2015	Hail	0.75 in.	0	0	$0.00	$0.00
ARGUSVILLE	8/7/2015	Hail	1 in.	0	0	$0.00	$0.00
GARDNER	8/7/2015	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
DAVENPORT	8/15/2015	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/12/2015	High Wind	40 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/18/2015	High Wind	67 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/15/2015	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/6/2016	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/16/2016	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/7/2016	Blizzard		0	0	$0.00	$0.00
CHAFFEE	5/30/2016	Hail	0.75 in.	0	0	$0.00	$0.00
BUFFALO	7/4/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
MAGNOLIA	7/4/2016	Hail	1.25 in.	0	0	$0.00	$0.00
CASSELTON	7/4/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASSELTON	7/4/2016	Hail	0.88 in.	0	0	$0.00	$0.00
LYNCHBURG	7/4/2016	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
MAPLETON	7/4/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
RIVERSIDE	7/4/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	7/4/2016	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
HUNTER	7/9/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ALICE	7/9/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
PERSIS	7/10/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FIFE	7/10/2016	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
COTTER	7/11/2016	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/11/2016	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
CASS (ZONE)	7/20/2016	Excessive Heat		0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/20/2016	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
HORACE	7/20/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/26/2016	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/26/2016	Hail	0.88 in.	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/26/2016	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
OSGOOD	8/27/2016	Hail	0.75 in.	0	0	$0.00	$0.00
RIVERSIDE	8/27/2016	Hail	0.88 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
RIVERSIDE	8/27/2016	Hail	1.25 in.	0	0	$0.00	$0.00
FARGO	8/27/2016	Hail	2 in.	0	0	$0.00	$0.00
HICKSON	9/7/2016	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	9/7/2016	Heavy Rain		0	0	$0.00	$0.00
CASS (ZONE)	12/6/2016	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/17/2016	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/25/2016	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/26/2016	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/2/2017	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/12/2017	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/7/2017	High Wind	60 mph	0	0	$0.00	$0.00
FARGO	5/28/2017	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
COTTER	5/28/2017	Thunderstorm Wind	60 mph	0	2	$10,000.00	$0.00
ELIZABETH	6/9/2017	Hail	1 in.	0	0	$0.00	$0.00
GARDNER	6/9/2017	Hail	1 in.	0	0	$0.00	$0.00
COTTER	6/9/2017	Hail	0.75 in.	0	0	$0.00	$0.00
ELIZABETH	6/13/2017	Hail	1 in.	0	0	$0.00	$0.00
RIVERSIDE	6/13/2017	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
OSGOOD	6/13/2017	Thunderstorm Wind	100 mph	0	0	$750,000.00	$0.00
OSGOOD	6/13/2017	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/13/2017	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
ARTHUR	6/13/2017	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
HUNTER	6/13/2017	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
FARGO	6/13/2017	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
ARGUSVILLE	6/13/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	6/13/2017	Heavy Rain		0	0	$0.00	$0.00
ERIE	7/4/2017	Thunderstorm Wind	94 mph	0	0	$0.00	$0.00
ARGUSVILLE	7/4/2017	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/4/2017	Hail	1 in.	0	0	$0.00	$0.00
HARWOOD	7/4/2017	Hail	1.75 in.	0	0	$0.00	$0.00
COTTER	7/4/2017	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
HUNTER	7/6/2017	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
HUNTER	7/6/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASSELTON	7/21/2017	Hail	0.88 in.	0	0	$0.00	$0.00
HUNTER	7/22/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
GRANDIN	7/31/2017	Hail	1.5 in.	0	0	$0.00	$0.00
GARDNER	7/31/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
NEWMAN	7/31/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
AYR	7/31/2017	Hail	1 in.	0	0	$0.00	$0.00
EMBDEN	7/31/2017	Hail	1.25 in.	0	0	$0.00	$0.00
HORACE	7/31/2017	Hail	1 in.	0	0	$0.00	$0.00
ALICE	8/9/2017	Hail	1 in.	0	0	$0.00	$0.00
LEONARD	8/9/2017	Hail	1 in.	0	0	$0.00	$0.00
WALDEN	9/1/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
BUFFALO	9/19/2017	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
HUNTER	9/19/2017	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
GARDNER	9/19/2017	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/26/2017	High Wind	64 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/4/2017	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/25/2017	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/29/2017	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/1/2018	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/11/2018	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/12/2018	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/15/2018	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/5/2018	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	3/30/2018	Winter Storm		0	0	$0.00	$0.00
ERIE	5/25/2018	Thunderstorm Wind	68 mph	0	0	$0.00	$0.00
BUFFALO	6/5/2018	Hail	1 in.	0	0	$0.00	$0.00
RIVERSIDE	6/5/2018	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
TOWER CITY	6/8/2018	Hail	1.75 in.	0	0	$0.00	$0.00
BUFFALO	6/8/2018	Tornado		0	0	$0.00	$0.00
BUFFALO	6/8/2018	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
MYRA	6/8/2018	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
CHAFFEE	6/8/2018	Tornado		0	0	$0.00	$0.00
LYNCHBURG	6/8/2018	Hail	1.25 in.	0	0	$0.00	$0.00
LEONARD	6/8/2018	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
KINDRED	6/8/2018	Hail	1.75 in.	0	0	$0.00	$0.00
WOODS	6/8/2018	Tornado		0	0	$0.00	$0.00
KINDRED	6/8/2018	Hail	2 in.	0	0	$0.00	$0.00
FARDNER	6/9/2018	Hail	1 in.	0	0	$0.00	$0.00
ELIZABETH	6/14/2018	Hail	0.75 in.	0	0	$0.00	$0.00
HORACE	6/15/2018	Hail	1.5 in.	0	0	$0.00	$0.00
FARGO	6/15/2018	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
FARGO	6/15/2018	Hail	1 in.	0	0	$0.00	$0.00
COTTER	6/15/2018	Hail	1 in.	0	0	$0.00	$0.00
WILD RICE	6/29/2018	Thunderstorm Wind	86 mph	0	0	$0.00	$0.00
LYNCHBURG	7/2/2018	Hail	1.75 in.	0	0	$0.00	$0.00
FIFE	7/2/2018	Hail	1.25 in.	0	0	$0.00	$0.00
PROSPER	7/2/2018	Hail	1.5 in.	0	0	$0.00	$0.00
HARWOOD	7/2/2018	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/2/2018	Hail	1.75 in.	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/4/2018	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
LEONARD	7/8/2018	Hail	1 in.	0	0	$0.00	$0.00
TOWER CITY	8/26/2018	Hail	0.88 in.	0	0	$0.00	$0.00
LYNCHBURG	8/26/2018	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
DAVENPRORT	8/26/2018	Hail	1.5 in.	0	0	$0.00	$0.00
DAVENPRORT	8/26/2018	Hail	2.5 in.	0	0	$0.00	$0.00
HORACE	8/26/2018	Hail	1.5 in.	0	0	$0.00	$0.00
HICKSON	8/26/2018	Hail	1.5 in.	0	0	$0.00	$0.00
FARGO	8/26/2018	Hail	1 in.	0	0	$0.00	$0.00
ELIZABETH	8/27/2018	Hail	2 in.	0	0	$0.00	$0.00
CHAFFEE	8/27/2018	Hail	1.75 in.	0	0	$0.00	$0.00
RIVERSIDE	8/27/2018	Hail	0.75 in.	0	0	$0.00	$0.00
WILD RICE	8/27/2018	Hail	1 in.	0	0	$0.00	$0.00
COTTER	9/2/2018	Hail	0.88 in.	0	0	$0.00	$0.00
TOWER CITY	9/14/2018	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/10/2018	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/26/2018	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/27/2018	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/31/2018	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/31/2018	Extreme Cold/Wind Chill		0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
CASS (ZONE)	1/1/2019	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/23/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/27/2019	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	1/27/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/28/2019	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/3/2019	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	2/6/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/7/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/7/2019	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/24/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	3/2/2019	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/9/2019	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/14/2019	Blizzard		0	0	$0.00	$0.00
HUNTER	4/4/2019	Flood		0	0	$50,000.00	$0.00
CASS (ZONE)	4/11/2019	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	4/11/2019	Blizzard		0	0	$0.00	$0.00
ERIE	5/24/2019	Funnel Cloud		0	0	$0.00	$0.00
MASON	6/8/2019	Hail	1 in.	0	0	$0.00	$0.00
FIFE	6/8/2019	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
COTTER	6/8/2019	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/8/2019	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
NEWMAN	6/29/2019	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
DAVENPRORT	6/29/2019	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
COTTER	6/29/2019	Thunderstorm Wind	69 mph	0	0	$0.00	$0.00
COTTER	6/29/2019	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
COTTER	6/29/2019	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/29/2019	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
RIVERSIDE	6/29/2019	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/29/2019	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
HARWOOD	6/29/2019	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/29/2019	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
LEONARD	7/3/2019	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
CASSELTON	7/3/2019	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	7/3/2019	Hail	1 in.	0	0	$0.00	$0.00
HICKSON	7/3/2019	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
GARDNER	7/3/2019	Hail	1.75 in.	0	0	$0.00	$0.00
HUNTER	7/8/2019	Thunderstorm Wind	75 mph	0	0	$0.00	$0.00
COTTER	7/8/2019	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
COTTER	7/8/2019	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	7/8/2019	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
FARGO	7/8/2019	Flash Flood		0	0	$10,000.00	$30,000.00
HICKSON	7/9/2019	Funnel Cloud		0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/9/2019	Funnel Cloud		0	0	$0.00	$0.00
HUNTER	7/12/2019	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
BUFFALO	9/2/2019	Thunderstorm Wind	81 mph	0	1	$0.00	$0.00
WEST FARGO	9/2/2019	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
HARWOOD	9/2/2019	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
FARGO	9/2/2019	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	9/2/2019	Thunderstorm Wind	71 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	9/2/2019	Thunderstorm Wind	77 mph	0	0	$0.00	$0.00
RIVERSIDE	9/2/2019	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	9/2/2019	Thunderstorm Wind	67 mph	0	0	$0.00	$0.00
RIVERSIDE	9/2/2019	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	9/2/2019	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
CASS (ZONE)	9/2/2019	High Wind	58 mph	0	0	$0.00	$0.00
KINDRED	9/20/2019	Hail	1.75 in.	0	0	$0.00	$0.00
DURBIN	9/20/2019	Funnel Cloud		0	0	$0.00	$0.00
CASSELTON	9/20/2019	Hail	1 in.	0	0	$0.00	$0.00
ARGUSVILLE	9/20/2019	Hail	1.75 in.	0	0	$0.00	$0.00
HUNTER	9/20/2019	Hail	1.25 in.	0	0	$0.00	$0.00
MAPLETON	9/21/2019	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
FARGO	9/21/2019	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	10/10/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	10/11/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	11/30/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/1/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/8/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/28/2019	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/29/2019	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/5/2020	High Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	1/17/2020	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	1/17/2020	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/12/2020	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/12/2020	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	4/1/2020	Winter Storm		0	0	$0.00	$0.00
AYR	6/7/2020	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
LYNCHBURG	6/7/2020	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
HARWOOD	6/7/2020	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/7/2020	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/7/2020	Thunderstorm Wind	71 mph	0	0	$0.00	$0.00
HORACE	6/7/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CHAFFEE	6/7/2020	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
LYNCHBURG	6/7/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
LYNCHBURG	6/7/2020	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
NEWMAN	6/7/2020	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
PROSPER	6/7/2020	Thunderstorm Wind	79 mph	0	0	$0.00	$0.00
ARTHUR	6/7/2020	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
ARGUSVILLE	6/7/2020	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
GRANDIN	6/7/2020	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
TOWER CITY	6/17/2020	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
NOLAN	6/17/2020	Hail	1.5 in.	0	0	$0.00	$0.00
ABSARAKA	6/17/2020	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	Date	Type	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
ERIE	6/17/2020	Hail	1 in.	0	0	$0.00	$0.00
ERIE	6/18/2020	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
HUNTER	7/6/2020	Hail	1 in.	0	0	$0.00	$0.00
LEONARD	7/8/2020	Hail	1 in.	0	0	$0.00	$0.00
ALICE	7/8/2020	Hail	1 in.	0	0	$0.00	$0.00
AMENIA ARPT	7/8/2020	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
COTTER	7/8/2020	Hail	1 in.	0	0	$0.00	$0.00
COTTER	7/8/2020	Heavy Rain		0	0	$0.00	$0.00
HUNTER	7/17/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
DAVENPRORT	7/17/2020	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
CASSELTON	7/17/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	7/24/2020	Excessive Heat		0	0	$0.00	$0.00
ARGUSVILLE	7/24/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
COTTER	7/24/2020	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
MASON	8/9/2020	Hail	1 in.	0	0	$0.00	$0.00
HARWOOD	8/9/2020	Hail	0.88 in.	0	0	$0.00	$0.00
RIVERSIDE	8/14/2020	Hail	1.5 in.	0	0	$0.00	$0.00
FARGO	8/14/2020	Hail	1 in.	0	0	$0.00	$0.00
AMENIA ARPT	8/14/2020	Hail	1.75 in.	0	0	$0.00	$0.00
GARDNER	8/14/2020	Hail	1.25 in.	0	0	$0.00	$0.00
ST BENEDICT	8/14/2020	Thunderstorm Wind	90 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	8/14/2020	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/23/2020	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/11/2021	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	3/29/2021	High Wind	63 mph	0	0	$0.00	$0.00
CASS (ZONE)	5/28/2021	Frost/Freeze		0	0	$0.00	$0.00
DAVENPRORT	6/7/2021	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
ELIZABETH	6/7/2021	Tornado		0	0	$0.00	$0.00
ALICE	6/7/2021	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
LYNCHBURG	6/7/2021	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
LYNCHBURG	6/7/2021	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
DAVENPRORT	6/7/2021	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
WARREN	6/7/2021	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
HORACE	6/7/2021	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
OSGOOD	6/7/2021	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
OSGOOD	6/7/2021	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
HICKSON	6/7/2021	Thunderstorm Wind	81 mph	0	0	$0.00	$0.00
HORACE	6/7/2021	Thunderstorm Wind	72 mph	0	0	$0.00	$0.00
COTTER	6/7/2021	Hail	0.75 in.	0	0	$0.00	$0.00
HORACE	6/7/2021	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
KINDRED	6/7/2021	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
AYR	6/11/2021	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
ARGUSVILLE	6/11/2021	Hail	1.25 in.	0	0	$0.00	$0.00
FARGO	6/11/2021	Hail	1 in.	0	0	$0.00	$0.00
FARGO	7/19/2021	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00
CASSELTON	7/19/2021	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
ERIE JCT	8/20/2021	Tornado		0	0	$0.00	$1,000.00
AYR	8/24/2021	Thunderstorm Wind	68 mph	0	0	$0.00	$0.00
AYR	8/24/2021	Thunderstorm Wind	71 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/12/2021	High Wind	59 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/4/2021	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/5/2021	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/16/2021	High Wind	60 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/26/2021	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/27/2021	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	12/29/2021	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/31/2021	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/4/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/6/2022	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/18/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/19/2022	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	1/25/2022	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/1/2022	Blizzard		0	0	$0.00	$0.00

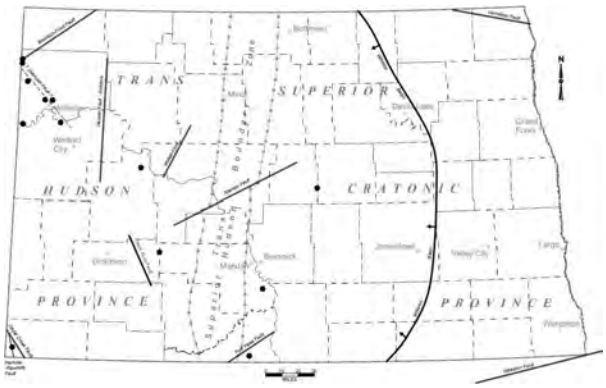
Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASS (ZONE)	2/2/2022	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/2/2022	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/4/2022	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/10/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/17/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/20/2022	Winter Storm		0	0	$0.00	$0.00
CASS (ZONE)	2/21/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/22/2022	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	4/17/2022	Heavy Snow		0	0	$0.00	$0.00
HORACE	4/23/2022	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
GARDNER	4/23/2022	Thunderstorm Wind	63 mph	0	0	$0.00	$0.00
GARDNER	4/23/2022	Hail	1 in.	0	0	$0.00	$0.00
CASS (ZONE)	5/13/2022	High Wind	58 mph	0	0	$0.00	$0.00
LYNCHBURG	6/20/2022	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
BUFFALO	6/20/2022	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
FIFE	6/20/2022	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
HORACE	6/20/2022	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
ST BENEDICT	6/20/2022	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/20/2022	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
HUNTER	6/24/2022	Hail	1 in.	0	0	$0.00	$0.00
FARGO	6/24/2022	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
LYNCHBURG	6/29/2022	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	6/29/2022	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
AYR	7/10/2022	Thunderstorm Wind	62 mph	0	0	$0.00	$0.00
NEWMAN	7/10/2022	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	7/10/2022	Thunderstorm Wind	59 mph	0	0	$0.00	$0.00
TOWER CITY	7/10/2022	Hail	1 in.	0	0	$0.00	$0.00
RIVERSIDE	7/10/2022	Hail	0.88 in.	0	0	$0.00	$0.00
COTTER	7/10/2022	Hail	1 in.	0	0	$0.00	$0.00
ADDISON	7/10/2022	Hail	1 in.	0	0	$0.00	$0.00
HORACE	7/10/2022	Hail	1 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
HUNTER	7/15/2022	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
GRANDIN	7/15/2022	Heavy Rain		0	0	$0.00	$0.00
FARGO	7/15/2022	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
KINDRED	7/15/2022	Hail	1 in.	0	0	$0.00	$0.00
MAGNOLIA	7/21/2022	Hail	1 in.	0	0	$0.00	$0.00
HICKSON	8/5/2022	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/1/2022	Drought		0	0	$0.00	$0.00
CASS (ZONE)	11/6/2022	High Wind	62 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/6/2022	High Wind	63 mph	0	0	$0.00	$0.00
CASS (ZONE)	11/11/2022	Strong Wind	41 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/1/2022	Drought		0	0	$0.00	$0.00
CASS (ZONE)	12/13/2022	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/13/2022	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	12/22/2022	Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	12/23/2022	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	1/1/2023	Drought		0	0	$0.00	$0.00
CASS (ZONE)	1/30/2023	Extreme Cold/Wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	2/14/2023	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/14/2023	High Wind	58 mph	0	0	$0.00	$0.00
CASS (ZONE)	2/14/2023	High Wind	66 mph	0	0	$0.00	$0.00
CASS (ZONE)	2/14/2023	High Wind	62 mph	0	0	$0.00	$0.00
CASS (ZONE)	2/23/2023	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	2/28/2023	Winter Weather		0	0	$0.00	$0.00
CASS (ZONE)	2/28/2023	Winter Weather		0	0	$0.00	$0.00
CASS (ZONE)	3/1/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/11/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/11/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/21/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	3/21/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	4/4/2023	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	4/4/2023	Heavy Snow		0	0	$0.00	$0.00
FARGO	4/16/2023	Flood		0	0	$951,000.00	$0.00
NORPARK	4/17/2023	Flood		0	0	$951,000.00	$0.00
HARWOOD	4/19/2023	Flood		0	0	$951,000.00	$0.00
KINDRED	4/20/2023	Flood		0	0	$951,000.00	$0.00
WEST FARGO	4/20/2023	Flood		0	0	$951,000.00	$0.00
FARGO	5/1/2023	Flood		0	0	$0.00	$0.00
HARWOOD	5/1/2023	Flood		0	0	$0.00	$0.00
WEST FARGO	5/1/2023	Flood		0	0	$0.00	$0.00
OSGOOD	6/1/2023	Thunderstorm Wind	64 mph	0	0	$0.00	$0.00
LANGERS	6/2/2023	Thunderstorm Wind	70 mph	0	0	$0.00	$0.00
ARGUSVILLE	6/7/2023	Hail	1.75 in.	0	0	$0.00	$0.00

Cass County Hazard Events, 1996-2024							
Location	**Date**	**Type**	**Magnitude**	**Deaths**	**Injuries**	**Property Damage**	**Crop Damage**
CASSELTON	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
PAGE	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
MAPLETON	7/13/2023	Hail	2 in.	0	0	$0.00	$0.00
MAPLETON	7/13/2023	Hail	2 in.	0	0	$0.00	$0.00
OSGOOD	7/13/2023	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
WEST FARGO	7/13/2023	Hail	1.5 in.	0	0	$0.00	$0.00
FARGO	7/13/2023	Hail	1.25 in.	0	0	$0.00	$0.00
COTTER	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
BUFFALO	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
CASSELTON	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
COTTER	7/13/2023	Hail	1 in.	0	0	$0.00	$0.00
(FAR)HECTOR INTL ARP	8/5/2023	Flash Flood		0	0	$0.00	$0.00
COTTER	8/5/2023	Flash Flood		0	0	$0.00	$0.00
CASS (ZONE)	12/09/2023	High Wind	61 mph	0	0	$0.00	$0.00
CASS (ZONE)	12/25/2023	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/25/2023	Ice Storm		0	0	$0.00	$0.00
CASS (ZONE)	12/25/2023	Ice Storm		0	0	$0.00	$0.00
Fargo	12/26/2023	Flood		0	0	$0.00	$0.00
CASS (ZONE)	01/13/2024	Extreme Cold/wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	01/14/2024	Extreme Cold/wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	01/14/2024	Extreme Cold/wind Chill		0	0	$0.00	$0.00
CASS (ZONE)	02/26/2024	Heavy Snow		0	0	$0.00	$0.00
CASS (ZONE)	02/27/2024	Blizzard		0	0	$0.00	$0.00
CASS (ZONE)	02/27/2024	High Wind	59 mph			$0.00	$0.00
CASS (ZONE)	02/27/2024	High Wind	60 mph			$0.00	$0.00
Page	05/16/2024	Hail	1.00 in.	0	0	$0.00	$0.00
Garnder	05/21/2024	Flood		0	0	$500.00	$500.00
Davenport	05/23/2024	Funnel Cloud		0	0	$0.00	$0.00
Kindred	05/23/2024	Funnel Cloud		0	0	$0.00	$0.00
Alice	07/15/2024	Thunderstorm Wind	58 mph	0	0	$0.00	$0.00
Leonard	07/15/2024	Thunderstorm Wind	60 mph	0	0	$0.00	$0.00
(FAR) Hector Intl Arp	07/29/2024	Thunderstorm Wind	61 mph	0	0	$0.00	$0.00

Geologic Hazards

Chapter 3 summarizes general threat of geologic hazards in Cass County. The risk of an earthquake capable of causing significant damage is slight, but there have been earthquakes in recent ND history. The map below illustrates the major faults and tectonic boundaries along with earthquakes that could have occurred in North Dakota.



The following excerpt and chart from an article written by Fred J. Anderson and titled *Earthquake Hazards and Probabilities in North Dakota and the Magnitude 9.0 Indonesian Earthquake of December 26, 2004* in the NDGS Newsletter summarizes the risk:

Previous Earthquakes in North Dakota

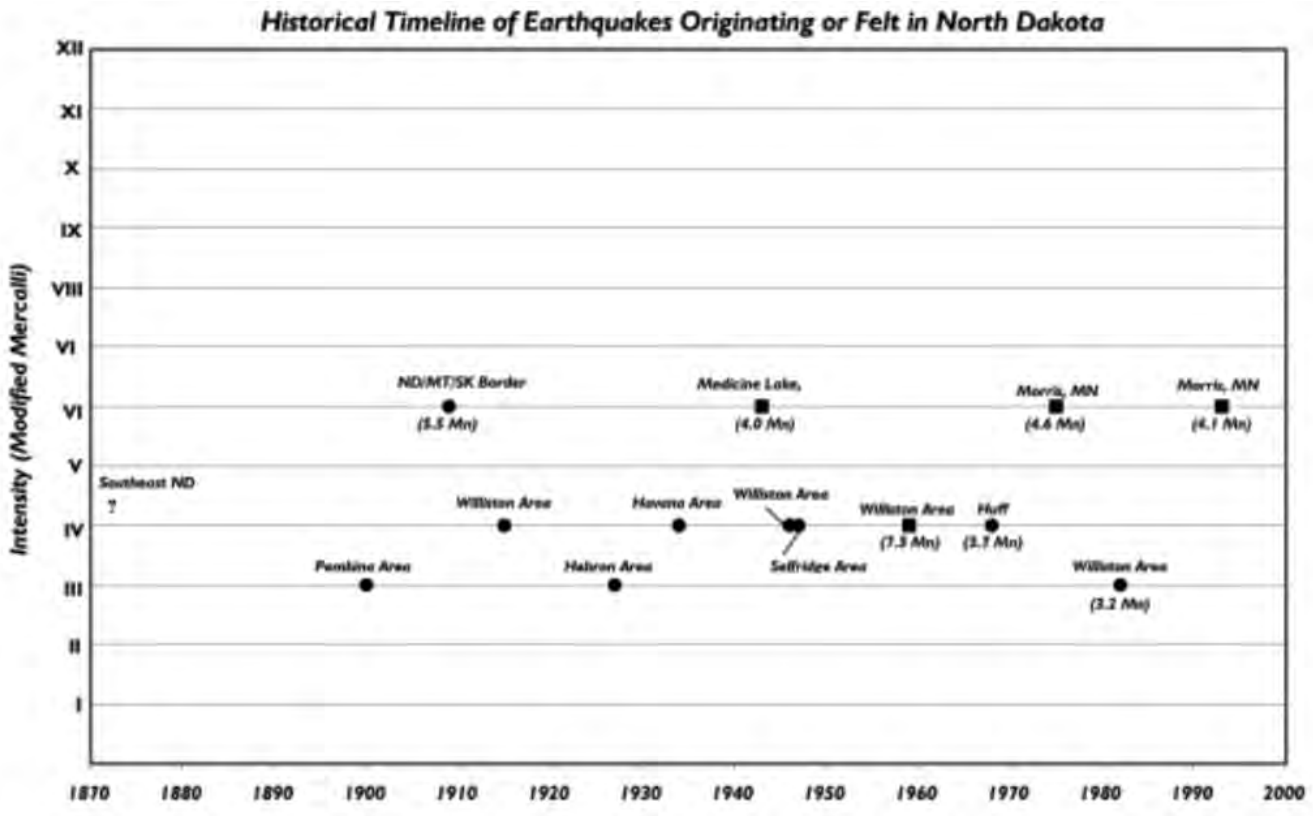
The first instrumentally verified earthquake in the state was recorded on July 8, 1968 in the vicinity of Huff, North Dakota, just south of the Bismarck-Mandan area. This earthquake has been recorded as a Richter magnitude 3.7 event. Several other earthquakes have been felt within the state beginning as far back as October 9, 1872 (See Historical Timeline of Earthquakes Originating or Felt in North Dakota chart below). As of this writing a total of nine earthquakes have been determined to have occurred within the state and five additional earthquakes were recorded to have been felt within the state although they did not originate within state boundaries (Biek, 1997).....It is interesting to note that based on this historical record, an earthquake, either originating within the state or being felt within the state, occurs, on an average, of approximately once per decade.

North Dakota Seismic Hazards

..... how North Dakota compares to the rest of the U.S., on the matter of seismic hazard. From a seismological perspective we can look at this in a couple of different ways.

One way to evaluate the seismic hazard of a particular area is to consider what the probability would be that an earthquake of a given magnitude would occur at a particular location of interest during a specified period of time. If one were to consider what the probabilities of an earthquake of magnitude 5.0 or greater (earthquakes of magnitude 5.0 or greater are generally considered to be of a destructive character) occurring within the next 1000 years (roughly 14 lifetimes) at a range of 50 km (around 31 miles) from each major North Dakota city we would find a less than 10 percent chance of experiencing this kind of an earthquake within the next 1000 years.....The city of Williston has the highest probability. This is due to [its] location to preexisting, deeply buried fault structures at the northwestern and southeastern boundaries of the state and on the configuration of the Precambrian basement rocks, previously summarized as related to earthquakes in North Dakota by Bluemle (1989).

Another way to characterize seismic risk is by way of ground acceleration presented as ground shaking hazard, which is the rate of horizontal ground motion for a particular area calculated from the frequency and number of previous earthquakes of various magnitudes and currently available information on fault-slip rates. Compared to the rest of the U.S., North Dakota is well within the area with the lowest potential ground shaking hazard of 0-2% g (when an earthquake occurs the forces caused by ground shaking can be measured and expressed as a percentage of g or the force of gravity at the surface of the earth).


Historical Timeline of Earthquakes Originating or Felt in North Dakota
Intensity (Modified Mercalli)
XII
XI
X
IX
VIII
VI
VI
V
IV
III
II
I
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
Southeast ND
?
ND/MT/SK Border
(5.5 Mn)
Medicine Lake,
(4.0 Mn)
Morris, MN
(4.6 Mn)
Morris, MN
(4.1 Mn)
Williston Area
Havana Area
Williston Area
Williston Area
(7.5 Mn)
Huff
(3.7 Mn)
Pembina Area
Halvon Area
Selfridge Area
Williston Area
(3.2 Mn)

Appendix D: Mitigation Action Determination

Hazards needing priority mitigation were discussed at each community meeting and with planning team members. Mitigation action items were developed with multiple activities:

- Goals and a hierarchy of needs were reviewed by the planning team
- Hazards to include in this plan were identified and defined by the planning team.
- Previous plan action items, THIRA, community surveys and input, IPP meetings and AFN feedback were used to develop a list of potential mitigation action items
- Consultant provided a list of potential mitigation actions
- Emergency managers and consultant reviewed and refined potential action items.
- Final mitigation action items were updated on the basis of additional community input.

Project Prioritization Hierarchy of Needs

In general, the prioritization process for the hazard mitigation actions identified in Chapter 4 was based on two key factors: How significant was the issue needing to be addressed and how likely is the action to be implemented. In some cases, even though it is unlikely to be implemented without grant funds, it is still listed as a high priority action. Significance was partly determined by the following hierarchy of needs:

1. Life/Safety – protecting the lives and ensuring the safety of people is the highest priority
2. Emergency Response Capability – maintaining the capacity of local emergency responders is the second highest priority
3. Critical Facilities Protection – protecting the structure and functionality of critical facilities is the third highest priority
4. Property Protection – protecting existing structures and property, which represent the wealth and means to livelihood, from hazards is the fourth highest priority
5. Future Development/Economic Capacity – the final priority is to maintain capacity for current business and economic activity, as well as protecting the potential for future development activity.

