

CASS COUNTY
GOVERNMENT



2023
FLOOD FIGHT

2023 Flood
Cass County
Flood Outbrief

May 1, 2023

- Cass County Flood Acquisitions: 191 Homes
- Buyouts were homes at greatest risk along the Red River
- Reduced the need for over 750,000 sandbags
- Levee and Road improvements have reduced the need for temporary levees by 2.5 miles for a 39' flood plus 2' freeboard
- 2006 Subdivision Ordinance reduced new homes built in flood prone areas



Blocks 1, 2, 3
of Forest River
2nd Subdivision