Past Mitigation Action Status

The table on the following pages summarizes the status of the mitigation action items from the 2019 Cass County MHMP. There were 186 separate mitigation actions for Cass County and its participating jurisdictions in the last Plan. Twenty-four actions were completed. Thirty-four actions are ongoing and have been incorporated into this plan, although some have been modified to address current needs. Nine actions were no longer considered appropriate or attainable and were dropped from the plan. One hundred nineteen additional actions were retained in some form in this plan.

A DES/FEMA comment in the Plan Review Tool indicated that the requirement to describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms. Thirty-two of these actions can be construed as being implemented by planning mechanisms:

- Planning and regulation – 8 actions
- Education and outreach – 12 actions
- Administrative and technical – 3 actions
- Financial – 12 actions

Note: Three actions overlapped both the financial and planning & regulatory categories, so the three actions appear both counts.

Of these thirty-two actions, four of the action items were completed since the last plan, eleven actions are still ongoing, and seventeen are retained.

For the planning mechanism, planning and regulatory, there were eight retained actions from the last plan that center on refining ordinances, improving infrastructure systems, and adopting sustainable development practices. The ongoing actions for this type of planning mechanism include securing resources, implementing flood mitigation, and enhancing sustainability

measures. As for the completed actions for planning and regulatory actions, these actions accomplished regulatory actions focused on preventing risky development and stabilizing critical areas.

There is one education and outreach planning mechanism action that was retained it encourages the innovative practice of rainwater retention to address stormwater issues. The two ongoing actions for this category of planning mechanism highlight ongoing public education, outreach, and assistance efforts to mitigate risks at the household level.

The five retained administrative and technical actions focused on proactive measures such as promoting hazard specific programs, addressing risks to infrastructure, and utilizing advanced assessment tools. The administrative and technical actions that are ongoing emphasize community resilience through hazard-proofing critical facilities, addressing erosion, and supporting vulnerable populations. There were no completed actions for this type of planning mechanism.

The final category of planning mechanism, financial, had five retained actions that support long term investments in infrastructure, property acquisition, and fire protection. The three ongoing actions that are considered financial continue efforts to reduce risks through property acquisition and permanent flood protection measures. Since the last plan, three financial actions that can be integrated into planning involve upgrades to critical systems and infrastructure.

Table D.1 - Cass County Previous MHMP Mitigation Action Item Status

Jurisdiction	Mitigation Action	Complete	Ongoing	Retained	Dropped
Cass County	Assist cities and townships with the process of entering the Community Rating System program			X	
Cass County	Engage in public education efforts that will increase awareness of natural hazards, and the steps people can take to mitigate their own risks		X		
Cass County	Build permanent levy structures			X	
Cass County	Build ring dike around Sheldon Subdivision		X		
Cass County	Construct dry impoundments in Minnie Lake Township and Ellsbury Township (Barnes County)				X
Cass County	Increase greenway buffer zone		X		
Cass County	Increase protective measures for residences (reworded in updated plan)			X	
Cass County	Acquisition of flood-prone properties		X		
Cass County	Create permanent access in and out of flood-prone areas		X		
Cass County	Road washout mitigation		X		
Cass County	Retention projects that support the Red River Basin Commission (RRBC) goals for flood protection (reworded for last plan)			X	
Cass County	Elevate bridge structures			X	
Cass County	Protection of bridge structures			X	
Cass County	Secure permanent and long-term alternative source of water		X		
Cass County	Property acquisition in landslide prone areas		X		
Cass County	Snag and clear rivers		X		
Cass County	Drain channel improvements throughout the county			X	
Cass County	Review model zoning ordinance offered to townships and adjust as needed to reflect			X	

	best practices in the avoidance of development in risky areas				
Cass County	Develop regulations preventing development from occurring in areas prone to soil stability problems, preventing land uses accelerating the inherent problem, and protecting the riverfront vegetation that helps stabilize soils.	X			
Cass County	Consider the cost and benefits of the County participating in the National Fire Protection Association's Firewise USA program.			X	
Cass County	Conduct repairs to the principal spillways at the Elm River and Maple River dams and upgrade spillway capacity at Swan Buffalo Detention Dam.			X	
Alice	Installation of warning sirens			X	
Alice	Install emergency generator at fire hall			X	
Alice	Procure weather radios for residents and fire hall			X	
Amenia	Build dike to protect against the Rush River		X		
Amenia	Installation of storm sewer and a storm sewer lift stations		X		
Argusville	Installation of warning sirens		X		
Argusville	Build storm shelter		X		
Argusville	Generator for the two lift stations' backup pumps		X		
Argusville	Ensure community center/fire hall is able to withstand natural hazards		X		
Argusville	Assist households with vulnerable individuals in carrying out mitigation actions on their own properties		X		
Argusville	Upgrade culverts that are not draining properly in storm events		X		
Argusville	Raise and certify the levee around Richwood Estates/Leonards Way		X		
Argusville	Install backup generator for the water pump at the reservoir		X		
Arthur	Installation of warning sirens			X	
Arthur	Create a new legal drain to move water north of City limits			X	
Arthur	Install a backup generator at lift stations			X	
Ayr	Installation of warning sirens			X	
Ayr	Dredging ditches and replacing 4 culverts in town	X			
Briarwood	Address erosion caused by overland flooding		X		
Buffalo	Upgrade lift station			X	
Buffalo	Purchase tractor for city's PTO generator	X			
Buffalo	Installation of a backup generator at the lift station			X	
Buffalo	Installation of backup generator at community center			X	

Buffalo	Building a storm shelter	X			
Casselton	Raising levee on north side of town			X	
Davenport	Installation of warning sirens			X	
Davenport	Improvements to city's drainage system			X	
Davenport	Install permanent flood protection		X		
Davenport	Install permanent backup generator for the community center			X	
Fargo	Install failsafe traffic signals, street lighting and message boards along designated emergency routes			X	
Fargo	Remove structures from slough and cutbank areas along Red River			X	
Fargo	Execute Fargo's Revised Comprehensive Flood Mitigation Plan		X		
Fargo	Bury electrical power and communication lines			X	
Fargo	Elevate, floodproof or fill basements of residential structures in the Special Flood Hazard Area			X	
Fargo	Floodplain storage area in select locations citywide (250-acre footprint or larger)			X	
Fargo	Storm water retention ponds in select locations citywide			X	
Fargo	Install relief storm sewer in select locations citywide			X	
Fargo	Install permanent generator at STS LS #8 (Drain 10: 32nd Street south of Main Avenue)			X	
Fargo	Install permanent generator at STS LS #9 (Drain 40: 45th Street at Main Avenue)			X	
Fargo	Install permanent generator at STS LS #16 (Drain 10 south of 2nd Avenue South)			X	
Fargo	Install permanent generator at STS LS #21 (Drain 3: West of 18th Street and north of 12th Avenue North)			X	
Fargo	Install permanent generator at STS LS #33 (East of Dakota Drive on 19th Avenue North)			X	
Fargo	Install permanent generator at STS LS #50 (45th Street South of 3rd Avenue North)			X	
Fargo	Raise gatewell and install permanent generator at STS LS #1 (2nd Street South at Main Avenue)			X	
Fargo	Install permanent generator at STS LS #3 (25th Street at Main Avenue)			X	
Fargo	Install permanent generator at STS LS #6 (45th Street at 19th Avenue North)			X	
Fargo	Install permanent generator at STS LS #11 Trollwood (east lift)			X	
Fargo	Install permanent generator at STS LS #14 (West of 25th Street at 26th Avenue South)			X	

Fargo	Relocate lift station and install permanent generator at STS LS #15 (East of 9th Street at 26th Avenue South – Country Club)	X			
Fargo	Install permanent generator at STS LS #17 (University Drive at Main Avenue)	X			
Fargo	Install permanent generator at STS LS #20 (Island Park)			X	
Fargo	Upgrade to duplex pumping station for redundancy and install permanent generator at STS LS #24 (Wastewater treatment plant)	X			
Fargo	Install permanent generator at STS LS #26 (Ridgewood Addition)			X	
Fargo	Relocate lift station at STS LS #30 (Milwaukee bike trail south of 40th Avenue)	X			
Fargo	Install permanent generator at STS LS #34 (West of Elm Street on Forest Avenue)			X	
Fargo	Install permanent generator at STS LS #35 (Cass County Drain 10 south of 6th Avenue South)			X	
Fargo	Relocate lift station and install permanent generator at STS LS #39 (VA Hospital)	X			
Fargo	Relocate lift station and install permanent generator at STS LS #40 (East of Eagle Street on 32nd Avenue North)		X		
Fargo	Raise gatewell at STS LS #41 (10th Street North – 3700 Block)		X		
Fargo	Relocate lift station and install permanent generator at STS LS #42 (5th Street South at 21st Avenue South)		X		
Fargo	Relocate lift station and install permanent generator at STS LS #43 (West side of University Drive at Rose Coulee)	X			
Fargo	Elevate lift station cover slab, pump and control panel at STS LS #47 (38th Street south of Cass County Drain 27)	X			
	Raise gatewell at STS LS #48 (38th Street nor th of Cass County Drain 27)	X			
Fargo	Raise gatewell and install permanent generator at STS LS #49 (45th Street north of Cass County Drain 27)			X	
Fargo	Raise lift station at STS LS #52 (East of Broadway at Kandi Lane)			X	
Fargo	Install permanent generator at STS LS #53 (Drain 10 at 40th Avenue North- CC20)			X	
Fargo	Raisse gatewell and install permanent generator at STS LS #54 (36th Street north of 40th Avenue South)			X	
Fargo	Raise gatewell and install permanent generator at STS LS #55 (42nd Street north of Cass County Drain 27)			X	

Fargo	Raise lift station and install permanent generator at STS LS #56 (42nd Street south of Cass Country Drain 27)			X	
Fargo	Raise lift station and install permanent generator at STS LS #57 (Trollwood -west lift)			X	
Fargo	Raise lift station at STS LS #58 (University Drive at 64th Avenue South)		X		
Fargo	Install permanent generator at STS LS #59 (36th Street at 9th Avenue South)			X	
Fargo	Raise lift station and install permanent generator at STS LS #61 (East side of 5th Street at 18th Avenue South)			X	
Fargo	Raise lift station and install permanent generator at STS LS #67 (Osgood lift station – east side Cass County Drain 27)			X	
Fargo	Raise lift station and install permanent generator at STS LS #68 (Osgood lift station – west side Cass County Drain 27)			X	
Fargo	Raise lift station and install permanent generator at STS LS #70 (35th Street south of Cass County Drain 27)			X	
Fargo	Raise lift station and install permanent generator STS LS #71 (Cass County Drain 53 at 52nd Avenue South)			X	
Fargo	Install permanent generator at STS LS #75 (2nd Street North at 15th Avenue)			X	
Fargo	Emergency generator for lift station #58			X	
Fargo	Emergency generators for wastewater treatment plant	X			
Fargo	Effluent force main improvements		X		
Fargo	Storm Lift Station Upgrade – Wastewater Treatment Plan	X			
Fargo	Emergency standby generator at Sheyenne River Pump Station			X	
Fargo	Relocation of the Sheyenne River Pump Station			X	
Fargo	Emergency standby generator at Red River Pump Station				X
Fargo	Emergency Standby Generator at High Service Pump Station	X			
Fargo	Electric Actuated Valve for Water Source	X			
Fargo	Expand dry chemical storage capacity	X			
Fargo	Permanent floodwalls at High Service Pump Station	X			
Fargo	Red River Pump Station flood prevention and flood wall construction	X			
Fargo	Permanent levee for Wastewater Treatment Plant		X		
Fargo	Relocation of Red River Intake Screens			X	

Fargo	Emergency Water Supply Line Improvements			X	
Fargo	Encourage rooftop retention on building and parking garages in downtown Fargo			X	
Fargo	Retain rainwater on street through green infrastructure methods			X	
Fargo	Increase tree canopy coverage downtown to reduce urban heat island effect			X	
Fargo	Support the establishment of a resource center for homeless individuals		X		
Fargo	Install permanent generator at STS LS #15 (Cass County Drain 10 south of 2nd Avenue South)	X			
Frontier	Installation of warning sirens			X	
Frontier	Upgrade storm sewer system			X	
Frontier	Create permanent flood protection around the City			X	
Gardner	Installation of generators at the water station and sanitary sewer lift station	X			
Garnder	Drainage improvement project			X	
Grandin	Replace ditch system with storm sewer			X	
Grandin	Address abandoned buildings			X	
Harwood	Increase permanent flood protection throughout Harwood		X		
Harwood	Install backup power generators at lift station			X	
Harwood	Install backup power generator at fire hall	X			
Horace	Enhance existing storm sewer and lift station capacity			X	
Hunter	Installation of generators at the water pump house and sanitary sewer lift station			X	
Hunter	Dredging ditches and replacing culverts in town			X	
Hunter	Upgrade the spillway capacity of the Hunter Dam to modern standards			X	
Kindred	Build a new levee on the south of Highway 46			X	
Kindred	Stabilize the slope south of Highway 46 along the bank of the Sheyenne River			X	
Kindred	Backup generators for three lift stations			X	
Kindred	Install storm sewer system and lift station in the original townsite			X	
Leonard	Improve drainage by installing pump station to move water to legal drain approximately 1 mile south			X	
Leonard	Permanent backup generator for lift station			X	
Leonard	Tear down dilapidated structure located on Railroad Avenue			X	
Leonard	Harden the city shop to better withstand natural hazards			X	
Leonard	Install new or upgrade existing culverts			X	

Mapleton	Permanent backup generators for lift stations			X	
Mapleton	Build levee to protect the southeast industrial area		X		
Mapleton	Storm sewer improvements along Maple Drive			X	
Mapleton	Storm sewer improvements in I-94 Industrial Park		X		
Mapleton	Improve drainage in the Prairie View Estates neighborhood			X	
North River	Perform dike maintenance and repair			X	
North River	Install living snow fence along County Road 31				X
North River	Purchase new pump			X	
Oxbow	Relocate lift station	X			
Oxbow	Installation of backup power generator	X			
Page	Additional storm sewer installation and new lift station			X	
Page	Installation of warning sirens			X	
Prairie Rose	Increase capacity of ditches and culverts			X	
Prairie Rose	Installation of warning sirens			X	
Reile's Acres	Increase permanent flood protection from the Red River		X		
Reile's Acres	Purchase and install backup power generators for three pump stations			X	
Reile's Acres	Install warning sire on north side of the city			X	
Reile's Acres	Purchase and install an ICC 500 compliant storm shelter at the new public park in the north side of city			X	
Reile's Acres	Improve the city's fire protection capabilities by installing infrastructure that will increase the pressure of the water lines to accommodate fire hydrants or a pumper truck			X	
Tower City	Installation of warning sirens			X	
Tower City	Backup generators for sanitary lift station			X	
Tower City	Procure weather radios for residents and the fire hall			X	
West Fargo	Inventory of Riverbank semiannually, LIDAR, plus physical observation assessments with video imagining on river and geospatial (drones)			X	
West Fargo	Replace storm sewer outfalls along Sheyenne River and rehabilitate storm force-main and stabilize riverbank at locations			X	
West Fargo	Acquire and remove around residential homes along the Sheyenne River followed by stabilization of the riverbank and restoration of green space.			X	

West Fargo	Acquire and demolish structures where bank stabilization is not feasible restore to greenspace.			X	
West Fargo	Riverbank stabilization by Main Avenue Self Storage		X		
West Fargo	Assess design and implement slope stabilization outreach			X	
West Fargo	Address land subsidence along Center Street by stabilizing the riverbank			X	
West Fargo	Assess and remove sediment in retention ponds and review and implement a city policy on stormwater retention ponds maintenance			X	
West Fargo	Restore all dike tops (outside and inside including tieback levees) by grading compaction and seeding				X
West Fargo	Amend landscape ordinances that encourage the use of xeriscaping and plants native to the region		X		
West Fargo	Upgrade lift stations by installing onsite permanent generators, purchasing dedicated portable generators, and design lift stations with pads for installation of generators or pads for portable generator access			X	
West Fargo	Enroll West Fargo in the Community Rating System by implementing methods of educating the public with useful maps and introducing potential flood damage reduction methods				X
West Fargo	Evaluate river stabilization techniques and potentially remove residential homes in the Riverside and Chateau area				X
West Fargo	Review, evaluate, update master plans and neighborhood plans for opportunities to mitigate all hazards harden infrastructure			X	
West Fargo	Implement a barrier at the lights parking ramp that addresses public safety concerns for self-harm and targeted mas casualty opportunities.			X	
West Fargo	Evaluate and install stationary license plate readers at strategic locations (points of entry) and system to alert locations for LE to track and address individuals and persons of interest			X	
West Fargo	Recording devices and systems for the metro area cameras that are installed and can be monitored in real time			X	
West Fargo	Metro wide training for mobile field force and arrest teams so that all jurisdictions are trained together and in the same exact ways			X	

	so they can function together as one large force intermingled jurisdictions				
West Fargo	Evaluate, assess and install a lift station along with upgrading infrastructure in downtown core area to address poor drainage and back pressure against the storm water system from the river. Purchasing of property for local retention			X	
West Fargo	Redundant lift stations to all that are single point transference of Sanitary Sewer, specifically SA 40 and SA 27			X	

D.2 Hazard Specific Action Items Hazards Per Jurisdiction						
	Drought	Flood	Geologic	Severe Summer Weather	Severe Winter Weather	Wildland Fire
Alice	34, 36, 40	34, 36, 39, 40	34, 36, 40	33, 34, 35, 36, 37, 38, 39, 40	34, 35, 36, 37, 39, 40	34, 36, 40
Amenia	43	41, 42, 43, 45	43	43, 44, 45	43, 44, 45	43
Argusville	50, 54	48, 49, 50, 51, 52, 53, 54	49, 50, 54	46, 47, 49, 50, 51,53, 54, 55	49, 50, 53, 54, 55	49, 50, 54
Arthur	59	57, 58, 59	59	56, 59, 60	59, 60	59, 61
Ayr	63, 65	63, 65	63, 65	62, 63, 64, 65	63, 64, 65	63, 65
Briarwood	66, 68	66, 68	66, 68	66, 67, 68	66, 67, 68	66, 68
Buffalo	71, 72	69, 71, 72	71, 72	70, 71, 72, 73	71, 72, 73	71, 72
Casselton	79, 80	74, 75, 76, 79, 80, 81	79, 80, 81	77, 79, 80, 81	77, 79, 80, 81	78, 79, 80, 81
Davenport	86	83, 84, 86	86	82, 83, 85, 86	85, 86	86

D.2 Hazard Specific Action Items Hazards Per Jurisdiction						
	Drought	Flood	Geologic	Severe Summer Weather	Severe Winter Weather	Wildland Fire
Fargo	138, 139, 144, 146	91, 82, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 144, 146	91, 144, 146,	90, 93, 140, 141, 142, 143, 144, 146	90, 93, 143, 144, 146	144, 146
Frontier	150	148, 149, 150	150	147, 150, 151	150, 151	150
Gardner	154	152, 153, 154, 155	154	154, 156	154, 156	154
Grandin	159	157, 159	159	159	159	159
Harwood	161, 162, 165, 166	190, 161, 162, 164, 165, 166, 167	161, 162, 165, 166	161, 162, 163, 164, 165, 166, 167	161, 162, 163, 164, 165, 166, 167	161, 162, 164, 165, 166
Horace	169, 171, 172	198, 169, 171, 172	169, 171, 172	169, 170, 171, 172	169, 170, 171, 172	169, 171, 172
Hunter	174, 176, 177	174, 175, 176, 177	174,176, 177	174, 176, 177, 178	174, 176, 177, 178	174, 176, 177
Kindred	183	179, 181, 182, 183	183	183	183	183

D.2 Hazard Specific Action Items Hazards Per Jurisdiction						
	Drought	Flood	Geologic	Severe Summer Weather	Severe Winter Weather	Wildland Fire
Leonard	190	184, 185, 187, 188, 189, 190	187, 190	187, 189, 190, 191	187, 189, 190, 191	187, 190
Mapleton	197	192, 193, 194, 195, 196, 197	197	197, 198	197, 198	197
North River	201, 203	199, 200, 201, 203	201, 203	201, 202, 203	201, 202, 203	201, 203
Oxbow	204	204	204	204, 205	204, 205	204
Page	208	206, 208	208	207, 208, 209	208, 209	208,
Prairie Rose	212, 214	210, 212, 214	212, 214	211, 212, 213, 214	212, 213, 214	212, 214
Reile's Acres	218, 220	215, 216, 218, 220	218, 220	217, 218, 220, 221	218, 220, 221	218, 220
Tower City	225	223, 225, 226	225	222, 224, 255, 226, 227	225, 226, 227	225, 226
West Fargo	237, 239, 247, 248	236, 238, 239, 245, 246, 247, 248	229, 230, 231, 232, 233, 234, 235, 239, 248	239, 244, 248	239, 248	239, 248
Cass County	2,13, 20, 22, 24, 25, 30, 32	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 16, 17, 20, 22, 24, 25, 30, 31	2, 5, 14, 20, 22, 24, 25, 30	2, 20, 22, 23, 24, 25, 26, 27, 30, 32	1, 20, 21, 22, 24, 25, 30	2, 18, 20, 22, 24, 25, 26, 30, 32

Appendix E: Monitoring Forms

Worksheet 7.1
Mitigation Action Progress Report Form

Mitigation Action Progress Report Form

Progress Report Period	From Date:	To Date:
Action/Project Title		
Responsible Agency		
Contact Name		
Contact Phone/Email		
Project Status	❑ Project completed ❑ Project canceled ❑ Project on schedule ❑ Anticipated completion date:_____ ❑ Project delayed Explain _____	

Summary of Project Progress for this Report Period

1. What was accomplished for this project during this reporting period?

2. What obstacles, problems, or delays did the project encounter?

3. If uncompleted, is the project still relevant? Should the project be changed or revised?

4. Other comments

Worksheet 7.2
Plan Update Evaluation Worksheet

Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Planning Process	Should new jurisdictions and/or districts be invited to participate in future plan updates?	
	Have any internal or external agencies been invaluable to the mitigation strategy?	
	Can any procedures (e.g., meeting announcements, plan updates) be done differently or more efficiently?	
	Has the Planning Team undertaken any public outreach activities?	
	How can public participation be improved?	
	Have there been any changes in public support and/or decision- maker priorities related to hazard mitigation?	
Capability Assessment	Have jurisdictions adopted new policies, plans, regulations, or reports that could be incorporated into this plan?	
	Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?	
	Are there different or new education and outreach programs and resources available for mitigation activities?	
	Has NFIP participation changed in the participating jurisdictions?	
Risk Assessment	Has a natural and/or technical or human-caused disaster occurred?	
	Should the list of hazards addressed in the plan be modified?	
	Are there new data sources and/or additional maps and studies available? If so, what are they and what have they revealed? Should the information be incorporated into future plan updates?	
	Do any new critical facilities or infrastructure need to be added to the asset lists?	
	Have any changes in development trends occurred that could create additional risks?	
	Are there repetitive losses and/or severe repetitive losses to document?	

Worksheet 7.2
Plan Update Evaluation Worksheet

Plan Section	Considerations	Explanation
Mitigation Strategy	Is the mitigation strategy being implemented as anticipated? Were the cost and timeline estimates accurate?	
	Should new mitigation actions be added to the Action Plan? Should existing mitigation actions be revised or eliminated from the plan?	
	Are there new obstacles that were not anticipated in the plan that will need to be considered in the next plan update?	
	Are there new funding sources to consider?	
	Have elements of the plan been incorporated into other planning mechanisms?	
Plan Maintenance Procedures	Was the plan monitored and evaluated as anticipated?	
	What are needed improvements to the procedures?	

___ Cass County Multi-Hazard Mitigation Plan

Whereas, Horace recognizes the threat that natural, man-made or technological hazards pose to people and property within our community; and

Whereas, undertaking hazard mitigation actions will reduce and/or eliminate the potential for harm to people and property from future hazard occurrences; and

Whereas, an adopted Multi-Hazard Mitigation Plan is required as a condition of future funding for mitigation projects under multiple Federal Emergency Management Agency (FEMA) pre- and post-disaster mitigation grant programs; and

Whereas, Horace participated in the preparation of this plan in accordance with the Disaster Mitigation Act of 2000; and

Whereas, adoption of the Cass County Multi-Hazard Mitigation Plan demonstrates the commitment to hazard mitigation; and

Now, therefore, be it resolved, that Horace adopts the Cass County Multi-Hazard Mitigation Plan pending final approval by the North Dakota Department of Emergency Services and the Federal Emergency Management Agency.

Signed this _____ day of _____, 2025.

Attested: _____
Brenton Holper, City Administrator

Signed: _____
Jeff Trudeau, Mayor

CASS COUNTY GOVERNMENT

Highway Department

Telephone: 701-298-2370
Fax: 701-298-2395

MEMORANDUM

TO: Cass County Commission

FROM: Thomas Soucy, County Engineer

DATE: January 9, 2025

SUBJECT: Agenda Item for January 21st, 2025 Commission Meeting: Request Approval of City of Horace MOU Resolution

---

The City of Horace and Cass County entered into an Memorandum of Understanding (MOU) on March 1st, 2021. This MOU was in relation of the turnover of Cass County 17 from 52nd Ave S to the FM Diversion just north of Cass County 16, and 76th Ave S from 81st St S to 57th St S.

The entered into MOU stated that once the population of the City of Horace surpassed 5,000 people a two year (720 day) turnover clock would start. According to the Census Bureau, the estimated population of the City of Horace exceeded 5,000 as of July 1st, 2023.

This Resolution declares the start of the turnover clock on January 1st, 2025, thus ending and completing the turnover process of the above mentioned county highways on January 1st, 2027.

SUGGESTED MOTION: Resolve to adopt the turnover clock start date and authorize the Commission Chairperson and Finance Director to sign the resolution.

J:\Admin-Eng\Commission Corrsp\2025 Commission Correspondence\Horace MOU Resolution\Agenda Memo Horace MOU Resolution.docx

MEMORANDUM OF UNDERSTANDING REGARDING CASS COUNTY HIGHWAY 6 TO INCLUDING 76TH AVENUE SOUTH FROM 45TH STREET SOUTH TO 81ST STREET SOUTH AND CASS HIGHWAY 17 FROM 52ND AVENUE SOUTH TO CASS 14 (100TH AVENUE SOUTH)

This Memorandum of Understanding ("MOU") is entered into between the City of Horace, a North Dakota municipal corporation whose address is 215 Park Drive East, Horace, North Dakota 58047 ("City" or "Horace"), and Cass County, North Dakota, a North Dakota political subdivision, whose address is 211 9th Street South, Fargo, North Dakota 58103 ("Cass County").

WHEREAS, North Dakota Century Code § 40-05.1-06 and Article 3 of Horace's Home Rule Charter authorizes Horace to enter into contracts; and

WHEREAS, North Dakota Century Code § 11-09.1-05 and Article 2 of Cass County's Home Rule Charter authorizes the Cass County to enter into contracts; and

WHEREAS, Development in Horace and the West Fargo School District has resulted in the need for expanded use of existing Stanley Township roads of 76th Avenue South and 45th Street South. Modifications to the road to accommodate the increased traffic anticipated from such expansion is required and Stanley Township does not have the financial capacity to improve these road segments; and

WHEREAS, Cass County Highway 6 currently continues west of Cass County Highway 17 on 76th Avenue South. Cass County Highway 6 east of Cass County Highway 17 along 52nd Avenue will be turned over to the Cities of Fargo and West Fargo; and

WHEREAS, Cass County will coordinate with Stanley Township to take over control of 76th Avenue from the Horace city limits to 45th Street South and of 45th Street South from 76th to 64th Avenue S. Cass County will coordinate with Horace to take over ownership of 76th Avenue within the Horace city limits. These road segments will be renamed as Cass County Highway 6 ("Cass Highway 6"); and

WHEREAS, City constructed a concrete four lane roadway on 76th Avenue South from the round about on Cass Highway 17 east approximately 2700 feet to just east of 63rd Street.

WHEREAS, City and County wish to enter into this Agreement for the purpose of establishing the parties' responsibilities with respect to 76th Avenue from the Horace city limits at 57th Street South to Cass Highway 17, future transfer of control and operations of Cass Highway 6 west of Cass Highway 17 to 81st Street South and Cass Highway 17 from 52nd Avenue South to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South. To permit the City to exercise a greater level of responsibility and control from along these roadways prior to full transfer of control of the easements or right of way along these County highways. In anticipation of the future growth of Horace above a population of 5,000 residents; and

WHEREAS, County Commission Policy 9.35 "County Highways within Annexed Cities" states that in cities with populations over 5,000, County highways should be targeted to be turned

over to the city within two years. The policy recognizes that segments should be turned over with logical termini and Cass County should work cooperatively with the cities to accomplish an orderly transfer of ownership. This policy supports interim partnership arrangements during transitional periods to provide for logical and efficient delivery of government services; and

NOW THEREFORE, in consideration of the mutual terms, covenants, conditions, and agreements contained herein, it is hereby agreed by and between the parties as follows:

1. Future Turnover Date for Cass Highways 6 and 17. Full turnover of ownership, maintenance, operations, and control of Cass Highway 6 from 57th Street South to 81st Street South and Cass Highway 17 from 52nd Avenue South to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South will occur on the January 1st after two full years (730 days) have passed after the City's population exceeds 5,000.

2. Maintenance, Striping and Signage. The parties agree that Cass County will be responsible for the maintenance, striping and signage until turnover to the City of:

a. 76th Avenue South within the City limits from 57th Street South west to 81st Street South.

b. Cass Highway 17 within the City limits from 52nd Avenue South to the Metro Flood Diversion Project limits approximately 0.5 miles south of 112th Avenue South

3. Drainage. The parties agree that Cass County remains responsible for drainage maintenance associated with Cass County Highways 6 and 17 until turnover to the City.

4. Snow Removal. The parties agree that Cass County shall be primarily responsible for snow removal on Cass County Highways 6 and 17 until turnover to the City. The City shall have the ability to assist Cass County in snow removal as they deem necessary or as available such as when the City snowplows are traveling on County highways. There shall be no remuneration for snow removal completed by either party.

5. Highway and Bridge Regrading, Reconstruction, Paving, and Maintenance - Cass County Responsibility (see Exhibit A). The parties agree that Cass County shall be responsible for funding and executing the following improvements or maintenance:

a. 76th Avenue South approximately 2,600 feet from immediately east of 63rd Street South to 57th Street South, Cass County will pay for the initial regrading, graveling, and paving.

b. 76th Avenue South from Cass Highway 17 east approximately 2,700 feet to 63rd Street South, Cass County will complete Concrete pavement maintenance and sealing.

c. Cass Highway 6 from Cass Highway 17 west to 81st Street South, Cass County will complete an asphalt overlay.

d. Intersection of Cass Highway 17 and 64th Avenue South, Cass County will construct a roundabout.

e. Cass Highway 17 Sheyenne River bridge approximately 2,800 feet south of 52nd Avenue South, Cass County will reconstruct this bridge and approach roadways.

f. 52nd Avenue South Sheyenne River bridge approximately 250 feet east of Cass Highway 17, Cass County, in conjunction with the Cities of Fargo and West Fargo, will reconstruct this bridge and approach roadways.

g. Cass Highway 17 from 52nd Avenue South continuing south to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South, Cass County will complete an asphalt overlay.

h. Cass County also agrees to complete crack sealing and chip sealing two years after any asphalt paving.

i. Cass County also agrees to complete a second crack sealing and chip sealing 10 years after the first chip seal. However, should turnover take place prior this second chip seal, the City will take over and incur the costs to complete the crack sealing, chip sealing, or other maintenance of Cass Highways 6 and 17.

6. Highway and Bridge Regrading, Reconstruction, Paving, and Maintenance – City of Horace Responsibility (see Exhibit A). The parties agree that the City shall be responsible for:

a. 76th Avenue South approximately 2,600 feet from immediately east of 63rd Street South to 57th Street South, the City will pay for underground City utilities, street lighting, shared use paths, and other City requested features outside of the normal road reconstruction, to include the storm sewer arch pipe.

b. 76th Avenues South from Cass Highway 17 east approximately 2,700 feet to 63rd Street South, the City will maintain the underground City utilities, street lighting, and shared use paths.

c. Cass Highway 6 from Cass Highway 17 west to 81st Street South, the City will be responsible for any underground City utilities, or future street lighting and shared use paths

d. Intersection of Cass Highway 17 and 64th Avenue South, the City will pay for underground City utilities, street lighting, shared use paths, and other City requested features outside of the normal road reconstruction of a roundabout.

e. Cass Highway 17 Sheyenne River bridge approximately 2,800 feet south of 52nd Avenue South, the City will pay for underground City utilities, street lighting, shared use paths, and other City requested features outside of the normal road/bridge reconstruction.

f. 52nd Avenue South Sheyenne River bridge approximately 250 feet east of Cass Highway 17, the City will pay for underground City utilities, street lighting, shared use paths, and other City requested features outside of the normal road/bridge reconstruction..

g. Cass Highway 17 from 52nd Avenue South continuing south to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South, the City will be responsible for any underground City utilities, or future street lighting and shared use paths.

7. Access Control. The parties agree that once the City reaches a population of 5,000 and starts the two year timeline for turnover, the City will assume responsibility for reviewing and approving all new access points on Cass Highway 6 from 57th Street South to 81st Street South and Cass Highway 17 from 52nd Avenue South to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South. The determination on acceptable access locations shall be made by the City in accordance with its Land Development Code. All costs associated with designing and constructing all new access points in the previously described highway segments shall be the City's responsibility. Any turnlanes or additional traffic control measures needed due to the City's approved access points shall be the City's responsibility. The City shall provide completed designs to Cass County thirty (30) days in advance of bid advertisement for concurrence of the design specifications. If Cass County fails to make any timely design comments within such period, the City shall provide written notice to Cass County of such failure to respond. If Cass County fails to provide design comments within ten (10)

business days following such notice from the City, the design shall be deemed to be approved. Cass County agrees to maintain the road improvements installed by City until the road is turned over to the City. Upon full turnover of Cass Highways 6 and 17, the City will have full responsibility for access control without review by Cass County.

8. Utility Permitting. Cass County will remain responsible for all utility permitting associated with and adjacent to Cass Highway 6 from 57th Street South to 81st Street South and Cass Highway 17 from 52nd Avenue South to the Metro Flood Diversion Project approximately 0.5 miles south of 112th Avenue South with the purpose of reviewing and approving locations of both private and public utilities. Any fees and costs collected by Cass County associated with utility permitting shall remain with Cass County. Upon full turnover of Cass Highways 6 and 17, the City will have full responsibility for utility permitting without review by Cass County.

9. Streetlights and Traffic Signals. The parties agree to permit City to design and install streetlights and/or traffic signals within Cass Highway 6 and 17 rights of way and appropriate access points thereto. The City shall be responsible for all installation and maintenance costs of all new or existing streetlights and traffic signals installed. The locations of any streetlights or traffic signals shall be at the sole discretion of the City. The City shall provide completed designs to Cass County thirty (30) days in advance of bid advertisement for concurrence of the design specifications. If Cass County fails to make any timely design comments within such period, the City shall provide written notice to Cass County of such failure to respond. If Cass County fails to provide design comments within ten (10) business days following such notice from the City, the design shall be deemed to be approved. Cass County agrees to maintain the road improvements installed by City until the road is turned over to the City. The City agrees to pay all electrical costs or fees for the any streetlights or traffic signals.

10. Speed Limits. The parties agree that the County will retain authority to establish the appropriate speed limit on Cass Highways 6 and 17 until turnover. Cass County shall undertake an appropriate traffic study and provide the data to the City for review of the proposed speed limit modifications. Cass County agrees to provide approved speed limit signage in accordance with applicable standards.

11. Transfer of County Lots along Cass Highway 17. Cass County will quit claim the properties located at:

Immediately north of the Casey's gas station on Cass 17 at 314 Main Street North, Rud's Addition Lot 4 Block 1, to the City for the sole purpose of use as a public street corridor.

Property south of 52nd Avenue South to the Sheyenne River on the west side of Cass 17 at 5358 County Road 17 S. This property would be for the sole purpose of public land for park or recreation use with a sole access at the far south end of the property.

This property transfer will occur once an approved re-plat has been recorded that includes platting of this lot as a street corridor. The City must include Cass County in planning and platting discussions of this property during the platting approval process.

12. Dispute Resolution.

a. Horace and Cass County will each designate a representative who will be the party's representative with respect to any matters relating to the repair and/or maintenance of the elements identified in this MOU which may be in dispute or requiring agreement under the terms of this Agreement. Such representatives may be changed from time to time. The representatives will be responsible for resolving any dispute between the parties concerning this Agreement and for the scheduling of maintenance and repairs.

b. If the designated representatives cannot agree with respect to any matter requiring agreement or with respect to any dispute concerning this Agreement, the parties will submit the matter to their respective Boards (or a committee established by the Board) to resolve the dispute.

13. Easements or Right of Way. Each party will grant to the other party any and all necessary easements or right of way to enable the other party to perform their obligations under the terms of this Agreement. Upon the transfer of control and operations of Cass Highway 6 from 57th Street South to 81st South and Cass Highway 17 from 52nd Avenue South to the Metro Flood Diversion Project 0.5 miles south of 112th Avenue South, Cass County will quit claim all deeded right of way and easements from Cass County to the City.

14. Term. The term of this Agreement will be twenty (20) years, with an expiration date of March 31, 2041 unless the City reaches a population of 5,000 triggering the turnover process outlined in this agreement. This Agreement will automatically renew for successive periods of twenty (20) years until turnover.

15. Release and Waiver. In consideration of the mutual promises of the parties and to the fullest extent permitted by law, each party assumes all risk of personal injury or death and property damage or loss from whatever causes arising while that party, its agents, employees or designees are conducting work pursuant to this MOU and each party releases the other party, its officers, employees, agents or designees relating to or arising out of that parties' agents, employees or designees work pursuant to this MOU, whether known or unknown, foreseen or unforeseen, liquidated, unliquidated, fixed, contingent, material or immaterial, disputed or undisputed, suspected or unsuspected, asserted or unasserted, direct or indirect, at law or in equity, from the beginning of time, and each party understands and acknowledges the significance of such release and waiver and hereby assumes full responsibility for any injuries, damages or losses that it may incur as a result of its execution of this MOU.

16. Notice. Any notice or election required or permitted to be given or served by any party to this MOU upon any other will be deemed given or served in accordance with the provisions of this MOU if said notice or election is (a) delivered personally, or (b) mailed by United States certified mail, return receipt requested, postage prepaid, and in any case properly addressed as follows:

If to Horace:

City of Horace
ATTN: City Administrator
Horace City Hall
215 Park Drive East
Horace, ND 58047

If to Cass County:
ATTN: County Administrator
211 9th Street South
Fargo, ND 58103

Each such mailed notice or communication will be deemed to have been given on the date the same is deposited in the United States mail. Each such delivered notice or communication will be deemed to have been given upon the delivery. Any party may change its address for service of notice in the manner specified in this MOU.

17. Time is of the Essence. Time is of the essence of each provision of this entire MOU and of all the conditions thereof.

18. Entire Agreement. This MOU constitutes the entire and complete agreement between the parties and supersedes any prior oral or written agreements between the parties. It is expressly agreed that there are no verbal understandings or agreements which in any way change the terms, covenants and conditions set forth herein, and that no modification of this MOU and no waiver of any of its terms and conditions will be effective unless in writing and duly executed by the parties.

19. Amendments. No amendment, modification, or waiver of any condition, provision or term will be valid or of any effect unless made in writing signed by the party or parties to be bound, or a duly authorized representative, and specifying with particularity the extent and nature of such amendment, modification or waiver.

20. No Forbearance. The failure or delay of any party to insist on the performance of any of the terms of this MOU, or the waiver of any breach of any of the terms of this MOU, will not be construed as a waiver of those terms, and those terms will continue and remain in full force and effect as if no forbearance or waiver had occurred and will not affect the validity of this MOU, or the right to enforce each and every term of this MOU.

21. Remedies. Except as expressly and specifically stated otherwise, nothing herein will limit the remedies and rights of the parties under and pursuant to this MOU.

22. Binding Effect. All covenants, agreements, warranties and provisions of this MOU will be binding upon and inure to the benefit of the parties and their respective representatives, successors and assigns.

23. Governing Law. This MOU has been made and entered into under the laws of the State of North Dakota and said laws will control its interpretation. Any litigation arising out of this MOU will be venued in State District Court in Cass County, North Dakota, and the parties waive any objection to venue or personal jurisdiction.

24. Rules of Construction. The parties acknowledge that they have had the opportunity to review this MOU, and that they have an equal bargaining position in this transaction. No rule of construction that would cause any ambiguity in any provision to be construed against the drafter of this document will be operative against any party to this MOU.

25. Representation. The parties, having been represented by counsel or having waived the right to counsel, have carefully read and understand the contents of this MOU, and agree they have not been influenced by any representations or statements made by any other parties.

26. Headings. Headings in this MOU are for convenience only and will not be used to interpret or construe its provisions.

(Signatures appear on the following pages)

Dated this 21 day of February, 2021.

CITY OF HORACE, NORTH DAKOTA, a municipal corporation

By: _____
Kory Peterson, Mayor

ATTEST:

_____
Brenton Holper, City Administrator

Dated this 1st day of ~~February~~ March, 2021.

CASS COUNTY, NORTH DAKOTA

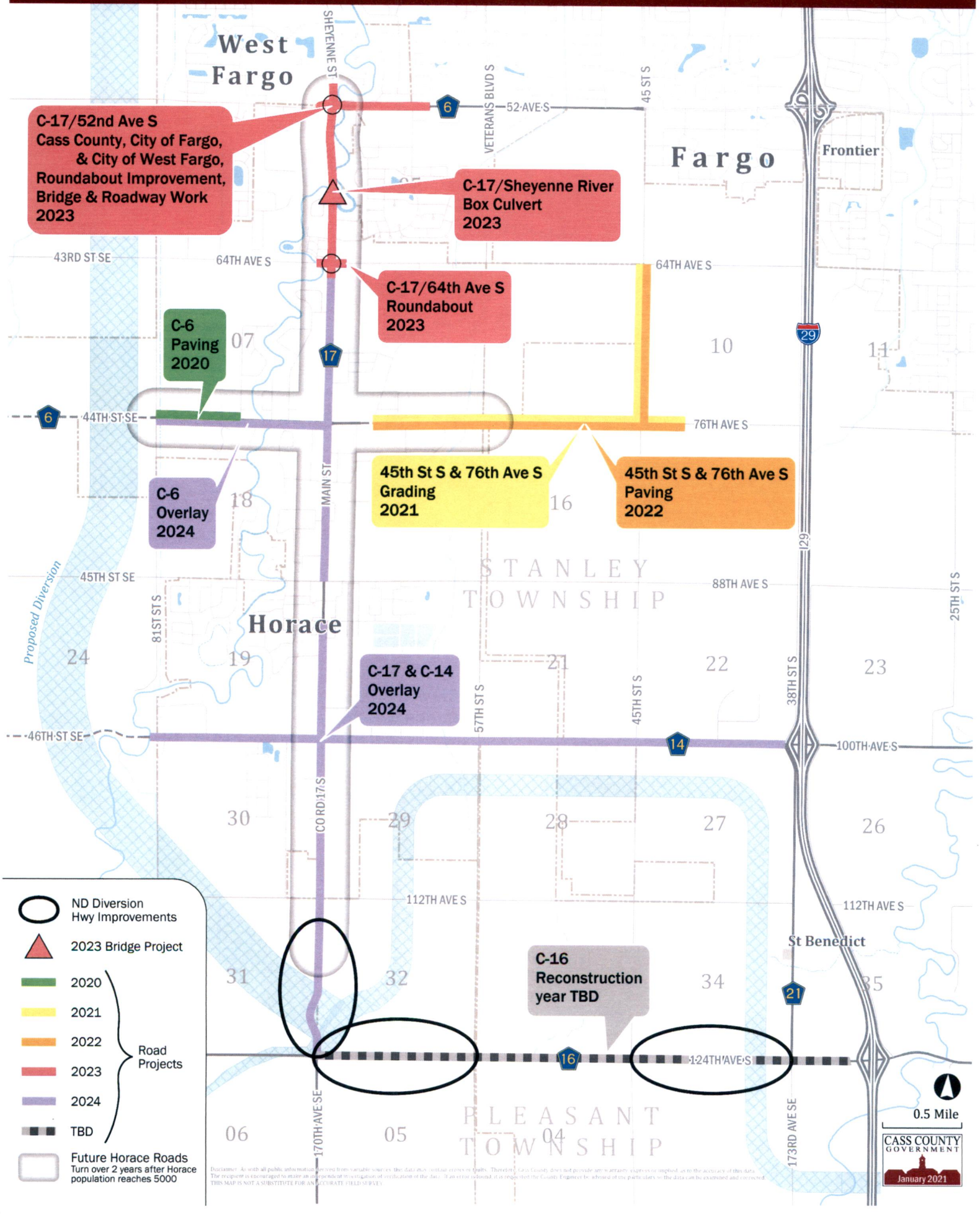
Chad M. Peterson, Board Chairman

ATTEST:

Mike Montplaisir, Finance Director

Exhibit A

HORACE AREA TRANSPORTATION IMPROVEMENTS



Disclaimer: As with all public information derived from variable sources, the data may contain errors or faults. Therefore, Cass County does not provide any warranty, express or implied, as to the accuracy of this data. The recipient is encouraged to make an independent investigation of verification of the data. If an error is found, it is requested the County Engineer be advised of the particulars so the data can be examined and corrected. THIS MAP IS NOT A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

Resolution

This Resolution is entered into between the City of Horace, a North Dakota municipal corporation whose address is 215 Park Drive East, Horace, North Dakota 58047 ("City" or "Horace"), and Cass County, North Dakota, a North Dakota political subdivision, whose address is 211 9th Street South, Fargo, North Dakota 58103 ("Cass County").

Whereas, North Dakota Century Code § 40-05.1-06 and Article 3 of Horace's Home Rule Charter authorizes Horace to enter into contracts; and

Whereas, North Dakota Century Code § 11-09.1-05 and Article 2 of Cass County's Home Rule Charter authorizes the Cass County to enter into contracts; and

Whereas, the City and Cass County entered into a Memorandum of Understanding ("MOU") that was signed on March 1st, 2021;

Whereas, the signed MOU was in relation to the turnover of certain Cass County roads to the City;

Whereas, the MOU stated the turnover start date occurring on January 1st after two full years (730 days) have passed after the City's population exceeds 5,000;

Whereas, the Census Bureau estimates that as of July 1st, 2023, Horace's population exceeded 5,000;

Whereas, the MOU stated necessary construction improvements needed to be completed before turnover may commence;

Whereas, Cass County has completed all but one of the stated construction improvements needed to be completed, and the last project will take place during the 2026 construction season;

Now, Therefore Be It Resolved, that Cass County does hereby declare that the two year (720 day) turnover clock start on January 1st 2025, and commence on January 1st, 2027 thus finalizing the turnover of the stated county roads to the City of Horace;

Approved and adopted this _____ day of _____, 2025 Anno Domini

Attest:

_____
Brenton Holper, City Administrator

By:

_____
Jeff Trudeau, Mayor

Attest:

_____
Brandy Madrigga, Finance Director

By:

_____
Tony Grindberg, Chairperson

FIRST AMENDMENT TO SEWER AGREEMENT

THIS FIRST AMENDMENT TO SEWER AGREEMENT is entered into by the City of Fargo, North Dakota, a North Dakota municipal corporation ("Fargo") and City of Horace, North Dakota, a North Dakota municipal corporation ("Horace")

RECITALS

A. WHEREAS, Fargo and Horace have previously entered into a Sewer Agreement dated May 8, 2017 ("Agreement"), under which the parties agreed that Horace could utilize Fargo's sewer services and to connect with and use the wastewater collection and treatment facilities of Fargo. The Agreement is attached as **Exhibit A** to this First Amendment to Sewer Agreement ("First Amendment").

B. WHEREAS, Fargo and Horace are negotiating, in good faith, a new comprehensive Sewer Agreement. However, Fargo and Horace do not expect the new Sewer Agreement to be executed until sometime in 2025. In the meantime, the parties wish to modify terms of the Agreement including the rate schedule. As such, the parties wish to enter into this First Amendment.

In consideration of the mutual covenants contained in this First Amendment, and other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the parties agree as follows:

AGREEMENT

1. **Interpretation**. This First Amendment modifies and supplements the Agreement. Wherever a conflict exists between this First Amendment and the Agreement, the provisions of the First Amendment will control. It is the intent of the First Amendment to fully amend and replace Section 6 of the Agreement as set forth below. Except as modified and supplemented in this First Amendment, the Agreement will remain in full force and effect.

2. **Rate Schedule**. **Section 6 of the Agreement is hereby replaced in its entirety by the following language:**

> Horace and Fargo agree that beginning on March 1, 2025, and continuing for a period of twenty (20) years, the rate charged to property owns being served under the Agreement and this First Amendment is as follows:

a. Fargo will bill Horace at an initial rate of three dollars and seventy-one cents per one thousand gallons ($3.71/1,000gal) of wastewater conveyed to Fargo. Pursuant to N.D.C.C. § 40-34-19, this obligation does not constitute an indebtedness of Horace or a pledge of the full faith and credit or unlimited taxing resources of Horace. The initial rate shall remain fixed for the first two years of the First Amendment starting on January 1, 2025 and ending on December 31, 2026.

b. The rate charged to Horace may be adjusted, from time to time, by Fargo in proportion to the percentage increase of the prevailing rates charged to other regional users and users within Fargo. The rates charged shall cover all operation and routine maintenance and repair costs of the collection and treatment facilities within the corporate boundaries of the City of Fargo. The rate charged to Horace by Fargo may be reviewed upon request of either party, no more than every two (2) years (within the initial twenty (20) year period). The rates charged will cover Horace's entire allocated share of the operation and routine maintenance and repair costs of the collection and treatment facilities utilized by Horace within the corporate boundaries of Fargo.

3. **Assignment**. Neither party may transfer or assign this First Amendment or the Agreement, nor any rights or obligations under either of those two documents, without the express written consent of the other party.

4. **Amendments**. Any modifications or amendments to this First Amendment, or to the Agreement, must be in writing and signed by both parties.

5. **Severability**. If any court of competent jurisdiction declares any provision or part of the Agreement or of this First Amendment invalid or unenforceable, all remaining provisions and parts of the Agreement and of this First Amendment will remain binding and enforceable; however, the parties will reconvene in good faith negotiations and will reform or replace any invalid, illegal, or unenforceable provision or part of the Agreement or of this First Amendment with an alternative provision or part that is enforceable and bears as close resemblance as possible to any provision or part determined invalid, illegal, or unenforceable.

6. **Headings**. Headings in this First Amendment are for convenience only and will not be used to interpret or construe its provisions.

7. **Interpretation**. This First Amendment will be construed as if prepared by both parties.

8. **Effective Date**. This First Amendment will become effective on the date of execution by the last party to sign.

(Signatures appear on the following pages)

CITY OF HORACE

_____

Jeff Trudeau, Mayor

ATTEST:

_____

Brenton Holper, City Auditor

Date: _____, 2025

CITY OF FARGO

_____

Dr. Timothy Mahoney, Mayor

ATTEST:

_____

Steve Sprague, Auditor

Date: _____, 2025

EXHIBIT A

SEWER AGREEMENT DATED MAY 8, 2017

EideBailly

CPAs & BUSINESS ADVISORS

January 20, 2025

To the Mayor and City Commission
City of Horace
215 Park Dr E
Horace, North Dakota 58047

The following represents our understanding of the services we will provide to City of Horace ("the City").

You have requested that we audit the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of City of Horace, as of December 31, 2024, and for the year then ended, and the related notes, which collectively comprise City of Horace's basic financial statements. We are pleased to confirm our acceptance and our understanding of this audit engagement by means of this letter.

The objectives of our audit are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in the United States of America (GAAS) and in accordance with *Government Auditing Standards* will always detect a material misstatement when it exists. Misstatements, including omissions, can arise from fraud or error and are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

Also, the document we submit to you will include the following other additional information that will not be subjected to the auditing procedures applied in our audit of the basic financial statements:

1. Listing of Elected and Appointed Officials

Auditor Responsibilities

We will conduct our audit in accordance with GAAS and in accordance with *Government Auditing Standards*. As part of an audit in accordance with GAAS and in accordance with *Government Auditing Standards*, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. However, we will communicate to you in writing concerning any significant deficiencies or material weaknesses in internal control relevant to the audit of the financial statements that we have identified during the audit.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Conclude, based on the audit evidence obtained, whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for a reasonable period of time.

Because of the inherent limitations of an audit, together with the inherent limitations of internal control, an unavoidable risk that some material misstatements may not be detected exists, even though the audit is properly planned and performed in accordance with U.S. GAAS and in accordance with *Government Auditing Standards*. Please note that the determination of abuse is subjective, and *Government Auditing Standards* does not require auditors to detect abuse.

Compliance with Laws and Regulations

As previously discussed, as part of obtaining reasonable assurance about whether the basic financial statements are free of material misstatement, we will perform tests of the City's compliance with the provisions of applicable laws, regulations, contracts, and agreements. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion.

Management Responsibilities

Our audit will be conducted on the basis that management and, when appropriate, those charged with governance, acknowledge and understand that they have responsibility:

a. For the preparation and fair presentation of the basic financial statements in accordance with accounting principles generally accepted in the United States of America;
b. For the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of basic financial statements that are free from material misstatement, whether due to error fraudulent financial reporting, misappropriation of assets, or violations of laws, governmental regulations, grant agreements, or contractual agreements; and
c. To provide us with:
    i. Access to all information of which management is aware that is relevant to the preparation and fair presentation of the basic financial statements such as records, documentation, and other matters;
    ii. Additional information that we may request from management for the purpose of the audit;
    iii. Unrestricted access to persons within the entity and others from whom we determine it necessary to obtain audit evidence.
d. For identifying and ensuring that the entity complies with the laws and regulations applicable to its activities;
e. For adjusting the basic financial statements to correct material misstatements and confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the current period under audit are immaterial, both individually and in the aggregate, to the basic financial statements as a whole; and
f. For acceptance of nonattest services, including identifying the proper party to oversee nonattest work;

g. For maintaining adequate records, selecting and applying accounting principles, and safeguarding assets.
h. For informing us of any known or suspected fraud affecting the entity involving management, employees with significant role in internal control and others where fraud could have a material effect on the financials; and
i. For the accuracy and completeness of all information provided.

As part of our audit process, we will request from management and, when appropriate, those charged with governance, written confirmation concerning representations made to us in connection with the audit.

Nonattest Services

With respect to any nonattest services we perform, we agree to perform the following:

- Prepare or assist with preparing financial statements in conformity with U.S. generally accepted accounting principles based on information provided by you.

We will not assume management responsibilities on behalf of the City. The City's management understands and agrees that any advice or recommendation we may provide in connection with our audit engagement are solely to assist management in performing its responsibilities.

The City's management is responsible for (a) making all management decisions and performing all management functions; (b) assigning a competent individual to oversee the services; (c) evaluating the adequacy of the services performed; (d) evaluating and accepting responsibility for the results of the services performed; and (e) establishing and maintaining internal controls, including monitoring ongoing activities.

Our responsibilities and limitations of the nonattest services are as follows:

- We will perform the services in accordance with applicable professional standards.
- The nonattest services are limited to the services previously outlined above. Our firm, in its sole professional judgment, reserves the right to refuse to do any procedure or take any action that could be construed as making management decisions or assuming management responsibilities.

Reporting

We will issue a written report upon completion of our audit of the City's basic financial statements. Our report will be addressed to the governing body of the City. Circumstances may arise in which our report may differ from its expected form and content based on the results of our audit. Depending on the nature of these circumstances, it may be necessary for us to modify our opinions, add an emphasis-of-matter or other-matter paragraph(s), to our auditor's report, or if necessary, withdraw from the engagement. If our opinions on the basic financial statements are other than unmodified, we will discuss the reasons with you in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed opinions, we may decline to express opinions or to issue a report as a result of this engagement.

In accordance with the requirements of *Government Auditing Standards*, we will also issue a written report describing the scope of our testing over internal control over financial reporting and over compliance with laws, regulations, and provisions of grants and contracts, including the results of that testing. However, providing an opinion on internal control and compliance over financial reporting will not be an objective of the audit and, therefore, no such opinion will be expressed.

Other

We understand that your employees will prepare all confirmations we request and will locate any documents or support for any other transactions we select for testing.

If you intend to publish or otherwise reproduce the basic financial statements and make reference to our firm, you agree to provide us with printers' proofs or masters for our review and approval before printing. You also agree to provide us with a copy of the final reproduced material for our approval before it is distributed.

Regarding the electronic dissemination of audited financial statements, including financial statements published electronically on your website or elsewhere, you understand that electronic sites are a means to distribute information and, therefore, we are not required to read the information contained in these sites or to consider the consistency of other information in the electronic site with the original document.

Professional standards prohibit us from being the sole host and/or the sole storage for your financial and non-financial data. As such, it is your responsibility to maintain your original data and records and we cannot be responsible to maintain such original information. By signing this engagement letter, you affirm that you have all the data and records required to make your books and records complete.

Provisions of Engagement Administration, Timing and Fees

During the course of the engagement, we will only provide confidential engagement documentation to you via Eide Bailly's secure portal or other secure methods, and request that you use the same or similar tools in providing information to us. Should you choose not to utilize secure communication applications, you acknowledge that such communication contains a risk of the information being made available to unintended third parties. Similarly, we may communicate with you or your personnel via e-mail or other electronic methods, and you acknowledge that communication in those mediums contains a risk of misdirected or intercepted communications.

Should you provide us with remote access to your information technology environment, including but not limited to your financial reporting system, you agree to (1) assign unique usernames and passwords for use by our personnel in accessing the system and to provide this information in a secure manner; (2) limit access to "read only" to prevent any unintentional deletion or alteration of your data; (3) limit access to the areas of your technology environment necessary to perform the procedures agreed upon; and (4) disable all usernames and passwords provided to us upon the completion of procedures for which access was provided. We agree to only access your technology environment to the extent necessary to perform the identified procedures.

Derek Flanagan is the engagement partner for the audit services specified in this letter. The engagement partner's responsibilities include supervising services performed as part of this engagement and signing or authorizing another qualified firm representative to sign the audit report.

Our fees are based on the amount of time required at various levels of responsibility, plus actual out-of-pocket expenses, administrative charges. There will be a 5% technology fee included in the current year. Invoices are payable upon presentation. We estimate that our fee for the audit will not exceed the following:

Audit of Financial Statements	$ 53,200
Presentation to the City Council**	1,100

**The above fee for presentation is included to provide the City the option to either eliminate this service or modify to a videoconference or teleconference presentation. If a conferencing option presentation is acceptable the fee will be reduced by $500.

As noted above actual out-of-pocket expenses will be billed if onsite services are requested, plus the travel time of the professional(s) coming onsite at 50% of their standard hourly rates.

If the City has significant capital projects, new long-term debt issuances, or refunding bond transactions that cause additional audit testing requirements or preparation time, we will bill the added time at the hourly rates of the professionals performing the work. Changes at the City such as software conversions, software updates, and/or staffing transitions that cause additional audit time will also be billed at the hourly rates of the professionals being impacted by the extra work.

The ability to perform and complete our engagement consistent with the estimated fee included above depends upon the quality of your underlying accounting records and the timeliness of your personnel in providing information and responding to our requests. To assist with this process, we will provide you with an itemized request list that identifies the information you will need to prepare and provide in preparation for our engagement, as well as the requested delivery date for those items. A lack of preparation, including not providing this information in an accurate and timely manner, unanticipated audit adjustments, and/or untimely assistance by your personnel may result in an increase in our fees and/or a delay in the completion of our engagement.

We may be requested to make certain audit documentation available to outside parties, including regulators, pursuant to authority provided by law or regulation or applicable professional standards. If requested, access to such audit documentation will be provided under the supervision of Eide Bailly LLP's personnel. Furthermore, upon request, we may provide copies of selected audit documentation to the outside party, who may intend, or decide, to distribute the copies of information contained therein to others, including other governmental agencies. We will be compensated for any time and expenses, including time and expenses of legal counsel, we may incur in making such audit documentation available or in conducting or responding to discovery requests or participating as a witness or otherwise in any legal, regulatory, or other proceedings as a result of our Firm's performance of these services. You and your attorney will receive, if lawful, a copy of every subpoena we are asked to respond to on your behalf and will have the ability to control the extent of the discovery process to control the costs you may incur.

Should our relationship terminate before our audit procedures are completed and a report issued, you will be billed for services to the date of termination. All bills are payable upon receipt. A service charge of 1% per month, which is an annual rate of 12%, will be added to all accounts unpaid 30 days after billing date. If collection action is necessary, expenses and reasonable attorney's fees will be added to the amount due.

We may use third party service providers and/or affiliated entities (including Eide Bailly Shared Services Private Limited) (collectively, "service providers") in order to facilitate delivering our services to you. Our use of service providers may require access to client information by the service provider. We will take reasonable precautions to determine that they have the appropriate procedures in place to prevent the unauthorized release of confidential information to others. We will remain responsible for the confidentiality of client information accessed by such service provider and any work performed by such service provider. You acknowledge that your information may be disclosed to such service providers, including those outside the United States.

Neither of us may use or disclose the other's confidential information for any purpose except as permitted under this engagement letter or as otherwise necessary for Eide Bailly to provide the services. Your confidential information is defined as any information you provide to us that is not available to the public. Eide Bailly's confidential information includes our audit documentation for this engagement. Our audit documentation shall at all times remain the property of Eide Bailly LLP. The confidentiality obligations described in this paragraph shall supersede and replace any and all prior confidentiality and/or nondisclosure agreements (NDAs) between us.

You agree to share all facts that may affect your financial statements, even if you first become aware of those facts after the date of the auditor's report but before the date your financial statements are issued.

We agree to retain our audit documentation or work papers for a period of at least eight years from the date of our report.

At the conclusion of our audit engagement, we will communicate to the City Commission, and management the following significant findings from the audit:

- Our view about the qualitative aspects of the entity's significant accounting practices;
- Significant difficulties, if any, encountered during the audit;
- Uncorrected misstatements, other than those we believe are trivial, if any;
- Disagreements with management, if any;
- Other findings or issues, if any, arising from the audit that are, in our professional judgment, significant and relevant to those charged with governance regarding their oversight of the financial reporting process;
- Material, corrected misstatements that were brought to the attention of management as a result of our audit procedures;
- Representations we requested from management;
- Management's consultations with other accountants, if any; and
- Significant issues, if any, arising from the audit that were discussed, or the subject of correspondence, with management.

Government Auditing Standards require that we provide, upon request, a copy of our most recent external peer review report and any subsequent review reports to the party contracting for the audit. Accordingly, we will provide a copy of our most recent peer review report at your request.

MEDIATION

Any disagreement, controversy or claim arising out of or related to any aspect of our services or relationship with you (hereafter a "Dispute") shall, as a precondition to litigation in court, first be submitted to mediation. In mediation, the parties attempt to reach an amicable resolution of the Dispute with the aid of an impartial mediator. Mediation shall begin by service of a written demand. The mediator will be selected by mutual agreement. If we cannot agree on a mediator, one shall be designated by the American Arbitration Association ("AAA"). Mediation shall be conducted with the parties in person in Fargo, North Dakota. Each party will bear its own costs in the mediation. The fees and expenses of the mediator will be shared equally by the parties. Neither party may commence a lawsuit until the mediator declares an impasse.

LIMITED INDEMNITY

Eide Bailly LLP and its partners, affiliates, officers and employees (collectively "Eide Bailly") shall not be responsible for any misstatements in your financial statements that we may fail to detect as a result of misrepresentations or concealment of information by any of your owners, directors, officers or employees. You shall indemnify and hold Eide Bailly harmless from any claims, losses, settlements, judgments, awards, damages and attorneys' fees arising from any such misstatement or concealment of information.

If through no fault of Eide Bailly we are named as a party to a dispute between you and a third party, you shall indemnify and hold Eide Bailly harmless against any losses, damages, settlements, judgments, awards, and the costs of litigation (including attorneys' fees) we incur in connection with the dispute.

Eide Bailly shall not be entitled to indemnification under this agreement unless the services were performed in accordance with professional standards in all material respects.

LIMITATION OF LIABILITY

The exclusive remedy available to you for any alleged loss or damages arising from or related to Eide Bailly's services or relationship with you shall be the right to pursue claims for actual damages that are directly caused by Eide Bailly's breach of this agreement or Eide Bailly's violation of applicable professional standards. In no event shall Eide Bailly's aggregate liability to you exceed two times fees paid under this agreement, nor shall Eide Bailly ever be liable to you for incidental, consequential, punitive or exemplary damages, or attorneys' fees.

TIME LIMITATION

You may not bring any legal proceeding against Eide Bailly unless it is commenced within twenty-four (24) months ("Limitation Period") after the date when we delivered our report, return, or other deliverable under this agreement to you, regardless of whether we do other services for you or that may relate to the audit. The Limitation Period applies and begins to run even if you have not suffered any damage or loss, or have not become aware of a possible Dispute.

GOVERNING LAW AND VENUE

Any Dispute between us, including any Dispute related to the engagement contemplated by this agreement, shall be governed by Minnesota law. Any unresolved Dispute shall be submitted to a federal or state court located in Minneapolis, Minnesota.

ASSIGNMENTS PROHIBITED

You shall not assign, sell, barter or transfer any legal rights, causes of actions, claims or Disputes you may have against Eide Bailly to any person.

Please sign and return the attached copy of this letter to indicate your acknowledgment of, and agreement with, the arrangements for our audit of the financial statements including our respective responsibilities.

We appreciate the opportunity to be your certified public accountants and look forward to working with you and your staff.

Respectfully,



_____
Derek Flanagan, CPA
Partner

****

RESPONSE:

This letter correctly sets forth our understanding.

Acknowledged and agreed on behalf of City of Horace by:

Name: _____

Title: _____

Date: _____

Ohnstad Twichell
attorneys

Offices in North Dakota:
West Fargo, Hillsboro, Casselton, Page, and Maddock

Manfred R. Ohnstad
1914 - 1987
Bradley J. Burgum
1952 - 2010
Daniel R. Twichell
1927 - 2013
Brian D. Neugebauer
1951 - 2014

Lukas D. Andrud
Brent T. Boeddeker
Andrew D. Cook
Lukas W. Croaker
Casey K. Drege
Tiffany J. Findlay
Sean M. Fredricks
Alexander B. Gruchala
Stephen J. Hilfer
John A. Juelson
Brittney M. Kelley
Keven J. Kercher
Roman A. Knudsvig
Brian D. Larson
Tyler J. Leverington
Delvin J. Losing
Marshall W. McCullough
Kathryn J. McNamara
Christopher M. McShane
Cassandra R. Molivigny
Morgan A. Nyquist
David C. Piper
Katie J. Schmidt
John T. Shockley
Jeffrey R. Strom
Sarah M. Wear
Joshua J. Wolfe

January 8, 2025

VIA EMAIL ONLY

Brenton Holper, City Auditor
City of Horace
P.O. Box 99
Horace, ND 58047-0099

Re: Ohnstad Twichell, P.C. Updated Billing Rates for 2025

Dear Mr. Holper,

This letter is to inform you of our proposed billing rates for 2025. I am requesting approval of following rates:

- Attorneys: $250/hour
- Paralegals: $205/hour
- Administrative Staff: $100/hour
- Improvement district files for all timekeepers will be at the firm's 2025 standard billing rates

The above rates will be effective and retroactive as of January 1, 2025. Please let me know if you have any questions or comments.

Sincerely,

OHNSTAD TWICHELL, P.C.

Lukas Croaker

Lukas W. Croaker

:ajr

GAMING SITE AUTHORIZATION

ND OFFICE OF ATTORNEY GENERAL
SFN 17996 (4-2023)

G-___ ___ ___ ___(___ ___ ___)___
Site License Number
(Attorney General Use Only)

Full, Legal Name of Gaming Organization
HORACE LIONS CLUB

This organzation is authorized to conduct games of chance under the license granted by the North Dakota Attorney General at the following location

Name of Location			
HORACE SENIOR CNTER			
Street	City	ZIP Code	County
220 THUE COURT	**HORACE**	**58047**	**CASS**
Beginning Date(s) Authorized	Ending Date(s) Authorized		Number of Twenty-One tables, if zero, enter "0"
1-5-2024	**6-30-25**		

Specific location where games of chance will be conducted and played at the site (**required**)
ENTIRE LOCATION EXCLUDING BATHROOMS

If conducting **Raffle** or **Poker** activity provide date(s) or month(s) of the event(s) if known
MARCH 14TH 2025

RESTRICTIONS FOR CITY/COUNTY USE ONLY

The organization **must** provide the City/County a list of game types included in their Internal Control Manual and have the manual available upon request. The manual must throughly explain each game type to be conducted. The City/County can only approve these games at the site.

ACTIVITY TO BE CONDUCTED Please check all applicable games to be conducted at site (**required**)

☐ Bingo	☐ Club Special	☐ Sports Pools
☐ **ELECTRONIC** Quick Shot Bingo	☐ Tip Board	☐ Twenty-One
☒ Raffles	☐ Seal Board	☒ Poker
☐ **ELECTRONIC** 50/50 Raffle	☐ Punchboard	☐ Calcuttas
☐ Pull Tab Jar	☐ Prize Board	☐ Paddlewheel with Tickets
☐ Pull Tab Dispensing Device	☐ Prize Board Dispensing Device	☐ Paddlewheel Table
☐ **ELECTRONIC** Pull Tab Device		

Days of week of gaming operations (If restricted)	Hours of gaming (If restricted)

If any information above is false, it is subject to administrative action on behalf of the State of North Dakota Office of Attorney General

APPROVALS

Attorney General	Date
Signature of City/County Official	Date
PRINT Name and official position of person signing on behalf of city/county above	

INSTRUCTIONS:

1. City/County - Retain a **copy** of the Site Authorization for your files.
2. City/County - Return the **original** Site Authorization form to the Organization.
3. Organizations - Send the **original**, **signed**, Site Authorization to the Office of Attorney General with any other applicable licensing forms for final approval

RETURN ALL DOCUMENTS TO:

Office of Attorney General
Licensing Section
600 E Boulevard Ave, Dept. 125
Bismarck, ND 58505-0040
Telephone: 701-328-2329 OR 800-326-9240

SPECIAL EVENT PERMIT APPLICATION
SALE OF ALCOHOL

$25 Application Fee (Non-refundable)
Please submit the application no less than 14 days prior to the event.
Attach a copy of your general liability insurance when submitting this form.

Applicant's Name: Big Ervs Bar and Grill

Business Name: Big Ervs Bar and Grill

Business Address: 412 Main Street

Contact Name and Phone: Joseph Gabel 701-282-0532

Email Address: bigervsmanagment@gmail.com

Date(s) of the Event: 03/14/2025 (Weather Make-up 03/15/2025)

Start time of the event: 5:30pm End time of the event: 9:30pm

Location of the Event: Horace Senior Center

Address of the Event:

Provide a brief narrative explanation of the event (e.g., wedding dance, trade show, promotion, etc.) and where alcoholic beverages will be served. If you're raising money, please add what cause the fundraiser is for.

This is the Annual Horace Lions Fun Night. There will be a 50/50 raffle drawing, gun raffle, and a cash bar with alcohol to be served behind a controlled bar area.

Expected Attendance: 75-100

Will minors be present at the event? Yes _____ NO ____X____

Steps to be undertaken by licensee to restrict the sale to and consumption of alcoholic beverages by minors during the event:

_____

_____

Signature of Authorized License Holder

1-17-25

Date

Horace City Council Workshop Minutes
The Horace City Council met on December 12, 2024, at 6:00 pm at the Horace Fire Hall Event Center. Those present were Mayor Jeff Trudeau as well as Councilmembers Naomi Burkland, Stephanie Landstrom, and Rachel Dwyer. Others present included: Jace Hellman, Community Development Director; James Dahlman, City Engineer; Matt Voltz, Finance Director; and Lukas Croaker, City Attorney.

Mayor Trudeau declared the quorum and started the workshop at 6:00 pm.

Agenda Item #3: City Council Workshop
The Community Development Director, Jace Hellman, presented a PowerPoint titled "Horace City Council Workshop: Planning 101." Within the PowerPoint presentation, Mr. Hellman discussed what planning is, legal and guiding principles for planning, and guides and tools for planning including long and short-range plans and zoning. The City Council held further discussions on those topics. Additionally, the City Council participated in small group exercises in which they discussed the definition of a small town as well as the following questions:

- What do you believe are the strengths of the City and why?
- What do you believe the challenges and weaknesses are of the City and why?
- What do you appreciate and value the most about your City?
- Describe a time when you felt the proudest to be a resident of the City, what were the circumstances, what was happening and why did it make you feel proud?

Agenda Item #4: Adjourn
The workshop ended at 7:35 pm.

The next City Council Meeting is scheduled for **Monday, December 16, 2024,** at **6:00 pm**

Horace City Council Meeting Minutes
The Horace City Council met on January 6, 2025, at 6:00 pm at the Horace Fire Hall Event Center. Those present were Mayor Jeff Trudeau as well as Councilmembers Sarah Veit, Naomi Burkland, Stephanie Landstrom, and Rachel Dwyer. Others present included: Brenton Holper, City Administrator; Jace Hellman, Community Development Director; James Dahlman, City Engineer; Matt Voltz, Finance Director; Paul Hankel, Communication Specialist; and Lukas Croaker, City Attorney.

Mayor Trudeau called the meeting to order at 6:00 pm.
The pledge of allegiance was recited.

Agenda Item #3: Approve Regular Agenda
Motion: Approve the Regular Agenda
1st Motion: Councilmember Veit
2nd Motion: Councilmember Burkland
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #4: Approve Consent Agenda
a. Vendor Invoices
b. Pledge Reports
c. Storm and Street Improvement District No. 2022-3 (Wall Avenue East)
    i. Final Progressive Estimate No. 12
    ii. Balancing Change Order No. 6
d. Sanitary, Storm, and Street Improvement District No. 2022-4 (Wall Avenue West)
    i. Progressive Estimate No. 13
e. Water, Sewer, Storm, and Street Improvement District No. 2022-8 (66th Street)
    i. Progressive Estimate No. 14
f. Water, Sewer, Storm, and Street Improvement District No. 2022-12 (Rivers Edge Second Addition)
    i. Progressive Estimate No. 14
g. Water, Sewer, Storm, and Street Improvement District No. 2023-4 (64th Avenue)
    i. Progressive Estimate No. 6
h. Water, Sewer, Storm, and Street Improvement District No. 2024-3 (Deer Creek Estates Second and Third Additions)
    i. Progressive Estimate No. 3
i. Designate Bank Depositories

Motion: Approve the Consent Agenda.
1st Motion: Councilmember Burkland
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #5: Approval of City Council Meeting Minutes from December 16, 2024.
Motion: Approve the City Council Meeting Minutes from December 16, 2024.
1st Motion: Councilmember Veit

2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #6: Public Comment
None.

Agenda Item #7: **Sheriff's Update | Craig Keller & Bryce Noonan, Cass County Sheriff's Office**
The next update will be presented during the January 21, 2025, meeting.

Agenda Item #8: **Cable Franchise Agreement – Dickey Rural Services | Brenton Holper, City Administrator**
Mr. Holper explained that Dickey Rural Services (DRS) intends to provide cable television services to residents of Horace. DRS has proposed entering into a cable franchise agreement with the City of Horace, which would permit DRS to construct, operate, and maintain a cable television system within the city. The agreement specifies the terms for using public rights-of-way to install and maintain the cable infrastructure, including construction and restoration procedures.

Similar to other franchises in Horace, DRS will pay a franchise fee of 2% of its gross revenue from cable services provided within the city. Midco and Sparklight/Cable One were given a 30-day notice regarding the proposed cable franchise agreement, and a public hearing notice was published in The Forum.

Motion: Open the Public Hearing for the Cable Franchise Agreement for Dickey Rural Services at 6:03 pm.
1st Motion: Councilmember Burkland
2nd Motion: Councilmember Veit
Action taken: All in favor, none opposed. Motion carried.

No comments or questions were received.

Motion: Close the Public Hearing for the Cable Franchise Agreement for Dickey Rural Services at 6:04 pm.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Dwyer
Action taken: All in favor, none opposed. Motion carried.

Motion: Approve the Cable Franchise Agreement for Dickey Rural Services.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #9: River's Edge 2nd Addition – Acknowledgement and Assumption of Risk Agreement | Brenton Holper, City Administrator
Mr. Holper presented the Acknowledgment and Assumption of Risk Agreement for River's Edge 2nd Addition. He explained that the agreement allows the developer to construct two model homes in the new development prior to the City's acceptance of infrastructure improvements. During the discussion, the Council inquired about the exact timeline for the completion of the construction.

They also asked for clarification regarding the term and termination, which states that the agreement will expire six months after the City accepts the improvements. The Council requested a revision to shorten the time period when the builder can sell the model homes after the City's acceptance of infrastructure improvements to three months.
Motion: Approve the Acknowledgement & Assumption of Risk Agreement for River's Edge 2nd Addition Revising the Model Home Selling Restriction to 3 Months.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Dwyer
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #10: **Oak Valley Addition – Improvement District | Jim Dahlman, City Engineer**
Mr. Dahlman explained that this agenda item was presented to the City Council on December 16, 2024. The Council had questions for the developer and requested to table action to allow the developer to provide responses. Mr. Jon Youness, the developer, provided a summary of the planned Oak Valley Addition and the associated project. The infrastructure improvements are proposed to be implemented in two phases to facilitate the completion of the infrastructure and the initiation of construction on the first residential homes. Completing the entire development in one phase would take significantly longer than dividing the project into two smaller phases. Council members expressed concerns about phasing the project, noting that the initial set of new homeowners would have to contend with ongoing construction for several years. A discussion took place regarding the project plans, including the incoming roads, the connection to the sewer line, and the proposed special assessment district.
Motion: Approve the Resolution Accepting the Petition for Improvements for the Oak Valley Addition Contingent on the Inclusion of Pin Oak Drive.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Dwyer
Action taken: All in favor, none opposed. Motion carried.

Motion: Approve the Resolution Creating the District for Water, Sewer, Storm, and Street Improvement District No. 2025-3 (Oak Valley Addition).
1st Motion: Councilmember Veit
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Motion: Approve the Resolution Directing the Engineer to Prepare the Preliminary Engineering Report for Water, Sewer, Storm, and Street Improvement District No. 2025-3 (Oak Valley Addition).
1st Motion: Councilmember Burkland
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #11: Deer Creek Estates First Addition | Jim Dahlman, City Engineer
Mr. Dahlman explained that the City received a petition for local improvements for the proposed Deer Creek Estates First Addition. He also noted that the existing Deer Creek Estates Addition (Water, Sewer, Storm, and Street Improvement District No. 2021-7) must be dissolved before a new improvement

district can be established.
Motion: Approve the Resolution Dissolving the Water, Sewer, Storm, and Street Improvement District No. 2021-7 (Deer Creek Estates Addition.)

1st Motion: Councilmember Veit
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Mr. Dahlman summarized the proposed improvements, which include water mains, sanitary sewer mains, storm sewer mains and laterals, street lighting, and other incidental items. One resident expressed concern about drainage issues and special assessments related to developments, noting that the roads in Horace are being damaged due to the numerous construction sites in town.

The Council discussed the planned improvements for the Deer Creek Estates First Addition.
Motion: Approve the Resolution Accepting the Petition for Improvements for Deer Creek Estates First Addition.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Dwyer
Action taken: All in favor, none opposed. Motion carried.

Mr. Dahlman provided an overview of the planned improvement district and showed a map of the area.
Motion: Approve the Resolution Creating the District for Water, Sewer, Storm, and Street Improvement District No. 2025-4 (Deer Creek Estates First Addition).
1st Motion: Councilmember Landstrom
2nd Motion: Councilmember Dwyer
Action taken: All in favor, none opposed. Motion carried.

Mr. Dahlman explained that the next step in the project timeline would be directing the engineer to prepare a preliminary engineering report.
Motion: Approve the Resolution Directing the Engineer to Prepare the Preliminary Engineering Report for Water, Sewer, Storm, and Street Improvement District No. 2025-4 (Deer Creek Estates First Addition).
1st Motion: Councilmember Dwyer
2nd Motion: Councilmember Burkland
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #12: Water, Sewer, Storm, and Street Improvement District No. 2025-1 (Deer Creek Parkway) | Jim Dahlman, City Engineer
Mr. Dahlman gave an overview of the preliminary engineering report for Water, Sewer, Storm, and Street Improvement District No. 2025-1 (Deer Creek Parkway).
Action taken: None
Agenda Item #13: North Dakota Forest Service (NDFS) America the Beautiful Program Development (ATBPD) – Project Awards 2024 Fall | Brenton Holper, City Administrator
Mr. Holper explained that the City of Horace was awarded a grant from the North Dakota Forest Service (NDFS) for the 2024 Fall America the Beautiful Program Development (ATBPD) project. This program funds

tree planting projects on public property within the community and assists with tree inventories, removals, pruning, Emerald Ash Borer (EAB) action plans, and more. It is a 50/50 grant and encourages diversity in tree planting throughout communities. The maximum award is $10,000 each time. He requested a $10,000 budget for the removal of ash trees along the east property line of the City Hall lot and the removal of boulevard ash trees on Northwood Drive. After removing the trees, new trees of different species will be planted.

Motion: Accept the NDFS Grant Award and Approve a $10,000 Budget from the Foresty Fund for the Project.

1st Motion: Councilmember Burkland

2nd Motion: Councilmember Dwyer

Action taken: All in favor, none opposed. Motion carried.

Agenda Item #14: Engineering/Public Works Report | Jim Dahlman, City Engineer

Mr. Dahlman gave an update on current and upcoming construction projects.

Agenda Item #15: City Administrator Report | Brenton Holper, City Administrator

Mr. Holper gave an update on available City staff positions. The receptionist position was filled, and the new employee will start on January 21st. A round of interviews took place for a public works position and applications are currently being received for a city planner position. He added that there have not been many applications for the planner position yet.

Agenda Item # 16: Portfolio Reports

a. Mayor Trudeau will join the FM area mayors and speak during the upcoming State of the Cities event hosted by the FMWF Chamber on January 9th.
   Mayor Trudeau explained that the new receptionist will start on January 21st.
b. Councilmember Veit requested that staff set up a meeting with developer Jon Youness.
c. Councilmember Burkland will attend the proposed Suncrest Addition neighborhood meeting that will take place on January 7th. She explained that the next Downtown Neighborhoods Plan meeting will be on January 22nd and 23rd.
d. Councilmember Landstrom said she attended several Metro COG meetings and continues to work on the new City meeting space fit-up.
e. Councilmember Dwyer stated that the Holly Days event in December was a success, and that staff are already working on the upcoming Easter Egg Hunt.

The Council took a short break to prepare for the executive session.

Agenda Item #17: Executive session held pursuant to N.D.C.C. § 44-04-19.1(9) to discuss negotiating strategy or provide negotiating instructions to its attorney or other negotiator regarding pending eminent domain proceedings related to the Wall Ave Project.

Motion: Approve Closing the Regular Session and Entering the Executive Session at 7:58 PM.

1st Motion: Councilmember Burkland

2nd Motion: Councilmember Veit

Action taken: All in favor, none opposed. Motion carried.

Motion: Approve Entering the Regular Session at 8:38 PM.
1st Motion: Councilmember Veit
2nd Motion: Councilmember Burkland
Action taken: All in favor, none opposed. Motion carried.

Motion: Motion to Accept the Snellgrove Offers and Settle the Eminent Domain Case.
1st Motion: Councilmember Burkland
2nd Motion: Councilmember Landstrom
Action taken: All in favor, none opposed. Motion carried.

Agenda Item #18: Adjourn
Motion: Adjourn at 8:41 pm
1st Motion: Councilmember Burkland
2nd Motion: Councilmember Veit
Action taken: All in favor, none opposed. Motion carried.

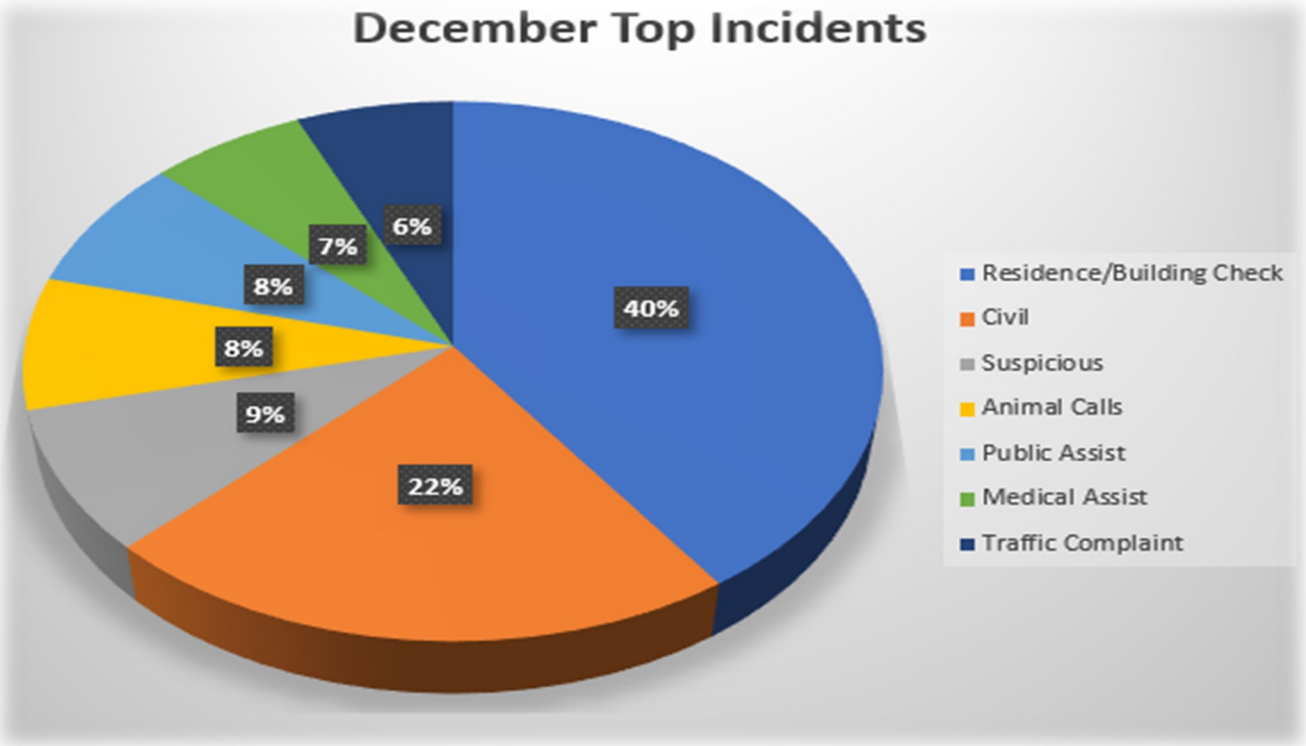
The next City Council Meeting is scheduled for **Tuesday, January 21, 2025,** at **6:00 pm**

DECEMBER 2024

CITY OF HORACE MONTHLY REPORT

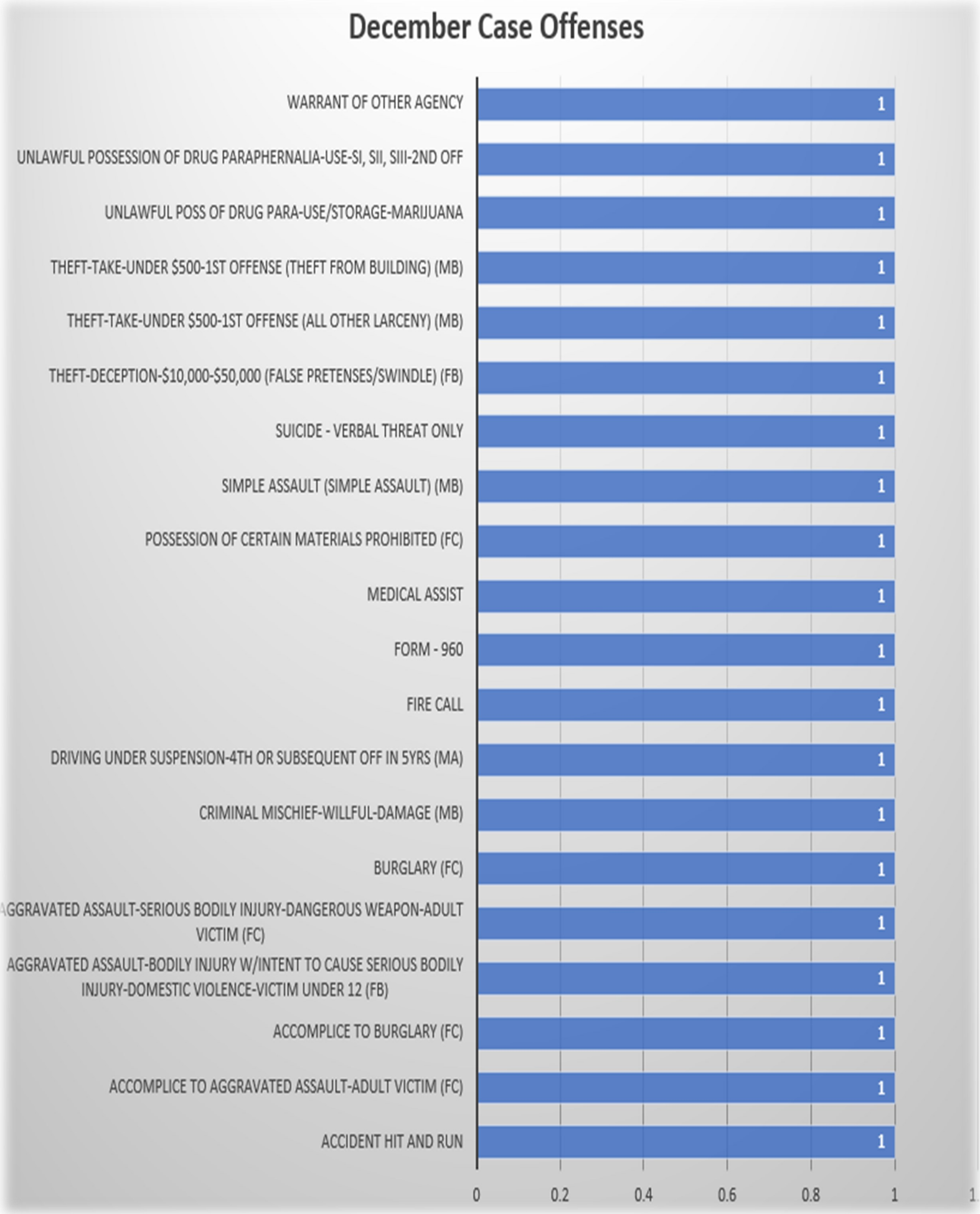


DECEMBER 2024 - 365 CALLS FOR SERVICE

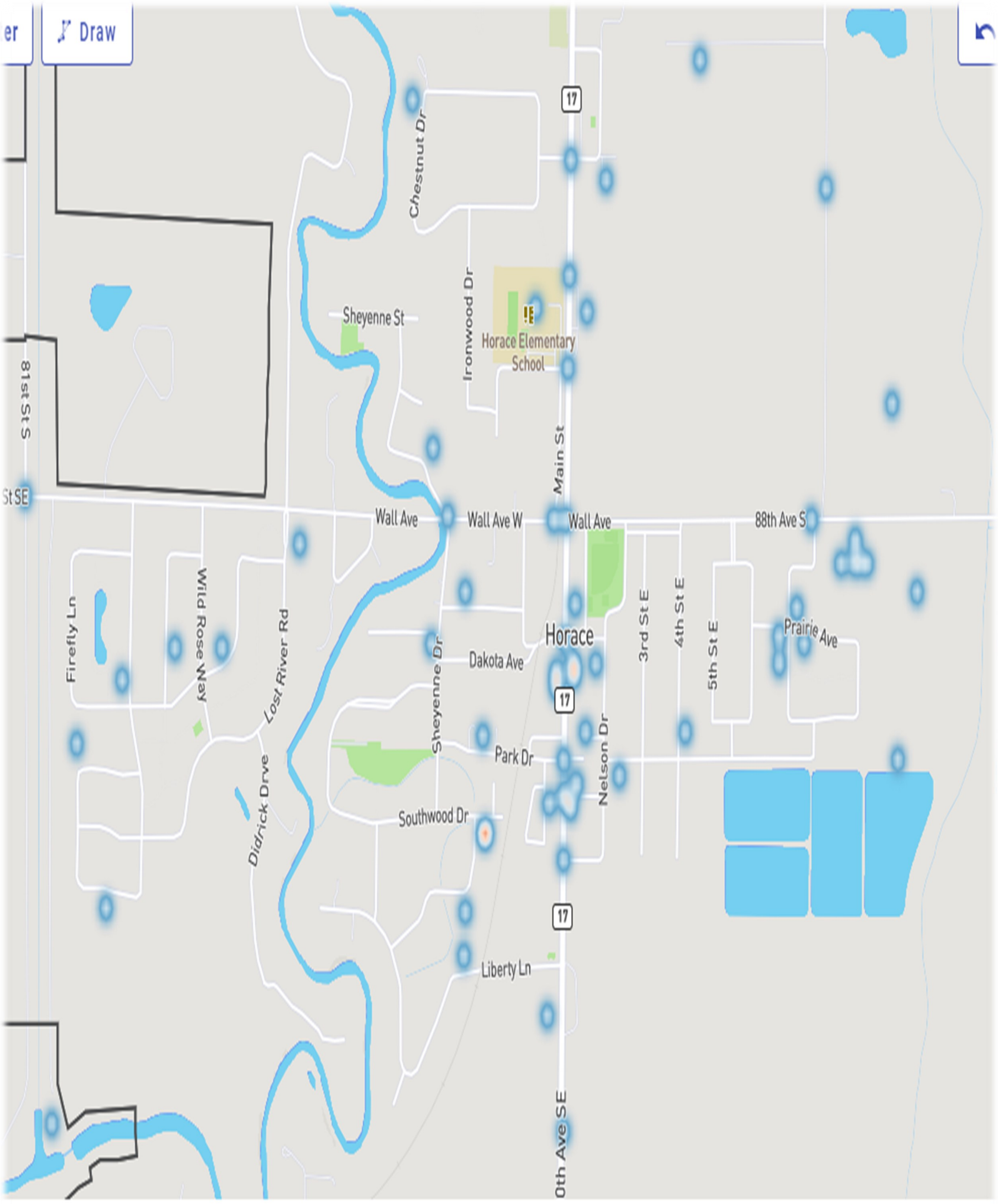


Residence/Building Check	56
Civil	31
Suspicious	12
Animal Calls	11
Public Assist	11
Medical Assist	9
Traffic Complaint	9
Parking Complaint	7
Registered Offender	6
Agency Assist	5
Accident - Property	4
Alarm	3
Burglary	3
Juvenile Complaint	3
Loud Noise	3
Reckless Driving	3
Assist Fire	2
Disturbance	2
Field Contact	2
Impaired Driver	2
Impaired Person	2
911 Hangup	1
Abuse	1
Assault	1
Bon Fire	1
Domestic	1
Fireworks	1
Fraud	1
Harassment	1
Missing Person	1
Narcotics	1
Offender Check	1
Search Warrant	1
Shoplifting	1
Suicidal Person	1
Theft	1
Violation of Court Orders	1
Welfare Check	1

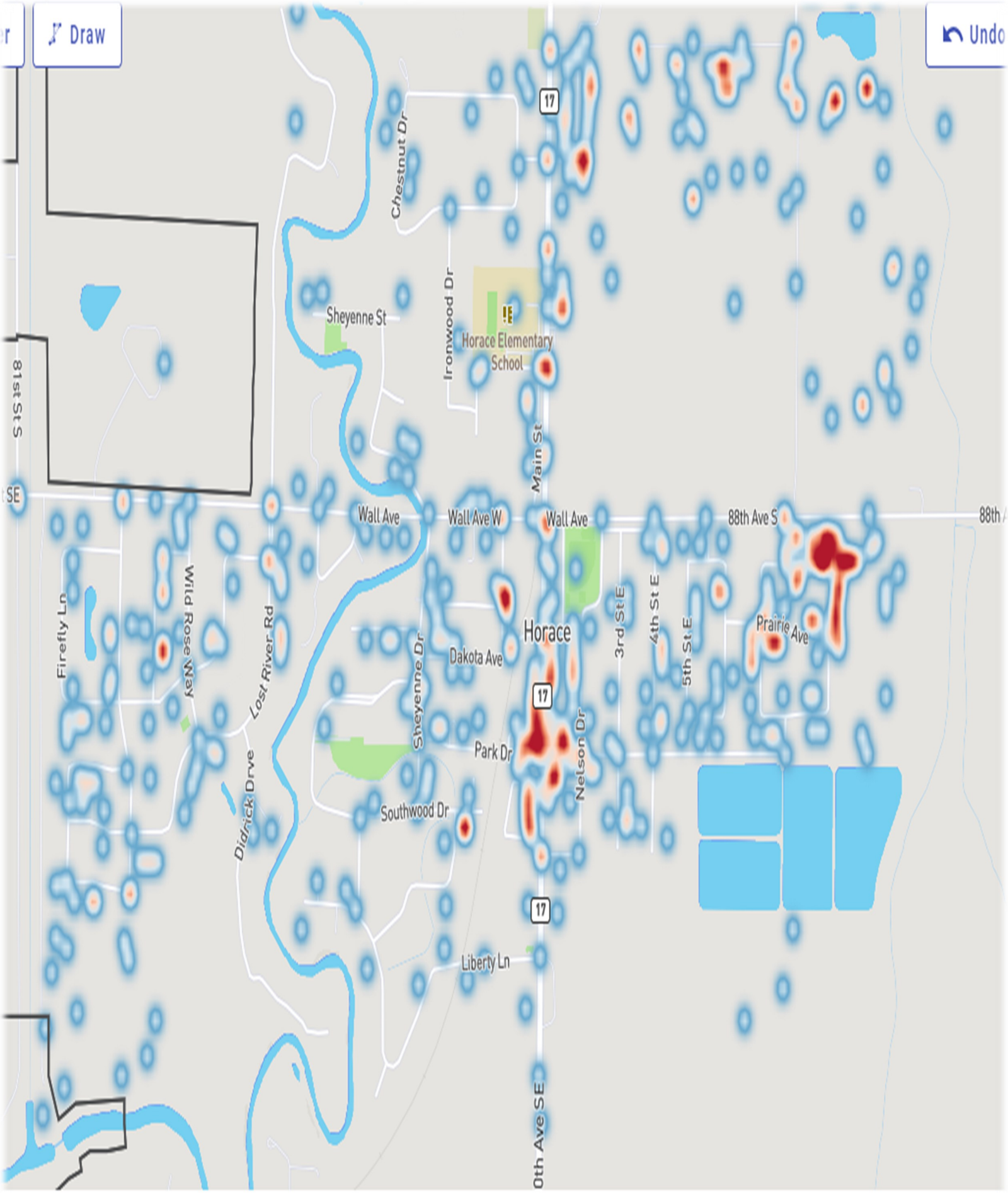
HORACE MUNICIPAL COURT CITATIONS	7
WARNINGS ISSUED	31
TOTAL CITATIONS ISSUED	18
PARKING CITATIONS	3
PARKING WARNINGS	1
IMPOUNDS - PARKING	0
IMPOUNDS - OTHER	1


December Case Offenses
WARRANT OF OTHER AGENCY
1
UNLAWFUL POSSESSION OF DRUG PARAPHERNALIA-USE-SI, SII, SIII-2ND OFF
1
UNLAWFUL POSS OF DRUG PARA-USE/STORAGE-MARIJUANA
1
THEFT-TAKE-UNDER $500-1ST OFFENSE (THEFT FROM BUILDING) (MB)
1
THEFT-TAKE-UNDER $500-1ST OFFENSE (ALL OTHER LARCENY) (MB)
1
THEFT-DECEPTION-$10,000-$50,000 (FALSE PRETENSES/SWINDLE) (FB)
1
SUICIDE - VERBAL THREAT ONLY
1
SIMPLE ASSAULT (SIMPLE ASSAULT) (MB)
1
POSSESSION OF CERTAIN MATERIALS PROHIBITED (FC)
1
MEDICAL ASSIST
1
FORM - 960
1
FIRE CALL
1
DRIVING UNDER SUSPENSION-4TH OR SUBSEQUENT OFF IN 5YRS (MA)
1
CRIMINAL MISCHIEF-WILLFUL-DAMAGE (MB)
1
BURGLARY (FC)
1
AGGRAVATED ASSAULT-SERIOUS BODILY INJURY-DANGEROUS WEAPON-ADULT VICTIM (FC)
1
AGGRAVATED ASSAULT-BODILY INJURY W/INTENT TO CAUSE SERIOUS BODILY INJURY-DOMESTIC VIOLENCE-VICTIM UNDER 12 (FB)
1
ACCOMPLICE TO BURGLARY (FC)
1
ACCOMPLICE TO AGGRAVATED ASSAULT-ADULT VICTIM (FC)
1
ACCIDENT HIT AND RUN
1
0
0.2
0.4
0.6
0.8
1

DECEMBER HEAT MAP OF INCIDENTS HORACE



01/01/24 - 12/31/24 HEAT MAP OF INCIDENTS HORACE





HORACE

2024 Yearly Report

Submittal Date: January 15, 2024

Submitted To: **City of Horace**

Submitted By: *Deputy Craig Keller*

Cass County Sheriff's Office
1612 23rd Avenue North
Fargo, North Dakota 58102

January 2, 2024

City Council Members

City of Horace
600 Nelson Drive

Dear Council Members,

We would like to thank you for your continued partnership in 2024 as Horace continues to grow and prosper. It is through this partnership that we strive to make Horace a safe and welcoming place for all residents and visitors. We take great pride in keeping the community safe while doing so with the upmost respect for the citizens we serve. This is only possible through the relationships that have been built not only with city leaders, but also community members. We thank you for allowing us to be part of your community and look forward to another year serving the great citizens of Horace.

2024 was another year of great growth within the city of Horace. With that growth, came challenges. One such area deputies concentrated on last year was property crimes. While we saw a slight increase in the number of burglary reports taken from the previous year (2023), the number of reports taken for burglaries and thefts were still significantly lower than in 2022. This can be attributed directly to the hard work done by deputies patrolling at all hours of the day to ensure Horace continues to be a safe and welcoming community for all.

Respectfully Submitted,

Deputy Craig Keller
Deputy Bryce Noonan
Cass County Sheriff's Office

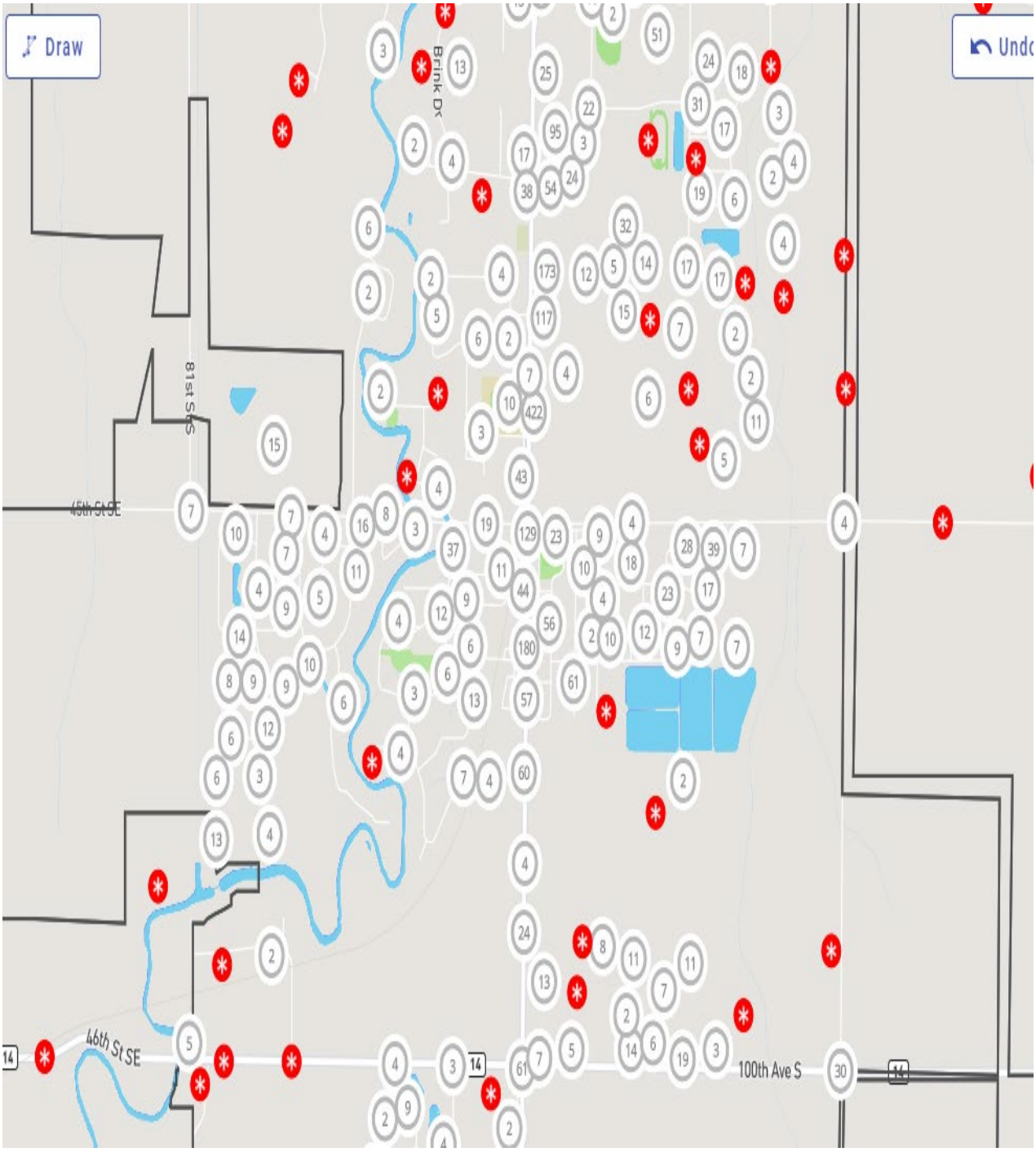
Cass County Sheriff's Office
1612 23rd Avenue North
Fargo, North Dakota 58102

YEARLY REPORT

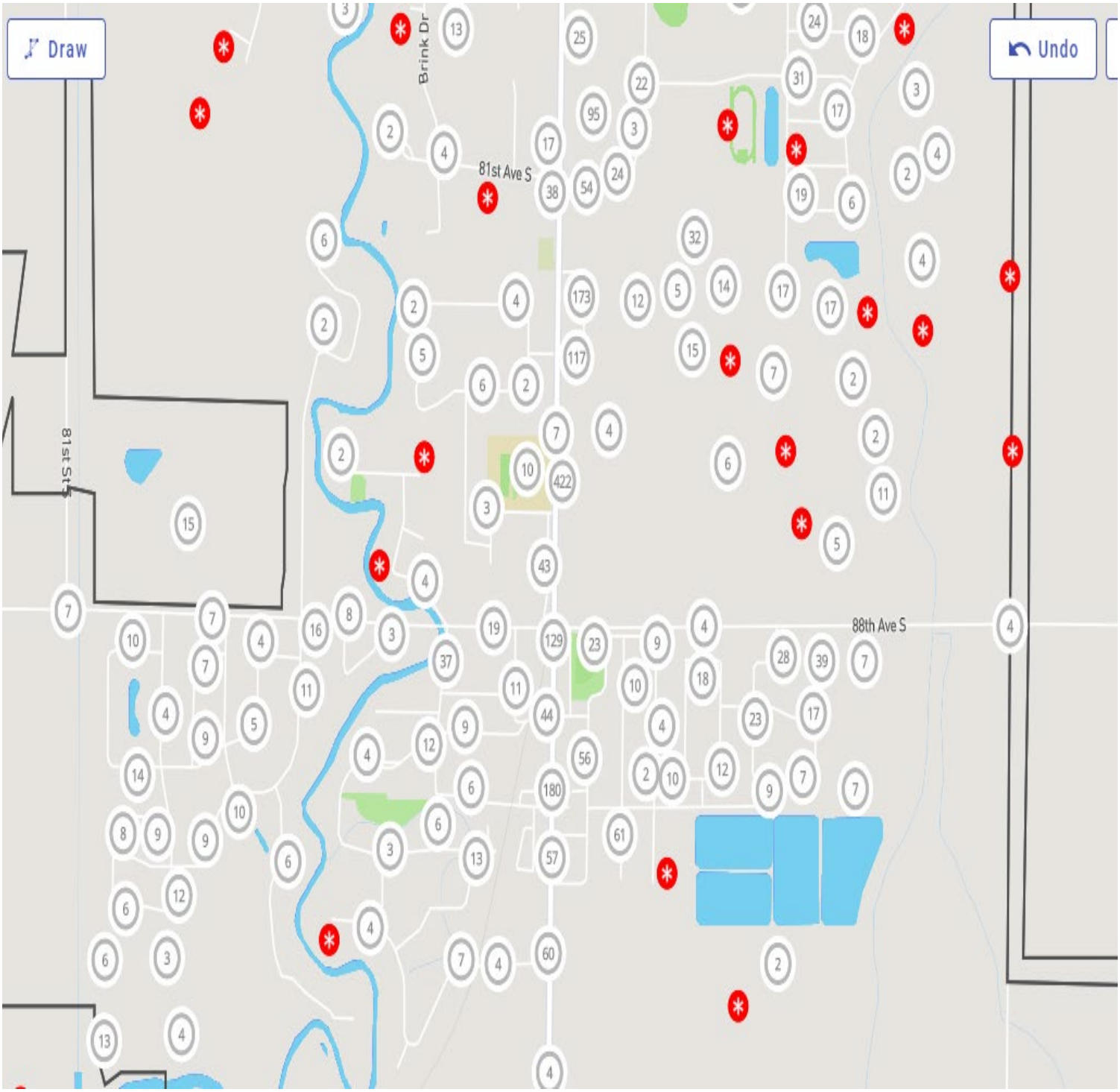
YEAR	2024	2023	2022
CALLS FOR SERVICE	5,275	3,860	2,550
TRAFFIC CRASH	55	60	39
RECKLESS DRIVING	48	35	33
JUVENILE COMPLAINTS	16	22	11
ANIMAL CALLS	114	103	69
ALCOHOL RELATED	41	34	22
DOMESTIC/DISTURBANCE	71	64	42
HARASSMENT	15	8	8
THREATS	10	5	8
ALL THEFT	21	29	27
BURGLARY	10	7	29
SUICIDAL PERSON	10	7	7
SUSPICIOUS	114	147	153
MEDICAL ASSISTS	113	115	89
COP	1,354	1,143	238
BAR CHECKS	27	20	7
BUILDING CHECKS	855	251	83
TRAFFIC STOPS/COMPLAINTS	1,272	1,121	1,053
TOTAL HOURS	3,979:15	3,910:25	4,329:55

Cass County Sheriff's Office
1612 23rd Avenue North
Fargo, North Dakota 58102

Calls for Service

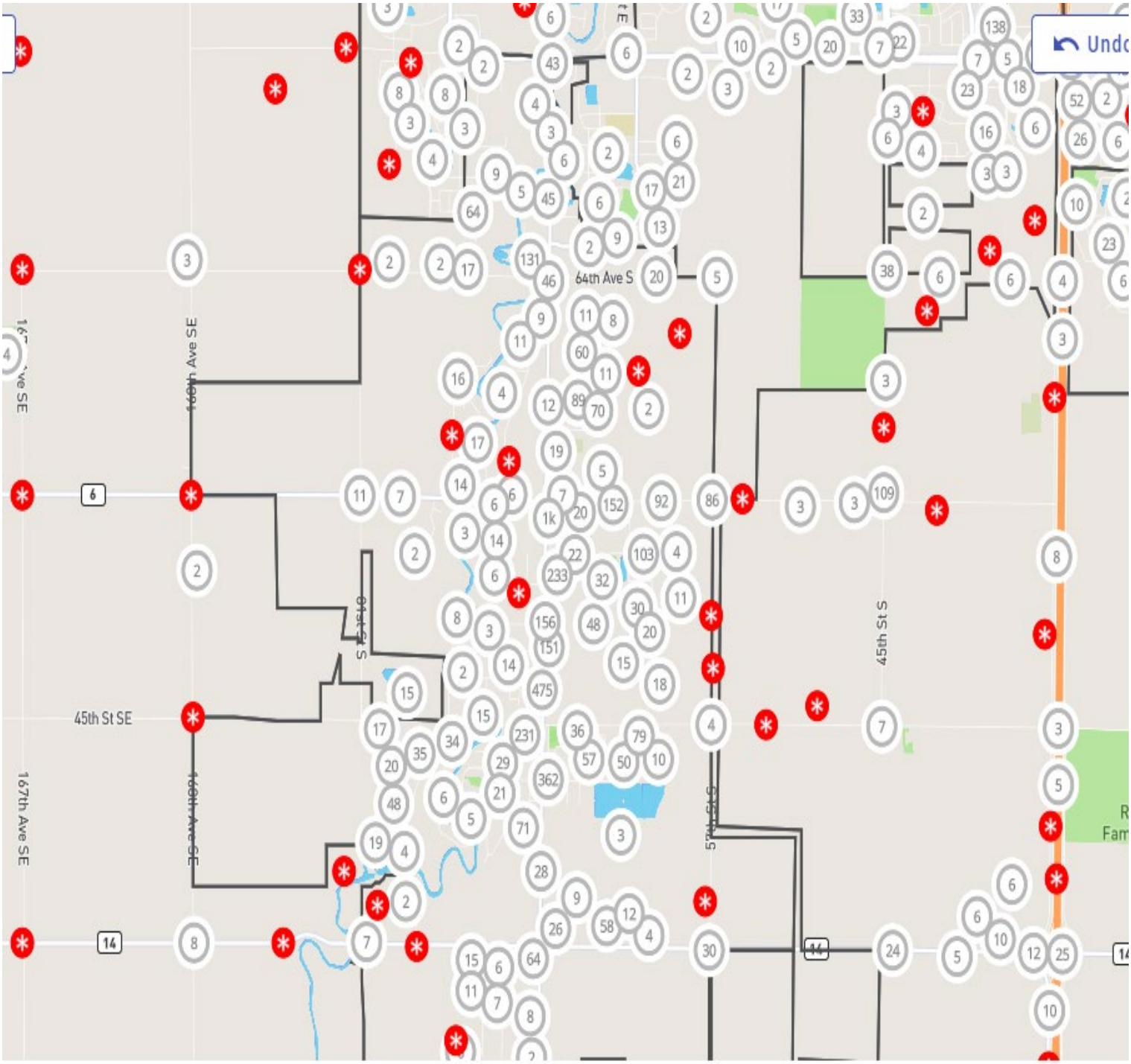


Calls for Service (Zoomed)

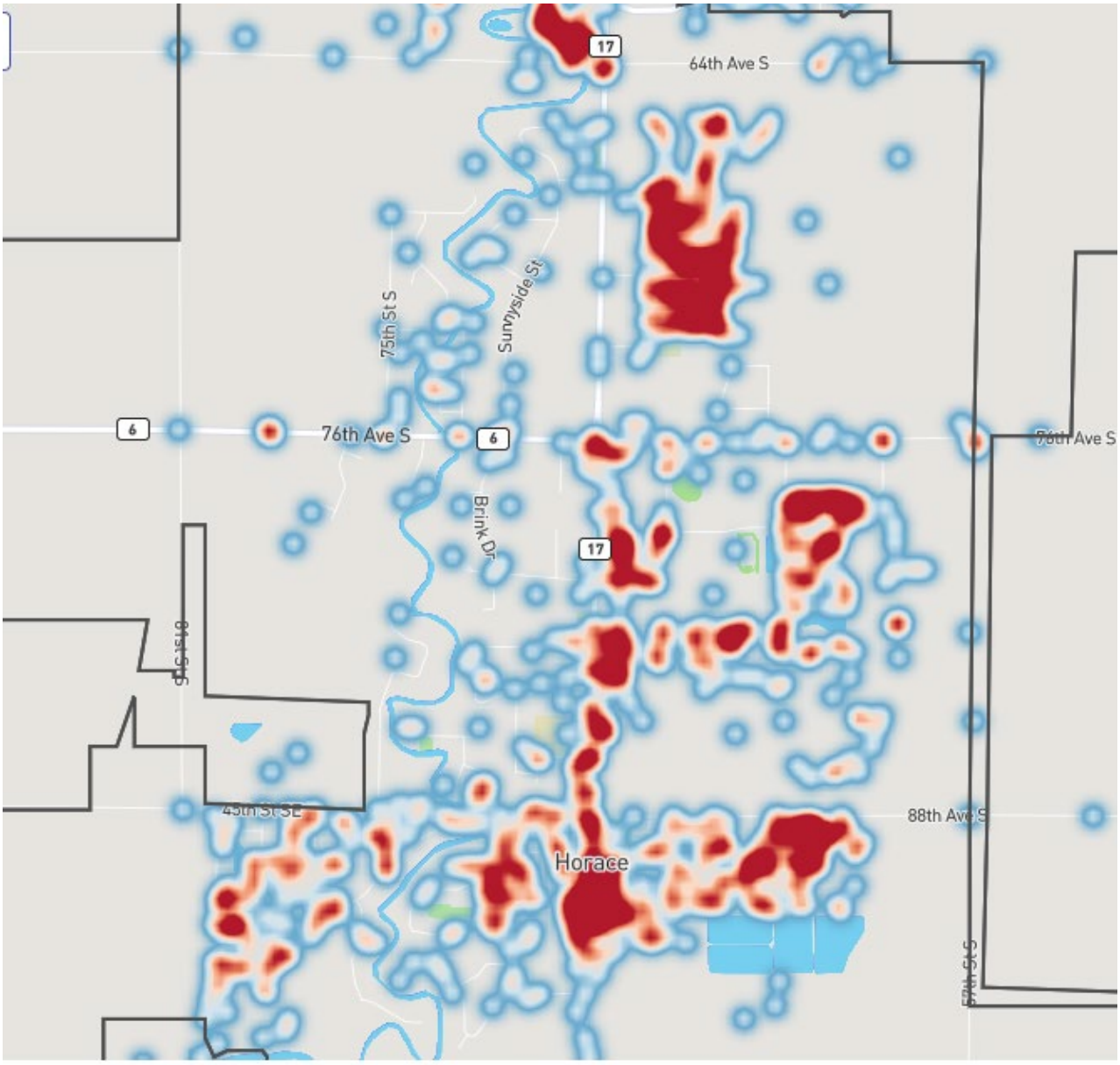


Cass County Sheriff's Office
1612 23rd Avenue North
Fargo, North Dakota 58102

Calls for Service (Including Rural)



Concentration of Incidents (Heat Map)



INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

MEMO

To: Horace City Council
(Via email: Bholper@cityofhorace.com)

From: James Dahlman, PE

Date: January 30th, 2025

Re: Final Pavement Lifts (Various Locations) and Miscellaneous City Street Patching
Water, Sewer, Storm, and Street Improvement District Nos.
2019-6 (Cub Creek First Addition),
2019-7 (Maple Lakes Estates Addition Ph I), and
2021-3 (Lakeview Addition)
Plans and Specifications
Horace, North Dakota
ER24-00-125, ER24-00-126, and ER24-00-127

Please find an example plan sheet attached for the above referenced project.

This is being presented for your information, review, and comments.

The anticipated project schedule is:

- February 3rd, 2025 - approve plans and specifications.
- February 12th, 2025 - advertise in the paper.
- February 19th, 2025 - advertise in the paper.
- February 26th, 2025 - advertise in the paper.
- March 6th, 2025 - open bids.
- September 6th, 2025 - substantial completion.
- September 20th, 2025 - final completion.

I recommend:

1. Approve the plans and specifications.
2. Direct the auditor to advertise for bids.

If you have any questions, please feel free to contact me at (701) 532-0438.

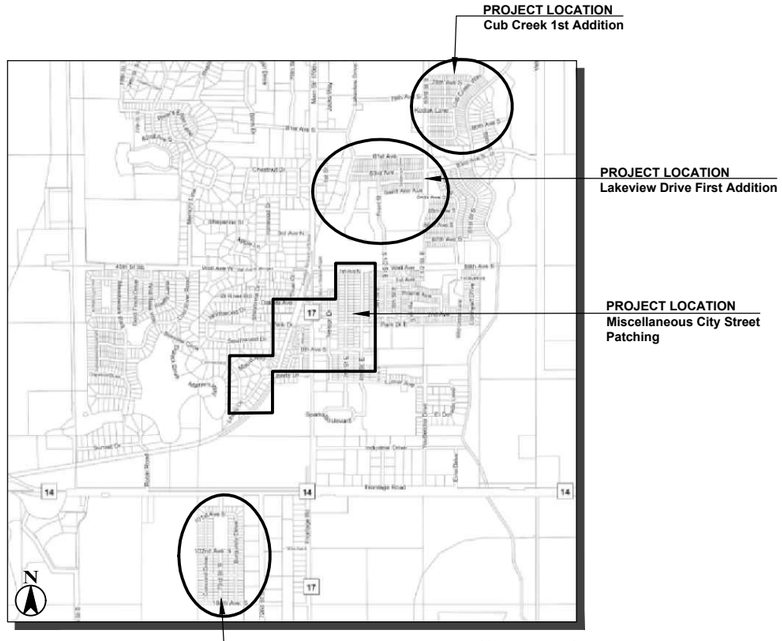
CONSTRUCTION PLANS
FOR
WATER, SEWER, STORM, & STREET IMPROVEMENT
DISTRICT Nos.: 2019-6, 2019-7, & 2021-3 FINAL
PAVEMENT LIFTS (VARIOUS LOCATIONS) &
MISCELLANEOUS CITY STREET PATCHING

PREPARED FOR

HORACE
NORTH DAKOTA



LOCATION MAP
NOT TO SCALE



SITE MAP
NOT TO SCALE

INDEX OF DRAWINGS	
SHEET NUMBER	SHEET(S) TITLE
G1	COVER
G2-G6	SCOPE OF WORK
G7	NOTES
G8	QUANTITIES
G9-G10	BASIS OF ESTIMATE
D1-D2	GENERAL DETAILS
TS1-TS4	TYPICAL SECTIONS
L1	LANDSCAPING
MK1	PAVEMENT MARKINGS
STD1	NDDOT STANDARD DRAWINGS

THIS PLAN SET CONTAINS 19 SHEETS

QUALITY REVIEW : _____

BY: *CITY ENGINEER*
CITY OF HORACE
CITY ENGINEER

APPROVED : _____

BY: *PROJECT ENGINEER*
INTERSTATE ENGINEERING, INC.
PROJECT ENGINEER

Know what's below. Call before you dig.

CITY OFFICIALS		
MAYOR: JEFF TRUDEAU	CITY ADMINISTRATOR: BRENTON HOLPER	
PWD: ADAM CARPENTER		
COUNCIL: STEPHANIE LANDSTROM	COUNCIL: NAOMI BURKLAND	
COUNCIL: SARAH VEIT	COUNCIL: RACHEL DWYER	

REV NO	DATE	BY	DESCRIPTION

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

Interstate Engineering
574 Main Street, Suite A
Horace, ND 58047
(701) 532.0438
www.interstateeng.com

SECTION G
1
SHEET NO.

© 2025, *INTERSTATE ENGINEERING, INC.*

X:\2024\ER\00\ER24-00-127 Maple Lakes Ph I Final Pavement Lift\20_CADD_ER2400127\080_Sheets\ER2400125126127_PLANS.dwg 1/29/2025

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

MEMO

To: Horace City Council
(Via email: bholper@cityofhorace.com)

From: James Dahlman, PE

Date: January 30th, 2025

Re: CR17 Shared Use Path (81st Ave to 76th Ave)
TMA-CRP-8-999(060); PCN 24432
Engineering Services Agreement
ER25-03-103.03

The City of Horace received funding for the next phase of the County Road 17 Shared Use Path. This phase will construct the path from 81st Avenue north to 76th Avenue. This project will be bid by the North Dakota Department of Transportation (NDDOT) to their design standards and specifications. Final plans are due to the NDDOT by August 1, 2025.

Please find the engineering services agreement for design and construction engineering services for CR 17 Shared Use Path (81st Avenue to 76th Avenue); TMA-CRP-8-999(060); PCN 24432 attached.

If you have any questions, please feel free to contact me at (701) 532-0438.
Thank You

ATTACHMENTS

THIS PAGE INTENTIONALLY LEFT BLANK

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT, made this 3rd day of FEBRUARY 2025, by and between The City of Horace, ND, hereinafter called the OWNER and Interstate Engineering, Inc., Horace, North Dakota, hereinafter called the ENGINEER.

Whereas the OWNER intends to do the **Design and Construction of CR 17 Shared Use Path (81st Avenue to 76th Avenue); TMA-CRP-8-999(060); PCN 24432** hereinafter called the PROJECT, in the County of Cass, State of North Dakota, and the ENGINEER agrees to perform the various professional engineering services required for the above-mentioned PROJECT.

NOW, THEREFORE, THIS AGREEMENT WITNESSETH:

SECTION A – BASIC ENGINEERING SERVICES

That for and in consideration of the mutual covenants and promises between the parties hereto, it is hereby agreed that the ENGINEER shall furnish engineering services as follows:

In connection with the above referenced project, Interstate shall develop plans which can be used for constructing the project.

1. The Engineer will conduct a Preliminary Design Phase with tasks as described in the Project Description and as detailed on the attached Manhours and Expense Budget. The Preliminary Design Phase will need to follow the NDDOT Design standards for Shared Use Paths.

   One copy of the completed Environmental Document will be furnished to the City of Horace.

2. The Engineer will provide Final Design and Bidding Phase services for work as described in the approved Environmental Document.

   Tasks shall be as described in the Project Description and Scope.

3. Items which are included in the scope are as follows:

   - Design of a pedestrian shared use path along County Road 17 in Horace meeting the NDDOT Design Standards, including concrete paving, striping, signing and delineation, etc.

SECTION B - CONSTRUCTION ENGINEERING SERVICES

1. The Engineer will provide the following Construction Engineering Services for the Construction Phase of the project including the following:

- Conduct the Preconstruction Conference
- Complete Daily Diaries for the Project
- Provide daily construction inspection meeting the NDDOT Construction Engineering Standards
- Provide Construction Surveying as required
- Provide material testing for the project as required
- Document quantities for pay items as required by the NDDOT CARS Manual
- Input Quantities and other Project information into the CARS system
- Prepare Progressive Estimates, change orders for the project
- Prepare As-Built Drawings for the Project

2. Items which are not included in the scope are as follows:

    - Geotechnical Soil Borings

SECTION C – COMPENSATION FOR BASIC ENGINEERING SERVICES

THE OWNER agrees to compensate the ENGINEER for engineering services based on the Engineer's Standard Hourly Rates in effect at the time the services are provided plus reimbursable expenses. The total compensation for Preliminary Engineering Phase including the preliminary engineering report, plans and specifications, bidding, and contracts shall not exceed **$56,775.50** without the approval of the Owner. Time will be charged from the actual start of work, which is prior to the signature date of the contract. Costs are shown in the Contract for the following Subconsultants to be used on the project:

- Class 1 Cultural Resources Inventory - Beaver Creek Archeology -> Estimated fee: $3,000.00. Not Included in amount above.

If the solicitation of views of agencies or the environmental document dictates the need for a field wetland delineation and a class 1 cultural resources inventory will be required, those services would be provided by subconsultants through Interstate Engineering. Those potential fees are not included in the basic fees outlined in Section A.

SECTION D – COMPENSATION FOR SPECIAL ENGINEERING SERVICES

In addition to the foregoing services and fees, the following special services and fees may be required:

1. Testing Laboratory services, laboratory tests, well tests, borings, specialized geological, hydraulic, or other studies may be recommended by the ENGINEER. The cost of such tests and/or studies shall be borne by the OWNER provided, however, that the OWNER shall be advised of and give consent to such tests and studies prior to their being made. Tests required by NDDOT specifications shall be considered automatically authorized by the OWNER.

2. The following special services shall be done by the ENGINEER upon request by the OWNER and compensation therefore shall be as outlined in the ENGINEER's most recent fee schedule.

   (A) Necessary data and filing maps for water rights, water adjudication, litigation, required metes and bounds surveys, or for other reasons.

   (B) Redesigns ordered by the OWNER after preliminary plans have been approved.

SECTION E –COMPENSATION FOR CONSTRUCTION ENGINEERING SERVICES PHASE

THE OWNER agrees to compensate the ENGINEER for engineering services based on the Engineer's Standard Hourly Rates in effect at the time the services are provided plus reimbursable expenses. The total compensation for Construction Engineering Phase shall not exceed **$76,583.00** without the approval of the Owner.

- Materials Testing Estimated Fee: $15,000.00. Not Included in amount above.

SECTION F – GENERAL PROVISIONS

1. Services performed by the ENGINEER under this agreement will be conducted in a manner consistent with the level of care, diligence and skill ordinarily possessed and exercised by members of the profession currently practicing in the same locality under similar conditions. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED. The parties' rights, liabilities, responsibilities and remedies with respect to the services, whether in contract or otherwise, shall be exclusively those expressly set forth in the Agreement. To the fullest extent permitted by law, the ENGINEER shall not, in any event, be liable to the OWNER for any special, indirect, incidental or consequential damages, including, but not limited to damages from delay, distribution, loss of product, loss of use, loss of profits or revenue, increased cost of operation, the cost of capital or the cost of purchased or replacement equipment, systems or power. The ENGINEER'S total liability to the OWNER for all claims, losses, damages and expenses resulting or arising, in any way, from the performing of the Services shall not exceed the limits of any professional liability insurance maintained by the ENGINEER. This agreement shall be governed by and interpreted in accordance with the laws of North Dakota.

2. Any reuse of the plan sheets and specifications on any extension of the project or any other project by any party without prior written verification or adaptation by the ENGINEER for the specific purpose intended, shall be as said party's sole risk without liability or legal exposure to the ENGINEER. Said party shall indemnify, defend and hold harmless from all claims, damages, losses and expenses including attorney's fees, arising out of or resulting from any such reuse. Any such verification or adaptation shall entitle the ENGINEER to further compensation at rates to be agreed upon by said party and the ENGINEER.

SECTION G – INTEREST ON UNPAID BALANCE

1. Interest at the rate of 1% per month shall be due and payable commencing 15 days after proper submittal of the bill for engineering services.

SECTION H - CONTRACT TERMINATION

1. This Agreement may be terminated by either party at any time upon thirty (30) days written notice. This written notice will be mailed or hand delivered. In the event that such termination should take place at any time other than at the completion of the work to be performed by the ENGINEER, the ENGINEER will be paid by the OWNER for all work completed to date of termination based on the ENGINEER's rate schedule in effect when the services were provided.

2. Reproducible copies of all drawings, prints, plans, and field notes prepared by the ENGINEER, prior to such termination shall be made available to the OWNER. The cost shall be charged to the OWNER as set forth in our most recent fee schedule.

3. Controversies arising out of the work that cannot be settled by mutual agreement shall be submitted to non-binding mediation.

SECTION I - RECORD RETENTION

1. Complete and accurate records of the work done pursuant to this Agreement shall be kept by ENGINEER for a minimum of six (6) years following termination of this Agreement. The retention period shall be automatically extended during the course of any administrative or judicial action involving the OWNER regarding matters to which the records are relevant. The retention period shall be automatically extended until the administrative or judicial action is finally completed or until the OWNER's authorized agent notifies the ENGINEER, in writing, that the records no longer need to be kept. The books, records, documents, and accounting procedures and practices of the ENGINEER relevant to this Agreement shall be subject to examination by the OWNER and the State Auditor of North Dakota.

2. INSTRUMENTS OF SERVICE: All reports as well as original final reproducible drawings, plans, calculations, specifications, studies, software programs, tapes, models, electronic files, notes and memoranda, assembled or prepared by ENGINEER, or furnished by ENGINEER, in connection with this contract shall remain the property of the ENGINEER and will be transmitted to the OWNER as instruments of service as requested by the OWNER.

3. REUSE OF DOCUMENTS: Any reuse of said documents on any extension of the project or any other project by the OWNER without prior written verification or adaptation by ENGINEER for the specific purpose intended, shall be at the OWNER's sole risk without liability or legal exposure to ENGINEER. The OWNER shall indemnify, defend and hold harmless from all claims, damages, losses and expenses including attorney's fees, arising out of or resulting from any such reuse by the OWNER. Any such verification or adaptation shall entitle ENGINEER to further compensation at rates to be agreed upon by the OWNER and ENGINEER.

4. DISSEMINATION OF INFORMATION: The ENGINEER shall have the right, but shall not be obligated, to retain copies of documents and to use same for any purpose unless such use can be reasonably expected to cause harm to the OWNER or constitute a violation of patent/copyright protection. Copies of said documents shall not be made available by the ENGINEER to any individual or organization without the prior written approval of the OWNER except as required as normal incident of completion of the work of the ENGINEER, unless such documents shall have been previously made public by the OWNER.

SECTION J - INDEMNITY

1. The ENGINEER agrees to indemnify and save and hold the OWNER, City Council, officers, employees, and agents, other than the facility construction contractors, harmless from any and all claims or causes of action arising from the negligence of ENGINEER or ENGINEER's employees, officers, agents, or subcontractors of ENGINEER or ENGINEER's subcontractor's employees. This clause shall not be construed to bar any legal remedies the ENGINEER may have for the OWNER's failure to fulfill its obligations pursuant to this Agreement.

2. The liability of the ENGINEER, its officers, agents, employees, subcontractors, or subcontractor's employees for the OWNER's claims of loss, injury, death, or damage, including without limitation, the OWNER's claims of contribution and indemnification with respect to third party claims, shall not exceed in the aggregate the amount of $1,000,000 for any number of claims arising out of any single occurrence.

SECTION K - INSURANCE

The ENGINEER shall not commence work under this Agreement until it has obtained, at its own cost and expenses, all insurance required herein. Insurance coverage is subject to approval of the OWNER and shall be maintained by the ENGINEER until final completion of the work. The ENGINEER further agrees that it shall at all times during the term of this Agreement have and keep in force the following types of insurance in amounts sufficient to meet the maximum liability provided above:

1. Comprehensive General Liability – $1,000,000 Single; Each Occurrence $2,000,000: Aggregate;
2. Comprehensive Automobile Liability – $1,000,000: Aggregate;
3. Professional Liability; $5,000,000: Each Occurrence $5,000,000: Aggregate;
4. Contractual Liability; and
5. Workers' compensation sufficient to meet statutory requirements in the State of North Dakota.

SECTION L - SUBCONTRACTS

The ENGINEER shall not subcontract any other portion of the work to be performed under this Agreement nor assign this Agreement without the prior written approval of the OWNER. The ENGINEER shall ensure and require that any subcontractor of the ENGINEER used to perform any portion of this Agreement shall report to and bill the ENGINEER directly. The ENGINEER shall be solely responsible for the breach in performance or non-performance of any subcontractor.

SECTION M - GOVERNING LAW

This Agreement will be construed in accordance with and governed by North Dakota law.

SECTION N - FORBEARANCE

The failure or delay of any party to insist on the timely performance of any of the terms of this Agreement, or the waiver of any particular breach of any of the terms of this Agreement, at any time, will not be construed as a continuing waiver of those terms or any subsequent breach, and all terms will continue and remain in full force and effect as if no forbearance or waiver had occurred.

SECTION O - SEVERABILITY

If any court of competent jurisdiction declares any provision or part of this Agreement invalid or unenforceable, all remaining terms and provisions of this Agreement will remain binding and enforceable; however, the parties will reconvene negotiations and will reform or replace any invalid, illegal, or unenforceable provision or portion of this Agreement with an alternative provision that is enforceable and bears as close resemblance as possible to any provision determined invalid, illegal, or unenforceable.

IN WITNESS WHEREOF, the parties hereto have affixed their hands and seals this 3rd day of FEBRUARY 2025.

OWNER: CITY OF HORACE

WITNESS:

_____ BY: _____

ENGINEER: INTERSTATE ENGINEERING, INC.

WITNESS:

_____ BY: _____

THIS PAGE INTENTIONALLY LEFT BLANK

TMA-CRP-8-999(060)
PCN 24432
CR17 Shared Use Path (81st Ave to 76th Ave)
ER25-03-103.03

	DESIGN			CONSTRUCTION	
	Hours	Rate	Total	Hours	Total
ENG X	15	$ 265.00	$ 3,975.00	8	$ 2,120.00
ENG IX	25	$ 250.00	$ 6,250.00	10	$ 2,500.00
ENG V	135	$ 190.00	$ 25,650.00	125	$ 23,750.00
ENG III	45	$ 160.00	$ 7,200.00	120	$ 19,200.00
TECH X	25	$ 222.00	$ 5,550.00	22	$ 4,884.00
SURV IV	20	$ 153.00	$ 3,060.00	40	$ 6,120.00
TECH II	37	$ 102.00	$ 3,774.00	68	$ 6,936.00
TECH II		$ 102.00	$ -	54	$ 5,508.00
SURV II	8	$ 123.00	$ 984.00	40	$ 4,920.00
			$ 56,443.00		$ 75,938.00
Mileage	100	$ 0.85	$ 85.00	300	$ 255.00
	50	$ 0.95	$ 47.50	200	$ 190.00
Office Supply		$ 200.00	$ 200.00	200	$ 200.00
Subconsultant		Beaver Creek	$ 3,000.00	Material Testing	$ 15,000.00
Totals			**$ 59,775.50**		**$ 91,583.00**

THIS PAGE INTENTIONALLY LEFT BLANK

MANHOURS & EXPENSE BUDGET
ENGINEERING AGREEMENT
DESIGN ENGINEERING
TMA-CRP-8-999(060); PCN 24432 CR17 SHARED USE PATH (81ST AVE TO 76TH AVE)
HORACE, NORTH DAKOTA
ER25-03-103.03

	TASK	ENG X	ENG IX	ENG V	ENG V	TECH X	SURV IV	SURV II	Clerical TECH II	ENG III	Sub Consultant	Sub Consultant Cost	Expenses & Misc	Survey Miles	Travel Miles
		DAMON	JAMES	ERIC	JASON	TIM P	ZACH	BRAYDEN	ISABEL	TOBY					
1	PHASE I FIELD REVIEW & SCOPE FOR PHASE I														
.1	Field Review			1	1										10
Phase I (Field Review and Scope) Sub-Total		0	0	1	1	0	0	0	0	0	0	$0.00	$0.00	0	10
2	PHASE I PROJECT MANAGEMENT & COORDINATION														
.1	Progress Meetings (2)		1	1	1										10
.2	Quality Control / Quality Assurance	2				6									
.3	Project Management & Sub Consultant Coordination		1												
	Phase I (Project Management & Coordination) Sub-Total	2	2	1	1	6	0	0	0	0	0	0	0	0	10
3	PHASE I GROUND SURVEY AND RIGHT-OF-WAY														
3.1	Ground Survey / Safety Review			1	1	1	13	8		8				50	20
3.2	Project Coordinate System and Surface Model					2	1								
3.3	Survey Transmittal														
3.4	Design Alignment		2		6										
	Phase I (Ground Survey and ROW) Sub-Total	0	2	1	7	3	14	8	0	8	0	0	0	50	20
4	PHASE I ECL/ DECISION DOCUMENT														
4.1	Data Collection				1										
4.2	Solicitation of Views				2				8						
4.3	ECL/Decision Document Existing Conditions		1		2										
4.4	Purpose & Need		1		1										
4.5	Utilities		2		1										
4.6	Roadway Hydraulics			1											
4.7	Preliminary Earthwork Calculations														
•	Title Sheet, Table of Contents, Standard Drawings, Scope of														
•	Preliminary Estimated Quantities														
•	Existing and Proposed Typical Sections														
•	Develop Detail Drawings														
•	Develop Plan & Profile Sheets & Details														
•	Review Existing Drainage & Develop Drainage Plans														
•	Develop Cross Section Sheets & Earthwork Volumes					3									
•	Develop Erosion Control Plans														
•	Develop Preliminary on-site Mitigation Plans														
4.8	Construction Traffic Control														
4.9	Roadway Typical Section														
4.10	Environmental Data Collection				2										
4.11	Section 106 Compliance			1	1						Beaver Creek	3000			
4.12	Wetland Delineation	2			1										
4.13	Environmental Analysis & Permitting	1													
4.14	Comments & Coordination				4				2						
4.15	Section 4(f) & 6(f) Evaluation				2										
4.16	Right-of-Way				1		4								
4.17	CATEX By Definition				4				2						

	TASK	ENG X	ENG IX	ENG V	ENG V	TECH X	SURV IV	SURV II	Clerical TECH II	ENG III	Sub Consultant	Sub Consultant Cost	Expenses & Misc	Survey Miles	Travel Miles
4.18	Assemble & Distribute Draft ECL/Decision Document				2				4						
4.19	Prepare & Submit Final ECL/ Decision Document				2				4						
	Phase I (ECL/Decision Document) Sub-Total	3	4	2	26	3	4	0	20	0	0	3000	0	0	0
		DAMON	JAMES	ERIC	JASON	TIM P	ROD	BRAYDEN	ISABEL	TOBY					
	PHASE I REIMBURSABLES														
•	Total Mileage from Tasks Listed Above														50
•	Total Survey Supplies Listed Above												$50.00		
•	Printing												$0.00		
	- 5 Draft ECL/Decision Document												$50.00		
	- 6 Final ECL/Decision Document												$50.00		
•	Motel 0 Days @ $90.00 / Day												$0.00		
•	Meal 0 Days @ $35.00 / Day												$0.00		
	Total Reimbursables	0	0		0	0	0	0	0	0			$150.00	50	50
TOTAL PHASE I		5	8	5	35	12	18	8	20	8	$0.00	$3,000.00	$150.00	50	90
5	PHASE II PLAN PREPARATION														
5.1	Construction Plan Preparation														
•	Title Sheet, Table of Contents, Standard Drawings, Scope of Work		1		1				1	1					
•	Plan Notes		1	2					2	4					
•	Estimated Quantities		1	1	1				1	2					
•	Basis of Estimate/Special Provisions		1	1	2					1					
•	Existing and Proposed Typical Sections		1		2					2					
•	Develop Detail Drawings		1	1	2					2					
•	Develop Plan & Profile Sheets & Details			1	8	1				8					25
•	Review Existing Drainage & Develop Drainage Plans			1	2	1				2					
•	Develop Cross Section Sheets & Earthwork Volumes	1	1	4	8										
•	Develop Signing & Pavement Marking Plan			1	4					4					
•	Develop Traffic Control Plans			1	1					1					
•	Develop Erosion Control Plans			1	1										
•	Develop Preliminary & Final Cost Estimates	1	1	2	1					3					
•	Develop Survey Control Alignment Data Sheets for existing &			1	2	1	2			2					
•	Utility Adjustments Services		1	1	1	1									
•	Provide Utility Certifications to Design Division		1		1										
•	Lighting Sheets														
•	Environmental Commitments Sheet			1	1					1					
5.2	Plans in Hand Field Inspection		1	1	1										5
•	Plan Revisions			2	4	6				4					
5.3	Final Plan Submittal	5	2	8	8	3			6						0
•	Final Plan Design Documentation Submittal		2	4	4				2						
5.4	Bid Phase Services	3	2	2	4				5						
	Phase II (Plan Preparation) Sub-Total	10	17	36	59	13	2	0	17	37	0	$0.00	0	0	30
	PHASE II REIMBURSABLES														
•	Total Mileage from Tasks Listed Above														
•	Total Survey Supplies & Printing Listed Above												$0.00		
•	Motel 0 Days @ $90.00 / Day												$100.00		
•	Meal 0 Days @ $35.00 / Day												$0.00		
	Subtotal Reimbursables	0	0	0	0	0	0	0	0	0	$0.00	$0.00	$100.00	0	0
TOTALS PHASE II		10	17	36	59	13	2	0	17	37	$0.00	$0.00	$100.00	0	30
	Grand Total Phase I and Phase II	**15**	**25**	**41**	**94**	**25**	**20**	**8**	**37**	**45**	**$0.00**	**$3,000.00**	**$250.00**	**50**	**120**

MANHOURS & EXPENSE BUDGET
ENGINEERING AGREEMENT
CONSTRUCTION ENGINEERING
TMA-CRP-8-999(060); PCN 24432 CR17 SHARED USE PATH (81ST AVE TO 76TH AVE)
HORACE, NORTH DAKOTA
ER25-03-103.03

TASK	ENG X	ENG IX	ENG V	ENG V	TECH X	SURV IV	SURV II	Clerical TECH II	ENG III	TECH II	Sub Consultant	Sub Consultant Cost	Expenses & Misc	Survey Miles	Travel Miles
	DAMON	JAMES	ERIC	JASON	TIM P	ZACH	BRAYDEN	ISABEL	TOBY						
6 PHASE IV CONSTRUCTION ENGINEERING															
.1 Preconstruction Conference	1	1	2	2	4			8							
.2 Construction Surveying		1	4	4	16	30	40						50	50	
.3 Project Inspection	1	5	16	54					120	54			100		150
.4 Project Records	3	2	17	10				40					50		
.5 As-Built Drawings	3	1	8	8	2	10		20							
Subtotal Construction Engineering	8	10	47	78	22	40	40	68	120	54	1500	$0.00	200	50	150
TOTALS PHASE IV	8	10	47	78	22	40	40	68	120	54	1500	$0.00	200	50	150

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

MEMO

To: Horace City Council
(Via email: bholper@cityofhorace.com)

From: James Dahlman, PE

Date: January 30th, 2025

Re: Water, Sewer, Storm, and Street Improvement District No. 2025-4
Deer Creek Estates Addition
Horace, North Dakota
ER24-03-103.29

Please see the attached preliminary engineering report for the above-referenced project.

This report is being sent for your review and approval. After the report is approved, the next step is to direct the Engineer to prepare detailed plans and specifications.

If you have any questions, please feel free to contact me at (701) 532-0438.
Thank You

ATTACHMENTS

INTERSTATE ENGINEERING

Professionals You Need, People You Trust.

PRELIMINARY ENGINEERING REPORT FOR

WATER, SEWER, STORM, AND STREET IMPROVEMENT DISTRICT NO. 2025-4

(DEER DREEK ESTATES ADDITION)

HORACE, NORTH DAKOTA

JANUARY 15, 2025

IE PROJECT NO.: ER24-03-103.29

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of North Dakota.

By: _____

Loren T Bothun, PE

License No. PE-40680

Date: January 15, 2025

Prepared by: LTB

INTERSTATE ENGINEERING, INC.

574 Main Street, Suite A | Horace, ND 58047 | (701) 532.0438 | interstateeng.com

INTRODUCTION:

Horace is in east central North Dakota along the Sheyenne River between Cass County Highway 17 and 52nd Avenue on Cass County Highway 17. The area economy is based upon agriculture, light manufacturing, and commercial business. Horace continues to grow at an accelerated rate and was estimated to have a population of 5,643 residents in 2023, according to the U.S. census website. This report reviews the proposed infrastructure improvements to the Deer Creek Estates 1st Addition within the City of Horace. A project location map is included at the end of this report.

EXISTING CONDITIONS:

Deer Creek Estates Addition is located east of Cass County Highway 17 and north of Deer Creek Parkway. The north side of this subdivision is bordered by Ashwood 3rd Addition, a rural subdivision annexed into the City of Horace. The east side of Deer Creek Estates Addition borders the Deer Creek Addition within the City of Fargo.

Deer Creek Estates Addition will be access from the south from Deer Creek Parkway. The existing area is unimproved, agricultural land that is currently being used to stockpile excess grading materials and topsoil. Additionally, Deer Creek Parkway is a rural asphalt section that is scheduled to be improved to an urban section during the 2025 construction season.

PROPOSED IMPROVEMENTS:

The proposed project consists of the construction of a residential addition to the City of Horace. The addition is proposed to have 27 Residential lots, 10 of which are multi-family twin homes.

The proposed project consists of the following improvements:

- 8" Sanitary sewer mains, 4" services and manholes
- 6" and 8" Water main, services and fittings
- 6" fire hydrants and piping
- Storm sewer mains, laterals, catch basins and manholes
- Hot bituminous pavement surfaced streets with curb and gutter
- Concrete Sidewalks
- Seeding and hydro-mulching
- Street lighting
- Fence

The method of installation for the proposed improvements will be traditional open cut methods.

This area is in the Cass Rural Water District (CRWD) service territory and will be serviced by Cass Rural. Proposed water mains will be extended from the south side of Deer Creek Parkway. The developer will need to execute a developer agreement with Cass Rural Water District.

Wastewater service will be provided by the City of Horace. Sanitary sewer lift station SA-13 and forcemain have previously been installed near the southeast quadrant of Cass County Highway 17 and Deer Creek Parkway. The proposed main will be installed within the right-of way of Cedar Drive to maximize collection efficiency as well as constructability. Additionally, stub outs will be installed along the east and west ends of the 40ft shared access/utility easement for future connection to service the twin homes within the central part of the development.

Sanitary Sewer design will be in accordance with the recommended Standards for Wastewater Facilities. The addition is expected to generate 9,700 gallons per day. A peaking factor of 4.25 was used and the design peak flow of 29 gallon per minute (GPM) and an 8" main was sized to accommodate this flow.

Access to the addition will be from the north side of Deer Creek Parkway. It is expected that Deer Creek Estates Addition and Deer Creek Parkway will be constructed with separate contracts, however, coordination of milestones, completion dates, and access to each site will be taken into consideration during the design of the project.

Proposed interior streets for the addition will be a 38' back of curb width to back of curb urban section, hot bituminous pavement with concrete curb and gutter and inlets along the sides for drainage. The typical section is attached to this report.

Lots and streets will be graded to drain storm water towards drainage facilities along the property lines and drainage easements. The storm sewer system will be designed to accommodate a 5-yr storm event. All storm water runoff in the development will flow to a stormwater pond currently under construction as part of the Deer Creek Estates 2nd and 3rd Addition project. The captured storm water will then be discharged via a lift station into City of Horace storm sewer system, where it will be conveyed to Southeast Cass Water Resource District Legal Drain 27.

Disturbed right of way and ditches will have topsoil replaced, seeded and hydro mulched. Topsoil will be stockpiled along the right-of-way or within a construction easement during construction.

ATTACHMENTS:

- Project Location Map
- District Boundary Map
- Engineer's Opinion of Probable Project Cost
- Deer Creek Estates Addition Plat
- Developer's Petition for Improvements
- Typical Section
- Preliminary Special Assessments

APPROVALS & PERMITS:

All improvements will be designed in accordance with current engineering standards. Water and sanitary sewer improvements are subject to ND Department of Environmental Quality review and approval. Construction activities are subject to the ND Department of Environmental Quality storm water discharge requirements. The Contractor will be responsible for the notice of intent (NOI) permit application and associated storm water pollution prevention plan (SWPPP). A storm water permit for the outlet will need to be obtained. Construction plans will be submitted for approval prior to construction.

METHOD OF CONSTRUCTION:

The project would be designed and constructed in a single phase. It is expected that one contract would be utilized.

PROJECT FINANCING:

The Engineer's Opinion of Probable Project Cost is: $2,189,000.00

The project will be special assessed to the benefitting areas.

SPECIAL ASSESSMENT DISTRICT DETERMINATION:

The special assessment district boundary was determined based on properties receiving direct benefit. The attached special assessment district boundary map displays which areas are included in the improvement district. Local improvements include water mains and services, sanitary sewer mains and services, local streets, and storm sewer conveyance system.

Prepared by

Interstate Engineering, Inc.

are accurate and reliable within the limits of the current state of the art, IEI cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. IEI makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty. Maps are for graphical purposes only and do not represent a legal survey. Every effort has been made to ensure that these data

PROJECT LOCATION MAP
Water and Sewer Improvement District No. 2025-4
(Deer Creek Estates Addition)

Riverdale Dr.

17

60th Ave S

Cedar Dr

Deer Creek Parkway

62nd Ave. S

Main St/ 170th Ave SE

68th St S

Deer Creek Loop

64th Ave S

64th Ave S

N

0 200 400
Feet

Legend

- Parcels
- Horace City Outline
- Project Location

ProjectLocation

X:\2024\ER03\ER24-03-103 City of Horace\ER24-03-103.29 Deer Creek Estates First\40 GIS\ProjectInfo\GIS_ProjectInfo.aprx

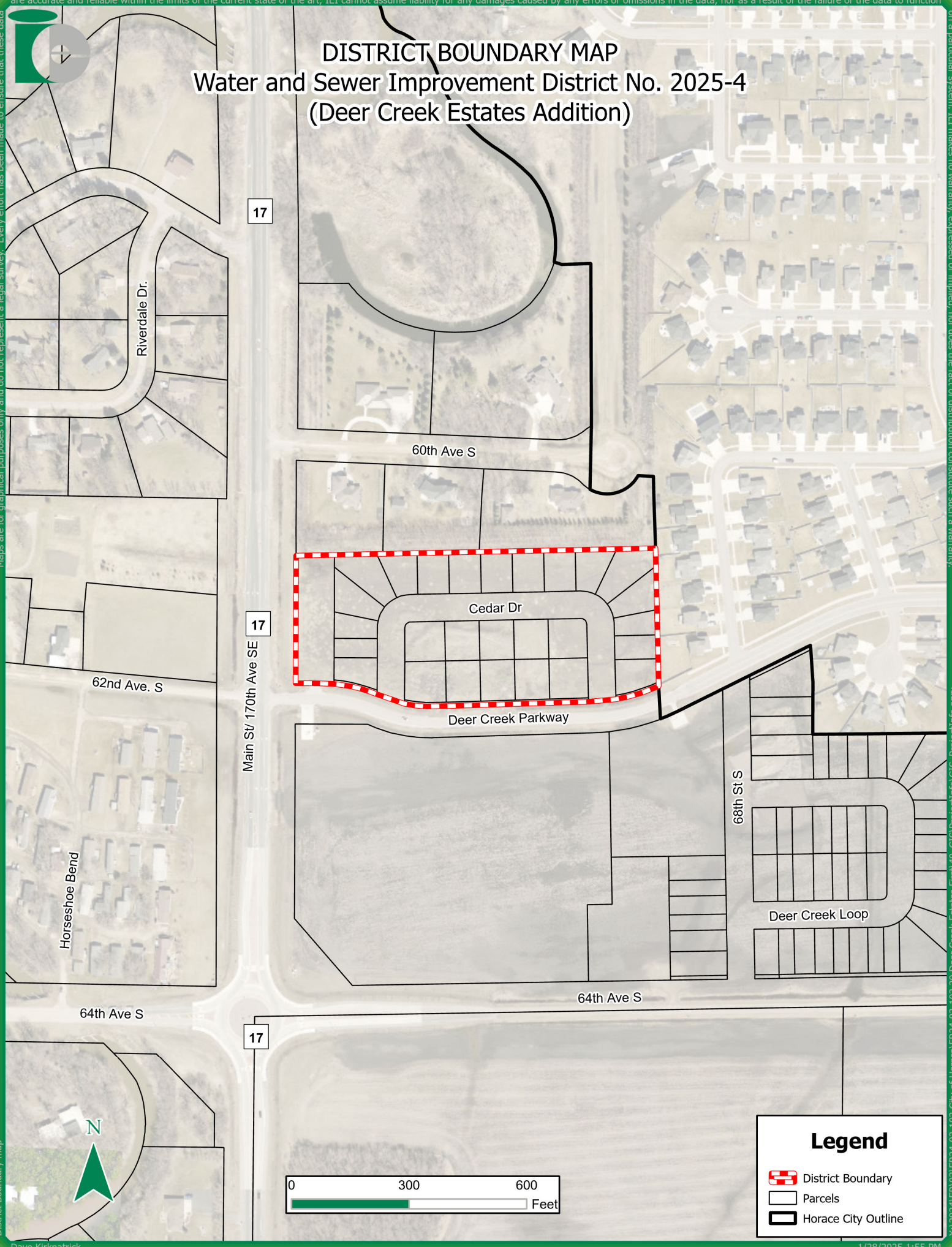
Dave.Kirkpatrick

1/28/2025 1:55 PM

are accurate and reliable within the limits of the current state of the art, IEI cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. IEI makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty.

Maps are for graphical purposes only and do not represent a legal survey. Every effort has been made to ensure that these data

DISTRICT BOUNDARY MAP
Water and Sewer Improvement District No. 2025-4
(Deer Creek Estates Addition)



District Boundary map

X:\2024\ER103\ER24-03-103 City of Horace\ER24-03-103.29 Deer Creek Estates First\40 GIS\ProjectInfo\GIS_ProjectInfo.aprx

Dave.Kirkpatrick

1/28/2025 1:55 PM

Water, Sewer, Storm and Street Improvement District No. 2025-4
(Deer Creek Estates Addition)
Opinion of Probable Project Cost
Horace, North Dakota
ER24-03-103.29

Deer Creek Estates Addition
Horace, ND
Engineer's Opinion of Probable Cost - 12/18/2024
Lowry Engineering - 5306 51st Ave South Suite A Fargo, ND 58104
LE#: 24171
PH: 701.235.0199

GENERAL WORK ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
1	Mobilization	1	LS	$ 88,000.00	$ 88,000.00
2	Traffic Control	1	LS	$ 2,000.00	$ 2,000.00
				TOTAL	$ 90,000.00

EXCAVATION, EARTHWORK, FINISH GRADING AND EROSION CONTROL ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
3	Topsoil Stripping & Spreading	14,000	CY	$ 5.00	$ 70,000.00
4	Common Excavation	100	CY	$ 6.50	$ 650.00
5	Import	24,000	CY	$ 14.00	$ 336,000.00
6	Seeding & Hydromulch	32,869	SY	$ 1.00	$ 32,869.00
7	Seeding & Erosion Control Blanket	11,865	SY	$ 2.40	$ 28,476.00
8	Inlet Protection Device	17	EA	$ 265.00	$ 4,505.00
				TOTAL	$ 472,500.00

ROADWAY ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
9	Subgrade Preparation	4,399	SY	$ 3.50	$ 15,396.50
10	Geotextile Fabric	4,399	SY	$ 3.15	$ 13,856.85
11	Aggregate Base	611	CY	$ 60.00	$ 36,660.00
12	Hot Bituminous Pavement - 4.5"	3,560	SY	$ 27.00	$ 96,120.00
13	Curb & Gutter - Mountable Style	1,937	LF	$ 26.50	$ 51,330.50
14	Drain Tile - 4" Perforated SCHD 40 PVC	1,937	LF	$ 9.50	$ 18,401.50
15	Concrete Sidewalk - 4"	13	SY	$ 60.00	$ 780.00
16	Signing	32	SF	$ 23.50	$ 752.00
17	Sign Post	30	LF	$ 11.30	$ 339.00
18	Residential Sump Pump Connection Type 1 (Structure)	17	EA	$ 500.00	$ 8,500.00
19	Residential Sump Pump Connection Type 2 (Pipe)	12	EA	$ 600.00	$ 7,200.00
20	Residential Sump Pump Connection Type 3 (Drain Tile)	6	EA	$ 375.00	$ 2,250.00
				TOTAL	$ 251,586.35

SANITARY SEWER ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
21	Sanitary Sewer - 8" PVC SDR-35	913	LF	$ 70.00	$ 63,910.00
22	Sanitary Sewer Service - 4" PVC SCH 40	1,563	LF	$ 41.00	$ 64,083.00
23	Standard Manhole	6	EA	$ 5,850.00	$ 35,100.00
24	Service Connection	31	EA	$ 600.00	$ 18,600.00
25	Connect to Ex. Sanitary Stub	1	EA	$ 2,100.00	$ 2,100.00
				TOTAL	$ 183,793.00

WATER SUPPLY ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
26	Water Main - 8" PVC C-900	1,024	LF	$ 65.00	$ 66,560.00
27	Water Main - 6" PVC C-900	27	LF	$ 53.00	$ 1,431.00
28	Water Service Line - 1" Poly	1,320	LF	$ 25.00	$ 33,000.00
29	Gate Valve & Box - 8"	2	EA	$ 3,600.00	$ 7,200.00
30	Gate Valve & Box - 6"	2	EA	$ 2,800.00	$ 5,600.00
31	Hydrant	2	EA	$ 7,200.00	$ 14,400.00
32	Water Service Connection	31	EA	$ 550.00	$ 17,050.00
33	Curb Stop & Box - 1"	31	EA	$ 700.00	$ 21,700.00
34	Connect to Ex. Water Main Stub	2	EA	$ 1,700.00	$ 3,400.00
				TOTAL	$ 170,341.00

STORM SEWER ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
35	12" Storm Conduit	1,094	LF	$ 58.00	$ 63,452.00
36	15" Storm Conduit	153	LF	$ 70.00	$ 10,710.00
37	18" Storm Conduit	404	LF	$ 77.00	$ 31,108.00
38	24" Storm Conduit	345	LF	$ 89.00	$ 30,705.00
39	Storm Sewer - Yard Inlet - 27"	2	EA	$ 2,302.00	$ 4,604.00
40	Storm Sewer - Manhole/Inlet - 48"	8	EA	$ 3,700.00	$ 29,600.00
41	Storm Sewer - Manhole/Inlet - 60"	3	EA	$ 5,600.00	$ 16,800.00
42	Storm Sewer - Single Box Inlet	4	EA	$ 3,400.00	$ 13,600.00
43	Connect to Ex. Storm Stub	1	EA	$ 1,500.00	$ 1,500.00
				TOTAL	$ 202,079.00

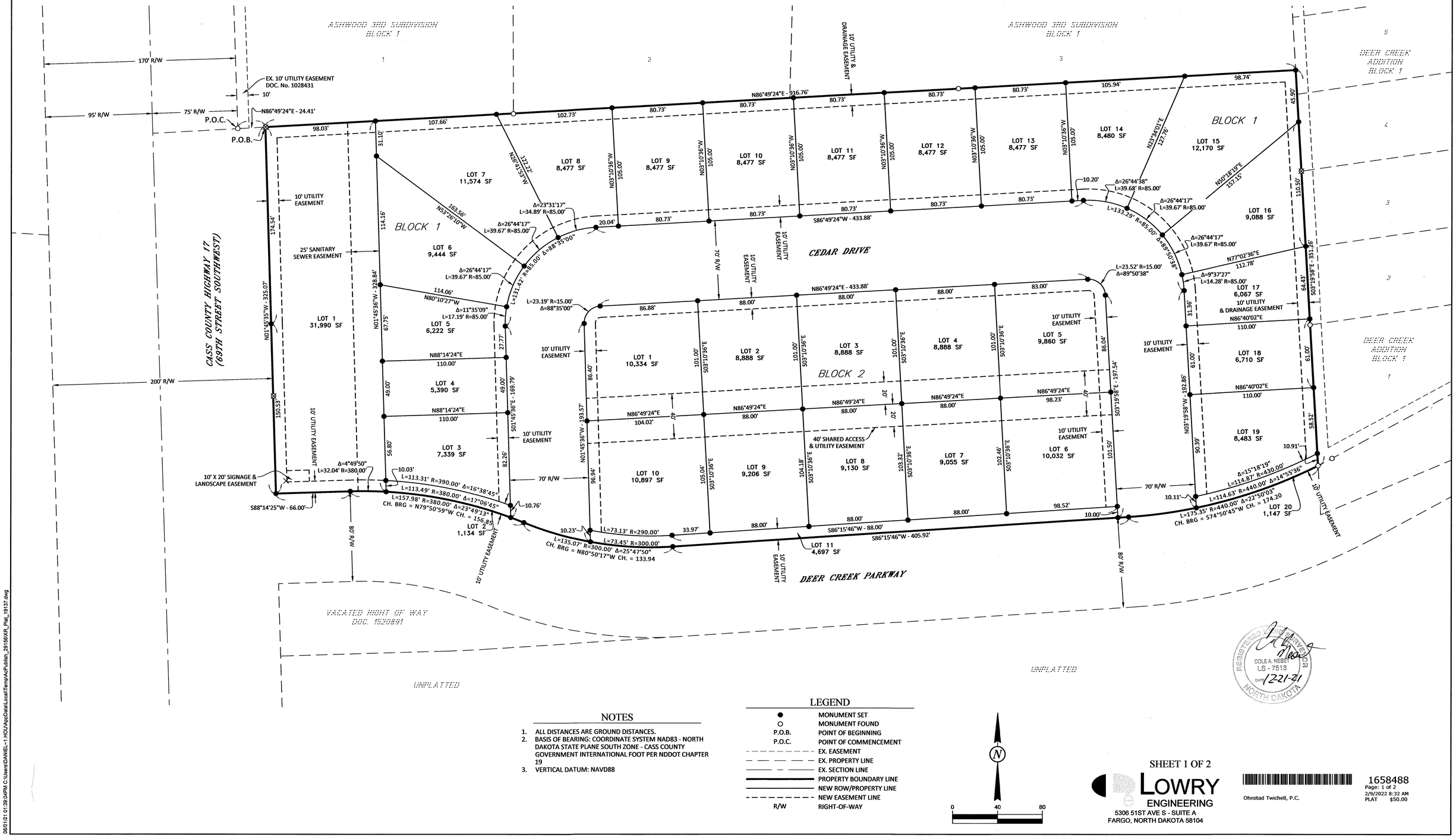
LANDSCAPING, ELECTRICAL, AND MISC. ITEMS

No.	Bid Item	Quantity	Unit	Unit Price	Total
44	Fence	1,706	LF	$ 100.00	$ 170,600.00
45	Lighting & Electrical	1	LS	$ 115,000.00	$ 115,000.00
				TOTAL	$ 285,600.00
				SUBTOTAL:	$ 1,655,899.35
				~~**Contingencies**~~ ~~10.00%~~	~~$ 165,589.94~~
				~~**GRAND TOTAL:**~~	~~$ 1,821,000.00~~

Opinion of Probable Bid Cost	$1,655,899.35
Contingencies	$165,600.65
Opinion of Probable Construction Cost	$1,821,500.00
Engineering, Legal, Admin and Bonding	$367,500.00
Opinion of Probable Project Cost	$2,189,000.00

DEER CREEK ESTATES ADDITION

PART OF THE SW 1/4 OF THE SW 1/4 OF SECTION 5, TOWNSHIP 138 NORTH, RANGE 49 WEST OF THE FIFTH PRINCIPAL MERIDIAN TO THE CITY OF HORACE, CASS COUNTY, NORTH DAKOTA



NOTES

1. ALL DISTANCES ARE GROUND DISTANCES.
2. BASIS OF BEARING: COORDINATE SYSTEM NAD83 - NORTH DAKOTA STATE PLANE SOUTH ZONE - CASS COUNTY GOVERNMENT INTERNATIONAL FOOT PER NDDOT CHAPTER 19
3. VERTICAL DATUM: NAVD88

LEGEND

●	MONUMENT SET
○	MONUMENT FOUND
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
	EX. EASEMENT
	EX. PROPERTY LINE
	EX. SECTION LINE
	PROPERTY BOUNDARY LINE
	NEW ROW/PROPERTY LINE
	NEW EASEMENT LINE
R/W	RIGHT-OF-WAY

N

0 40 80

REGISTERED LAND SURVEYOR
COLE A. NIEST
LS - 7513
DATE 12/21/21
NORTH DAKOTA

SHEET 1 OF 2

LOWRY ENGINEERING
5306 51ST AVE S - SUITE A
FARGO, NORTH DAKOTA 58104

Ohnstad Twichell, P.C.

1658488
Page: 1 of 2
2/9/2022 8:32 AM
PLAT $50.00

06/01/21 01:39:04PM C:\Users\DANIEL~1.HOU\AppData\Local\Temp\AcePublish_29156\XR_Plat_19137.dwg

DEER CREEK ESTATES ADDITION

PART OF THE SW 1/4 OF THE SW 1/4 OF SECTION 5, TOWNSHIP 138 NORTH, RANGE 49 WEST OF THE FIFTH PRINCIPAL MERIDIAN TO THE CITY OF HORACE, CASS COUNTY, NORTH DAKOTA

SURVEYOR'S CERTIFICATE

I, COLE A. NESET, REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NORTH DAKOTA, DO HEREBY CERTIFY ON THIS 21st DAY OF December, 2021, THAT THE ATTACHED PLAT OF DEER CREEK ESTATES ADDITION, BEING A PLAT OF THAT PART OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 5, TOWNSHIP 138 NORTH, RANGE 49 WEST, OF THE FIFTH PRINCIPAL MERIDIAN, IN THE CITY OF HORACE, CASS COUNTY, NORTH DAKOTA, IS A TRUE AND CORRECT REPRESENTATION OF THE SURVEY THEREOF, THAT ALL DISTANCES ARE CORRECTLY SHOWN ON SAID PLAT IN FEET AND DECIMALS OF A FOOT, AND THAT THE MONUMENTS FOR THE GUIDANCE OF FUTURE SURVEYS HAVE BEEN PLACED IN THE GROUND AS SHOWN, AND THAT SAID ADDITION IS DESCRIBED AS FOLLOWS, TO-WIT:

COMMENCING AT THE SOUTHWEST CORNER OF LOT 1, BLOCK 1, ASHWOOD 3RD SUBDIVISION; THENCE N86°49'24"E ALONG THE SOUTH LINE OF SAID BLOCK 1 A DISTANCE OF 24.41 FEET TO THE EAST LINE OF CASS COUNTY HIGHWAY 17 RIGHT OF WAY AND THE POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF ASHWOOD 3RD SUBDIVISION CONTINUING N86°49'24"E A DISTANCE OF 916.76 FEET TO THE WEST LINE OF BLOCK 1 OF DEER CREEK ADDITION; THENCE S03°19'58"E ALONG SAID WEST LINE A DISTANCE OF 351.26 FEET TO THE NORTH LINE OF THE DEER CREEK PARKWAY RIGHT OF WAY; THENCE WESTERLY ALONG SAID NORTH LINE ON AN ARC CONCAVE TO THE NORTH WITH A RADIUS OF 440.00 FEET FOR AN ARC DISTANCE OF 175.35 FEET; THENCE CONTINUING ALONG SAID NORTH LINE S86°15'46"W A DISTANCE OF 405.92 FEET; THENCE CONTINUING ALONG SAID NORTH LINE ON A WESTERLY CURVE CONCAVE TO THE NORTH WITH A RADIUS OF 300.00 FEET FOR AN ARC DISTANCE OF 135.07 FEET; THENCE CONTINUING ALONG SAID NORTH LINE WESTERLY ON A REVERSE CURVE CONCAVE TO THE SOUTH WITH A RADIUS OF 380.00 FEET FOR AN ARC DISTANCE OF 157.98 FEET; THENCE CONTINUING ON SAID NORTH LINE S88°14'25"W A DISTANCE OF 66.00 FEET TO THE EAST LINE OF THE CASS COUNTY HIGHWAY 17 RIGHT OF WAY; THENCE N01°45'35"W ALONG SAID EAST LINE A DISTANCE OF 325.07 FEET TO THE POINT OF BEGINNING.

SAID DEER CREEK ESTATES ADDITION, CONSISTS OF 31 LOTS AND 2 BLOCKS, AND CONTAINS 7.89 ACRES, MORE OR LESS, TOGETHER WITH UTILITY, DRAINAGE, SANITARY SEWER, SIGNAGE AND LANDSCAPING, AND ACCESS EASEMENTS AND STREET RIGHT OF WAYS OF RECORD.

COLE A. NESET,
REGISTERED LAND SURVEYOR
ND REG. NO. 7513

REGISTERED LAND SURVEYOR — COLE A. NESET — LS - 7513 — DATE 12-21-21 — NORTH DAKOTA

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 21 DAY OF December, 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED COLE A. NESET, REGISTERED LAND SURVEYOR, TO ME KNOWN TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SAME AS HIS FREE ACT AND DEED.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

SAVANNAH HAHN
Notary Public
State of North Dakota
My Commission Expires Dec. 29, 2021

OWNERS' CERTIFICATE

WE, THE UNDERSIGNED, DO HEREBY CERTIFY THAT WE ARE THE OWNERS OF THE LAND DESCRIBED IN THE PLAT OF "DEER CREEK ESTATES ADDITION" TO THE CITY OF HORACE, CASS COUNTY, NORTH DAKOTA, AND WE HAVE CAUSED IT TO BE PLATTED INTO LOTS AND BLOCKS AS SHOWN BY SAID PLAT AND CERTIFICATE OF COLE A. NESET, REGISTERED LAND SURVEYOR, AND THAT THE DESCRIPTION AS SHOWN IN THE CERTIFICATE OF THE REGISTERED LAND SURVEYOR IS CORRECT. WE HEREBY DEDICATE AND CONVEY TO THE PUBLIC, FOR PUBLIC USE, LOT 1 BLOCK 1, ALL STREET RIGHT OF WAYS, UTILITY, SANITARY SEWER, SIGNAGE AND LANDSCAPE, ACCESS, AND DRAINAGE EASEMENTS SHOWN ON SAID PLAT.

HS INVESTMENTS, LLC

OWNER OF LOTS 2-20 BLOCK 1 AND ALL OF BLOCK 2

HS INVESTMENTS, LLC
BY: MATTHEW HAUFF
ITS: AGENT

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 21 DAY OF December, 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED MATTHEW HAUFF, TO ME KNOWN TO BE AN AGENT OF HS INVESTMENTS, LLC, THAT IS DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SAME ON BEHALF OF HS INVESTMENTS, LLC.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

SAVANNAH HAHN
Notary Public
State of North Dakota
My Commission Expires Dec. 29, 2021

CITY ENGINEER'S APPROVAL

THIS PLAT IN THE CITY OF HORACE, NORTH DAKOTA, IS HEREBY APPROVED THIS 22nd DAY OF DECEMBER 2021.

JAMES DAHLMAN
CITY ENGINEER

REGISTERED PROFESSIONAL ENGINEER — JAMES A. DAHLMAN — PE-10089 — DATE 12/22/2021 — NORTH DAKOTA

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 28th DAY OF December, 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED JAMES DAHLMAN, TO ME KNOWN TO BE THE CITY ENGINEER DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SAME AS CITY ENGINEER.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

WENDY KOPKIE
Notary Public
State of North Dakota
My Commission Expires March 4, 2024

CITY COUNCIL APPROVAL

THIS PLAT IN THE CITY OF HORACE, NORTH DAKOTA, IS HEREBY APPROVED THIS 21st DAY OF June 2021.

KORY PETERSON
MAYOR

BRENTON HOLPER
CITY AUDITOR

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 28th DAY OF December 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED KORY PETERSON, TO ME KNOWN TO BE THE MAY[illegible]CE, THAT IS DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SA[illegible]ITY OF HORACE.

NOTARY PUBLIC, COUNTY: CASS [illegible]KOTA

RECORDER OF CASS COUNTY — OFFICIAL SEAL — STATE OF NORTH DAKOTA

WENDY KOPKIE
Notary Public
State of North Dakota
My Commission Expires March 4, 2024

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 28th DAY OF December, 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED BRENTON HOLPER, TO ME KNOWN TO BE THE CITY AUDITOR OF THE CITY OF HORACE, THAT IS DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SAME ON BEHALF OF THE CITY OF HORACE.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

WENDY KOPKIE
Notary Public
State of North Dakota
My Commission Expires March 4, 2024

HORACE PLANNING AND ZONING COMMISSION APPROVAL

THIS PLAT IN THE CITY OF HORACE, NORTH DAKOTA, IS HEREBY APPROVED THIS 13th DAY OF October 2021.

RUSSELL SAHR
CHAIRMAN

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

WENDY KOPKIE
Notary Public
State of North Dakota
My Commission Expires March 4, 2024

ON THIS 28th DAY OF December, 2021, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED RUSSELL SAHR, TO ME KNOWN TO BE THE CHAIRMAN OF THE HORACE PLANNING AND ZONING COMMISSION THAT IS DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT HE EXECUTED THE SAME ON BEHALF OF THE HORACE PLANNING AND ZONING COMMISSION.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

CITY ATTORNEY'S APPROVAL

I HEREBY CERTIFY THAT PROPER EVIDENCE OF TITLE HAS BEEN EXAMINED BY ME AND I APPROVE THE PLAT AS TO FORM AND EXECUTION THIS 11th DAY OF January 2022.

LUKAS W. CROAKER
CITY ATTORNEY

STATE OF NORTH DAKOTA } SS
COUNTY OF CASS

ON THIS 11th DAY OF January, 2022, BEFORE ME, A NOTARY PUBLIC WITHIN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED LUKAS W. CROAKER, CITY ATTORNEY, TO ME KNOWN TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME AS THE CITY ATTORNEY.

NOTARY PUBLIC, COUNTY: CASS STATE: NORTH DAKOTA

SARAH WEAR
Notary Public
State of North Dakota
My Commission Expires Oct. 12, 2022

FINANCE OFFICE
COUNTY OF CASS, NORTH DAKOTA
2/9/2022
Taxes and Special Assessments paid and transfer entered.
FINANCE DIRECTOR
CS DEPUTY

THE SEAL OF CASS COUNTY — OFFICIAL SEAL — STATE OF NORTH DAKOTA

1658488
Page: 2 of 2
2/9/2022 8:32 AM
PLAT $50.00

Ohnstad Twichell, P.C.

RECORDER'S OFFICE, CASS COUNTY, ND 2/9/2022 8:32 AM
I CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD THIS DATE.
DEBORAH A. MOELLER, COUNTY RECORDER
by Teresa A. Kirby, Dep. 1658488
Recorded Electronically

RECORDER OF CASS COUNTY — OFFICIAL SEAL — STATE OF NORTH DAKOTA

LOWRY ENGINEERING
5306 51ST AVE S - SUITE A
FARGO, NORTH DAKOTA 58104

05/01/21 01:39:04PM C:\Users\DANIEL~1.HOU\AppData\Local\Temp\AcPublish_29156\XR_Plat_19137.dwg

Docusign Envelope ID: 2AD3B2EC-489A-4B6E-AD70-441E21472CFC

PETITION FOR IMPROVEMENTS

We, Deer Creek Estates, LLC (the "Petitioner"), is the legal and equitable owner of the following described property, to-wit:

Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20, Block 1, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, Block 2, Deer Creek Estates Addition to the City of Horace, situate in the County of Cass and the State of North Dakota.

(the "Property").

The Petitioner hereby petitions the City of Horace, Cass County, North Dakota (the "City"), to create an improvement district for the purpose of constructing the following municipal improvements: Water, Sewer, Storm, & Streets (the "Improvements").

The Petitioner hereby requests that the City determine by resolution that a written petition for the Improvements signed by the owners of a majority of the area of the Property included within the district has been received and that the Resolution Declaring Work Necessary shall not be required for said improvement district.

The Petitioner hereby certifies that he/she is the legal and equitable owner(s) of the Property and has the authority to grant the City all necessary easements, rights of ways, fee simple, dedications, and other interests in the Property that may be required to complete the construction of the Improvements.

***The Petitioner** agrees that pursuant to North Dakota Century Code Chapters 40-23 through 40-32 that the City shall assess the entire cost of the Improvements against the Property and hereby agrees to pay the entire cost as levied and apportioned by the City.*

IN WITNESS WHEREOF, the Petitioner executed this Petition for Improvements on this 12 day of December, 2024.

Docusign Envelope ID: 2AD3B2EC-489A-4B6E-AD70-441E21472CFC

PETITIONER:

By: DocuSigned by: Brandon Rabain 8CB3A0DA4312426...

Its: President

This Petition for Improvements must be accompanied by evidence of ownership of the Property. Such evidence may include the following items: (a) title opinion; (b) O & E report; or (c) a copy of the vesting deed.

WARRANTY DEED

THIS INDENTURE made this 5 day of December, 2023, by and between HS Investments, LLC, a North Dakota limited liability company, **GRANTOR**, to Deer Creek Estates, LLC, a North Dakota limited liability company, **GRANTEE**, whose post office address is: 3262 Oak Ridge Loop E, West Fargo, ND 58078.

WITNESSETH, for and in consideration of the sum of One Dollar ($1.00) and other valuable consideration, GRANTOR does hereby GRANT to the GRANTEE, all of the following described real property lying and being in the County of Cass and the State of North Dakota, and described as follows, to-wit:

Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20, Block 1, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11, Block 2, Deer Creek Estates Addition to the City of Horace, situate in the County of Cass and the State of North Dakota.

AND

Lots 2 and 3, Block 1, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, and 38, Block 2, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14, Block 3, Deer Creek Estates Second Addition to the City of Horace, situate in the County of Cass and the State of North Dakota.

Date: 12/5/2023

Agent/Grantee

FM TITLE

K2233682 27

And the said GRANTOR for themselves, their heirs, executors and administrators, does covenant with the GRANTEE that well seized in fee of the land and premises aforesaid and have good right to sell and convey the same in manner and form aforesaid; that the same are free from all encumbrances, except installments of special assessments or assessments for special improvements which have not been certified to the County Auditor for collection, and the above granted lands and premises in the quiet and peaceable possession of said GRANTEE, against all persons lawfully claiming or to claim the whole or any part thereof, the said GRANTOR will warrant and defend.

WITNESS, the hand of the GRANTOR:

HS Investments, LLC

By: Matthew Hanft

Its: President

STATE OF North Dakota)
) ss.
COUNTY OF Cass)

On this 5 day of December, 2023, before me, a notary public, within and for said county and state, personally appeared Matthew Hanft in their capacity as the President of HS Investments, LLC, known to be the person described in, and who executed the foregoing instrument, and acknowledged that they executed the same on behalf of HS Investments, LLC.

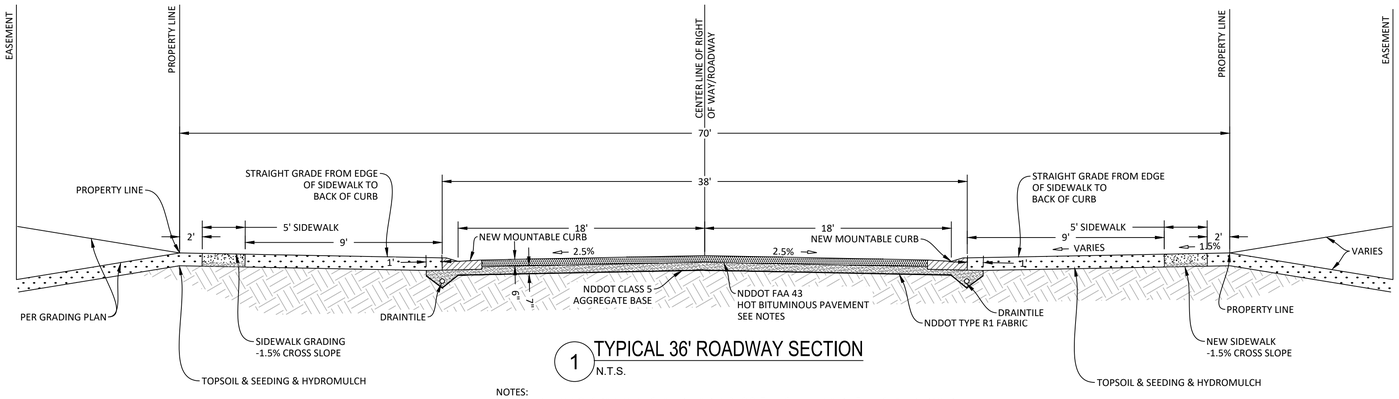
DUANE BROE
Notary Public
State of North Dakota
My Commission Expires May 20, 2024

Notary Public, Cass County, ND
My Commission Expires:

(SEAL)

The legal description was obtained
from a previously recorded instrument.

THIS INSTRUMENT DRAFTED BY:
Tyler S. Carlson
ND Bar ID No. 06948
KENNELLY BUSINESS LAW
1213 NP Avenue
Fargo, ND 58102
PHONE: (701) 893-1000



1 TYPICAL 36' ROADWAY SECTION
N.T.S.

NOTES:
1. HOT BITUMINOUS PAVEMENT SHALL BE LAID IN 2 - 2.25" LIFTS. THE FINAL 1.5" LIFT SHALL BE PAVED AT A LATER DATE SEPARATE FROM THIS CONTRACT.
2. 12" OF EXISTING SUBGRADE SHALL BE SCARIFIED AND RECOMPACTED PRIOR TO PLACING FABRIC.
3. SUBGRADE, AGGREGATE BASE, AND PAVEMENT CROSS SLOPE SHALL BE 2.50%.
4. ASPHALT CEMENT SHALL BE NDDOT PG 58-28.
5. DAYLIGHT GRADING SHALL NOT EXCEED 4:1 SLOPES.
6. SEE SITE/GRADING PLAN FOR AREAS OF SIDEWALK THAT ARE INSTALLED UNDER THIS CONTRACT VS AREAS INSTALLED BY OTHERS/OWNERS IN FUTURE.

LOWRY ENGINEERING
5308 51ST AVE S. - SUITE A
FARGO, NORTH DAKOTA 58104

REVISIONS

WATER, SEWER, STORM, AND STREET IMPROVEMENT DISTRICT NO. 2021-6
DEER CREEK ESTATES ADDITION &
DEER CREEK ESTATES 2ND ADDITION
HORACE, NORTH DAKOTA

TYPICAL SECTIONS

C-9.6

06/03/22 01:03:44PM Z:\Lowry Shared Files\Projects_2019\19137 - Deer Creek Estates\Drawings\19137_Project\Design\19137_C_Notes&Details.dwg

graphical purposes only and do not represent a legal survey. Every effort has been made to ensure that these data are accurate and reliable within the limits of the current state of the art, IEI cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. IEI makes no warranty, expressed or implied, nor does the fact of distribution constitute

Water, Sewer, Storm and Street Improvement District No. 2025-4 Preliminary Special Assessment

Preliminary Special Assessment done by units 1/14/25
Subject to Special Assessment Commission and City Council
FOR REVIEW

Preliminary

60th Ave S

17

$31,768.73

$89,823.4 | $74,938.87 | $75,486.68 | $75,486.68 | $75,486.68 | $75,486.68 | $75,486.68 | $74,688.86 | $92,394.62

$79,301.08

$76,964.25

$56,998.86

$53,771.95

$50,650

$60,818.14

$61,394.55

$73,707.96

$0

$0

$0

Cedar Dr

6
138N
49W

5
138N
49W

$99,969.72	$88,801.56	$88,801.56	$88,801.56	$96,190.59
$104,074.29	$90,417.65	$90,031.41	$89,650.26	$97,606.74

Main St/ 170th Ave SE

62nd Ave. S

Horseshoe Bend

Deer Creek Parkway

St S

N

1:1,200

0 30 60 120
Feet

- District Boundary
- Only Assessed for Storm
- Single Family Residential
- Multi Family
- Public
- Not Assessed
- Cass County Parcels

MEMORANDUM OF UNDERSTANDING
LUTHER AVENUE EXTENSION

THIS MEMORANDUM OF UNDERSTANDING (this "Agreement") is made and entered into this ___ day of _____, 2024 (the "Effective Date"), by and between the City of Horace, a North Dakota political subdivision (the "City"); the Park District of the City of Horace, a North Dakota political subdivision (the "District"); Beau Bear Properties LLC, a North Dakota limited liability company ("Beau Bear"); EAV Family Holdings LLC, a North Dakota limited liability company ("EAV"); and Lee and Nancy Sparks as Trustees of the Lee & Nancy Sparks 2018 Living Trust (the "Sparks"), which are referred to herein individually as a "Party," and collectively as the "Parties."

RECITALS

WHEREAS, the Sparks platted property in the City known as Sparks Addition; and

WHEREAS, EAV platted property in the City known as El Dorado Addition (collectively, the "Developments"); and

WHEREAS, the Developments are adjacent to each other on the south side of the City with limited access to collector roads as a result of green field development; and

WHEREAS, the Sparks and EAV desire to expand, realign, and extend Luther Avenue, located in Sparks Addition, into a collector road and connect it to County Road 17 and extend it to the east across Drain 27; and

WHEREAS, in order to connect Luther Avenue to County Road 17 and extend it east beyond Drain 27, the Parties to this Agreement are required to plat, convey, and dedicate portions of real property under the terms and conditions outlined in this Agreement; and

WHEREAS, the Parties desire to enter into this Agreement to provide the Parties' rights and responsibilities regarding the conveyance of the real property.

NOW THEREFORE, in consideration of the mutual covenants contained in this Agreement, and other good and valuable consideration, the receipt and sufficiency of which the Parties acknowledge, the Parties hereby agree as follows:

AGREEMENT

1. **Purpose.** The purpose of this Agreement is to outline the Parties' rights and responsibilities related to the conveyance of real property to allow Luther Avenue to connect to County Road 17 and to extend through El Dorado Addition to the east. The Parties agree the realignment, expansion, and extension of Luther Avenue is necessary to provide a collector road in these developments that connects to an arterial road – County Road 17. The Parties agree to cooperate to achieve the purpose of this Agreement.

2. **Luther Avenue.** Originally, Luther Avenue was contained within the plat boundary of Sparks Addition and did not connect to County Road 17 or extend east through El Dorado Addition. In order to connect Luther Avenue to County Road 17, real property must be conveyed from Beau Bear to the City. Real property must be conveyed from EAV to the City to allow Luther Avenue

to extend to the east of El Dorado Addition across Drain 27, ultimately connecting to 57th Street South. The extension of Luther Avenue is illustrated in the map attached as **Exhibit A**.

3. **City's Obligations.** The City will perform the following:

   a. Purchase 0.99 acres of Lot 2, Block 1, El Dorado Addition from EAV in the amount of $194,059.80 for the City's Public Works Department. The City will include the cost to purchase this real property in Water, Sewer, Storm, and Street Improvement District No. 2023-7.

   b. Purchase 1.68 acres, consisting of portions of Lots 1-4, Block 2, El Dorado Addition; Lots 2-3, Block 1, El Dorado Addition; Lot 2, Block 1, El Dorado Addition; and Lot 4, Block 4, Visto Industrial 3rd Addition, from EAV in the amount of $329,313.60. The City will include the cost to purchase this real property in Water, Sewer, Storm, and Street Improvement District No. 2023-7.

   c. Purchase Beau Bear's lot (1.41 acres) in the W1/2 of Section 20, Township 138N, Range 49W of the 5th P.M., Cass County, ND – Parcel ID No. 15-0000-02023-000 in the amount of $488,517.60. This value is based on 1.41 acres x $6 per square foot, plus $120,000 for the existing building. The City will include the cost to purchase this real property in Water, Sewer, Storm, and Street Improvement District No. 2023-7. The City agrees to grant an easement to the Sparks Addition Home Owners' Association (HOA) for an entrance sign and landscaping on a portion of this parcel upon written request of the Sparks Addition HOA.

   d. Enter into purchase agreements with the EAV and Beau Bear for the respective purchases of real property.

   e. Develop and design the street project, in phases, to allow for the connection of Luther Avenue to County Road 17 and the extension east of Drain 27.

   f. Administer and construct the street project, including bidding, awarding of contracts, and administration of contracts, in accordance with the project design.

4. **Sparks' Obligations.** The Sparks will perform the following:

   a. Dedicate 1.46 acres of additional right of way to the City, via a replat of Sparks Addition (dedication value of $286,189.20).

   b. Replat the following lots in Sparks Addition to allow for the expansion, realignment, and extension of Luther Avenue:

      i. Lot 1, Block 9

      ii. Lots 9-12, Block 1

      iii. Lot 1, Block 8

      iv. Lot 1, Block 7

      v. Lot 17, Block 5

      vi. Lot 1, Block 5 – additional dedication of 30' on the south side of the District's lot

Commented [JD1]: I spoke with Kelly and Jim. We asked Interstate for a proposal to design all of Sparks and El Dorado as well, to keep design of 8th, Sparks, Luther, and El Dorado all under one roof for better efficiency. Perhaps the City can pick up the tab on design fees moving forward, as they will be reimbursed to the Developer anyway? Also, maybe we could submit our design fee reimbursement request as soon as this agreement is approved by all parties? We have incurred some design fees to date. Kelly mentioned having the cost of platting be picked up by the City if that would be acceptable.

vii. Lot 2, Block 5

c. Dedicate a suitable location for a sanitary sewer lift station, sized at the reasonable discretion of the City Engineer.

5. **EAV Obligations.** EAV will perform the following:

a. Sell 0.99 acres to the City, via warranty deed (value of $194,059.80).[1]

b. Sell 1.68 acres to the City, via warranty deed (value of $329,313.60).[2]

c. Enter into a purchase agreement with the City for its real property referenced herein.

d. Replat the following lots in El Dorado Addition to allow for the expansion, realignment, and extension of Luther Avenue:

i. Lots 1-4, Block 2

ii. Lots 1-3, Block 1

e. Replat the following lots in Visto Industrial 3rd Addition to allow for the expansion, realignment, and extension of Luther Avenue:

i. Lots 3-4, Block 4

6. **Beau Bear Obligations.** Beau Bear will perform the following:

a. Sell its lot (1.41 acres) in the W1/2 of Section 20, Township 138N, Range 49W of the 5th P.M., Cass County, ND – Parcel ID No. 15-0000-02023-000 to the City in the amount of $488,517.60, via a warranty deed. This value is based on 1.41 acres x $6 per square foot, plus $120,000 for the existing building.

b. Enter into a purchase agreement with the City for its real property referenced herein.

7. **8th Avenue.** The 8th Avenue street project will be assessed to the Sparks Addition and commercial and industrial properties north of 8th Avenue and south of Park Drive. The design standard of 8th Avenue will be a standard local street width consisting of twenty-six feet (26') asphalt top. This will be considered a local street project; however, if the City urbanizes the street to include curb and gutter, twenty-five percent (25%) will be considered a regional street project with the remaining seventy-five percent (75%) considered a local street project. If 8th Avenue is urbanized, parking will be allowed on one (1) side of the street. If 8th Avenue is not urbanized, parking will not be allowed on either side of the street. The Horace City Council retains discretion in creating improvement districts, funding projects, and levying potential assessments based on a recommendation from the Horace Special Assessment Commission.

8. **Hold Harmless.** The Parties will release and hold harmless the other Parties and their respective officers, agents, representatives, employees, consultants, and contractors, from and against any and all claims, actions, administrative proceedings, judgments, damages, penalties, fines, costs,

Commented [LC2]: Need confirmation on whether this lot gets removed with the expansion of Luther.

Commented [BH3R2]: I believe it would or Sparks may need to make some adjustments to the lot(s) along You Betcha. It may not make sense to make much for adjustments on You Betcha, as I believe services have been put in off the main.

Commented [JD4R2]: I think this lot will be eliminated and just added as ROW since YouBetcha is built out

[1] Refer to Section 3(a).
[2] Refer to Section 3(b).

liabilities, interests, or losses, including costs, expenses, and attorneys' fees, arising out of or as a result this Agreement.

9. **Liability.** The City's and Park District's liability is limited in accordance with N.D.C.C. Ch. 32-12.1.

10. **Forbearance.** The failure or delay of any Party to insist on the timely performance of any of the terms of this Agreement, or the waiver of any particular breach of any of the terms of this Agreement, at any time, will not be construed as a continuing waiver of those terms or any subsequent breach, and all terms will continue and remain in full force and effect as if no forbearance or waiver had occurred.

11. **Term.** The Parties' respective rights and responsibilities under this Agreement will commence upon the Effective Date and expire two (2) years from the Effective Date or upon successful transfer of all real property referenced herein, whichever occurs sooner. This Agreement may be terminated, with or without cause, by any Party giving sixty (60) days' written notice to the other Parties; or if necessary to comply with any laws, rules, regulations, requirements, or directives of the State of North Dakota, or any other federal or state agency with regulatory jurisdiction; or in the event of an uncured default by a Party hereto.

12. **Severability.** If any court of competent jurisdiction declares any term or provision of this Agreement invalid or unenforceable, all remaining terms and provisions of this Agreement will remain binding and enforceable; however, the Parties will reconvene negotiations and will reform or replace any invalid, illegal, or unenforceable term or provision of this Agreement with an alternative term or provision that is enforceable and bears as close resemblance as possible to any term or provision determined invalid, illegal, or unenforceable.

13. **Successors.** The covenants, terms, conditions, provisions, and undertakings in this Agreement, or in any amendment, will be binding upon the Parties' successors and assigns.

14. **Applicable Law.** This Agreement will be construed in accordance with and governed by North Dakota law.

15. **Assignment.** The Parties may not transfer or assign this Agreement or any rights or obligations under this Agreement without the express written consent of all Parties to this Agreement.

16. **Amendments.** Any modifications or amendments to this Agreement must be in writing and signed by all Parties to this Agreement.

17. **Interpretation.** This Agreement will be construed as if prepared by all Parties.

18. **Representation.** The Parties, having been represented by counsel or having waived the right to counsel, have carefully read and understand the contents of this Agreement, and agree they have not been influenced by any representations or statements made by any other Parties.

19. **Cooperation.** The Parties agree to cooperate fully, to execute any and all additional documents, and to take any and all additional actions that may be necessary or appropriate to give full force and effect to the basic terms and intent of this Agreement and to accomplish the purposes of this Agreement.

20. **Counterparts.** This Agreement may be executed in counterparts meaning that this Agreement is valid if signed by all Parties even if the signatures of the Parties appear on separate copies of the same agreement rather than on a single document.

21. **Electronic Signature**. The Parties agree that an electronic signature to this Agreement shall be as valid as an original signature of each Party and shall be effective to bind the signatories to this Agreement. For purposes hereof: (i) "electronic signature" means a manually signed original signature that is then transmitted by electronic means or an electronic acknowledgment which provides the signatory the ability to validate and affix a digital signature that is then transmitted by electronic means; and (ii) "transmitted by electronic means" means sent in the form of a facsimile or sent via the internet as a portable document format ("pdf"), via *DocuSign*, or other replicating image attached to an electronic mail or internet message.

22. **Effective Date**. This Agreement will become effective on the date of execution by the last Party to sign.

IN WITNESS WHEREOF, the parties executed this Agreement on the dates written below.

CITY:

CITY OF HORACE

Date: _____, 2024

_____
Jeff Trudeau

Attest:

Date: _____, 2024

_____
Brenton Holper, City Administrator

[Signatures continued on the following pages.]

Commented [BH5]: When would the sale of properties occur? At the time of replat? Or, within a specified amount of time after the replat is completed?

Is the lot broken out for Kelly Visto accounted for in the replat?

City could waive plat fees from the City. Who is responsible for the engineering services for the replat? Should that be called out in the agreement?

Commented [LC6R5]: Do we want that included in the MOU and/or the purchase agreements?

DISTRICT:

PARK DISTRICT OF THE CITY OF HORACE

Date: _____, 2024

_____
Wade Frank, President

Attest:

Date: _____, 2024

_____
Justin Germundson, Clerk

[Signatures continued on the following pages.]

BEAU BEAR:

BEAU BEAR PROPERTIES, LLC

Date: _____, 2024

By: _____

Its: _____

[Signatures continued on the following pages.]

EAV:

EAV FAMILY HOLDINGS LLC

Date: _____, 2024

By: _____

Its: _____

[Signatures continued on the following page.]

SPARKS:

LEE & NANCY SPARKS 2018 LIVING TRUST

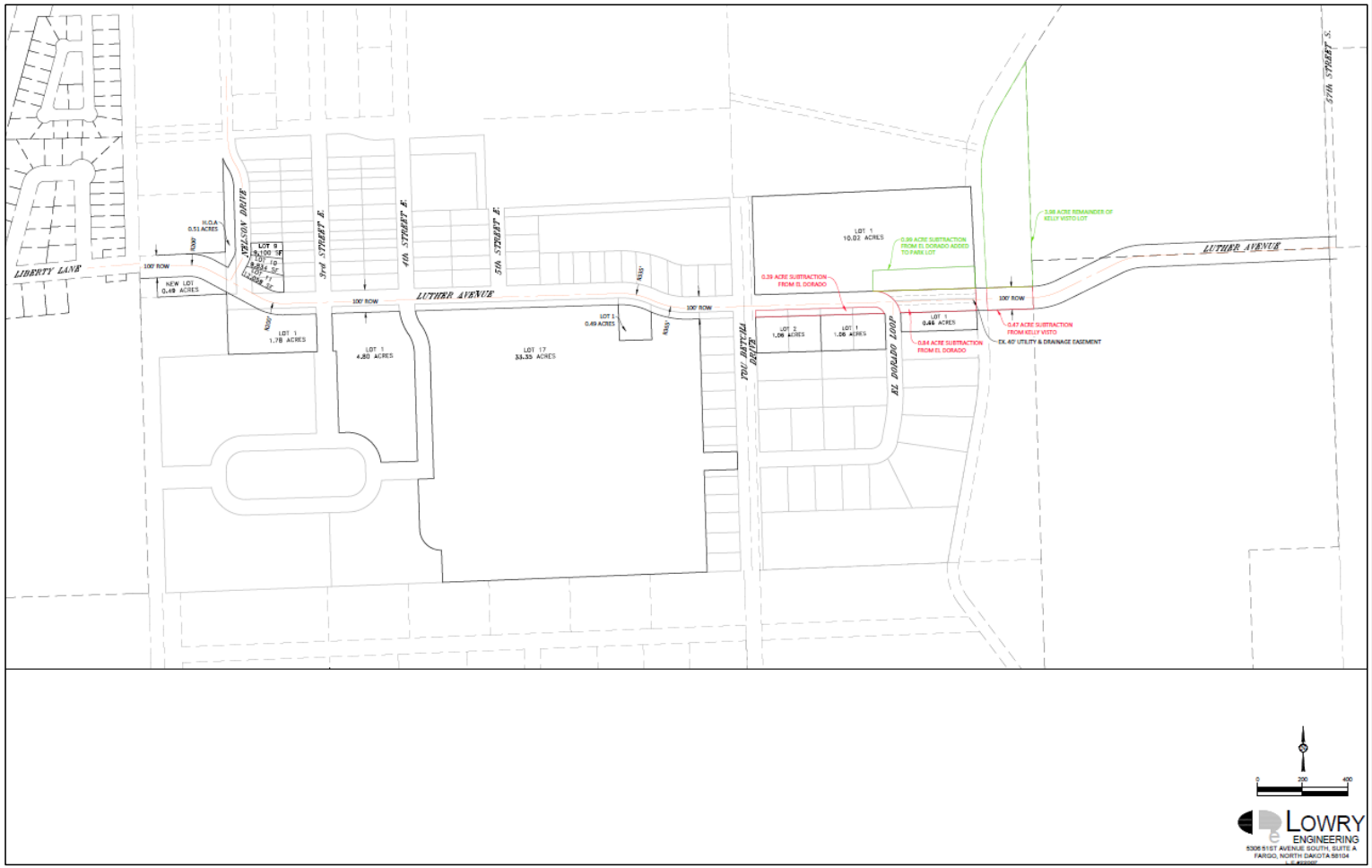
Date: _____, 2024

By: _____
Lee Sparks, Trustee

Date: _____, 2024

By: _____
Nancy Sparks, Trustee

EXHIBIT A


LIBERTY LANE
NELSON DRIVE
3rd STREET E
4th STREET E
5th STREET E
57th STREET S.
LUTHER AVENUE
YOU BATTLA DRIVE
EL DORADO LOOP
100' ROW
LOT 1
10.02 ACRES
0.99 ACRE SUBTRACTION FROM EL DORADO ADDED TO FARE LOT
0.39 ACRE SUBTRACTION FROM EL DORADO
3.98 ACRE REMAINDER OF KELLY VISTO LOT
0.47 ACRE SUBTRACTION FROM KELLY VISTO
0.84 ACRE SUBTRACTION FROM EL DORADO
EX. 60' UTILITY & DRAINAGE EASEMENT
LOT 2
1.06 ACRES
LOT 1
1.06 ACRES
LOT 1
0.46 ACRES
LOT 1
0.49 ACRES
NEW LOT
0.49 ACRES
LOT 1
1.78 ACRES
LOT 1
4.80 ACRES
LOT 17
33.33 ACRES
M.O.A.
0.53 ACRES
LOT 9
LOT 10
LOT 11
LOT 12
0 200 400
LOWRY
ENGINEERING
5306 51ST AVENUE SOUTH, SUITE A
FARGO, NORTH DAKOTA 58104

INTERSTATE ENGINEERING
Professionals You Need, People You Trust.

MEMO

To: Horace City Council
(Via email: Bholper@cityofhorace.com)

From: James Dahlman, PE

Date: January 31, 2025

Re: Water, Sewer, Storm, and Street Improvement District No. 2025-5
Luther Avenue
Horace, North Dakota
ER24-03-103.28

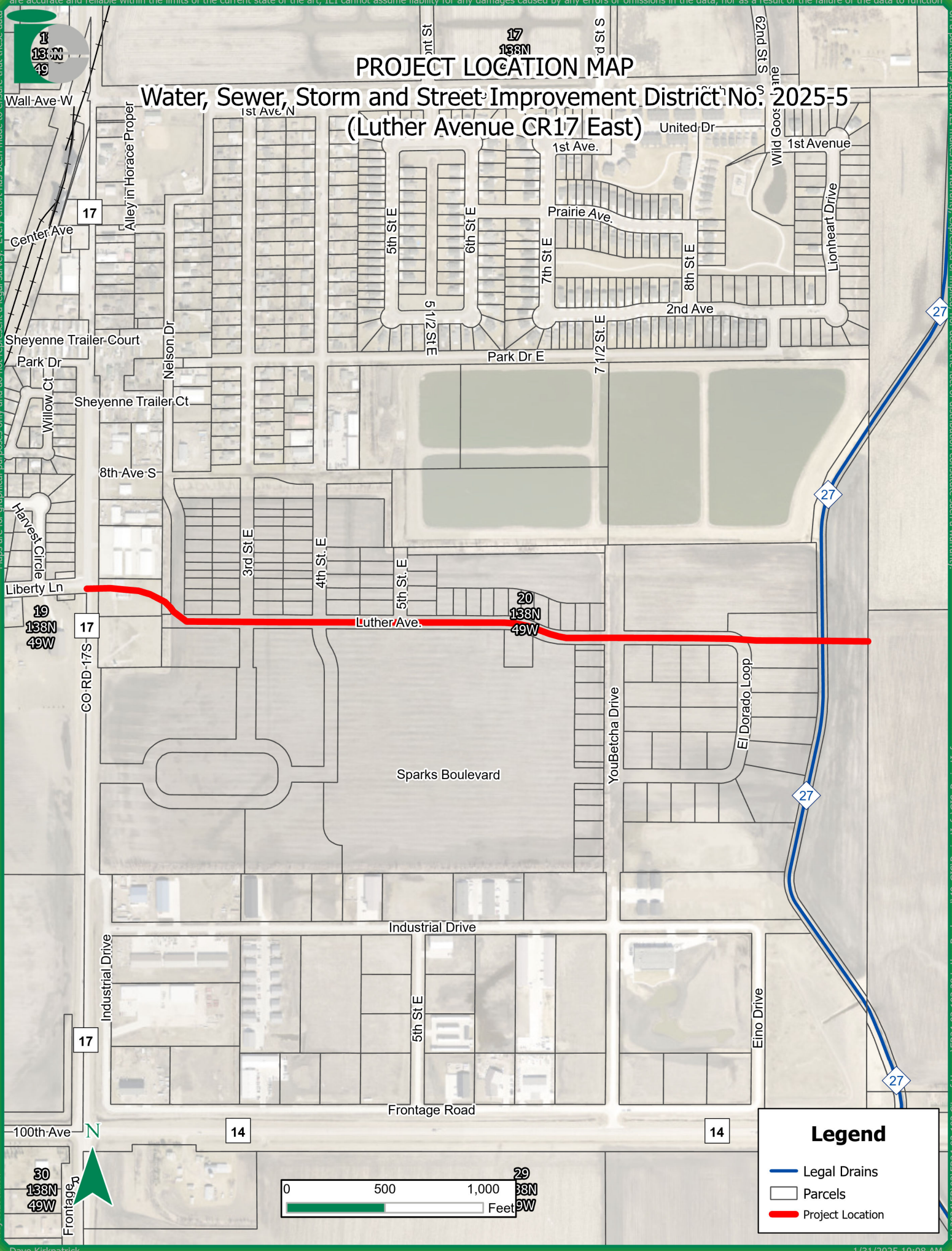
Please see attached Project Location Map and District Boundary Map for the above-referenced project. These maps are being sent for your review, discussion, and approval.

If you have any questions, please feel free to contact me at (701) 532-0438.
Thank You

ATTACHMENTS

are accurate and reliable within the limits of the current state of the art, IEI cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function

PROJECT LOCATION MAP
Water, Sewer, Storm and Street Improvement District No. 2025-5
(Luther Avenue CR17 East)



Legend

- Legal Drains
- Parcels
- Project Location

Maps are for graphical purposes only and do not represent a legal survey. Every effort has been made to ensure that these data on a particular system. IEI makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty.

are accurate and reliable within the limits of the current state of the art, IEI cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. IEI makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty.

Maps are for graphical purposes only and do not represent a legal survey. Every effort has been made to ensure that these data

DISTRICT BOUNDARY MAP
Water, Sewer, Storm, and Street Improvement District No. 2025-5
(Luther Avenue CR17 East)

Lakeview Drive
3rd Av
Ironwood Dr
18 138N 49W
Frontage Rd South of S-ol
Front
6th St S
61st St S
62nd
87th Ave S
Ave S
27
Wall Ave W
17
Wall Ave
1st Ave N
5 1/2 St E
88th Ave S
United Dr
1st Ave.
1st Avenue
Thue Ct
Mickey Mouse Ave
Center Ave
Dakota Ave
Alley in Horace Proper
5th St E
6th St E
Prairie Ave.
7th St E
8th St E
Lionheart Drive
2nd Ave
7 1/2 St. E
Park Dr
Park Dr E
Nelson Dr
Willow Ct
Southwind Drive
Sheyenne Trailer Ct
Maust Way
8th Ave S
Harvest Circle
3rd St E
4th St E
5th St E
Liberty Ln
19 138N 49W
20 138N 49W
Luther Ave.
CO RD 17S
YouBetcha Drive
El Dorado Loop
Sparks Boulevard
Industrial Drive
Eino Drive
Frontage Road
100th Ave
14
30 138N 49W
Frontage Rd
29 138N 49W
0 300 600 Feet

Legend

- District Boundary
- Legal Drains
- Parcels

District Boundary map

X:\2024\ER\03\ER24-03-103 City of Horace\ER24-03-103 8 Luther Boulevard\40 GIS\Project\Info\GIS_ProjectInfo.aprx

Dave.Kirkpatrick

1/31/2025 10:08 AM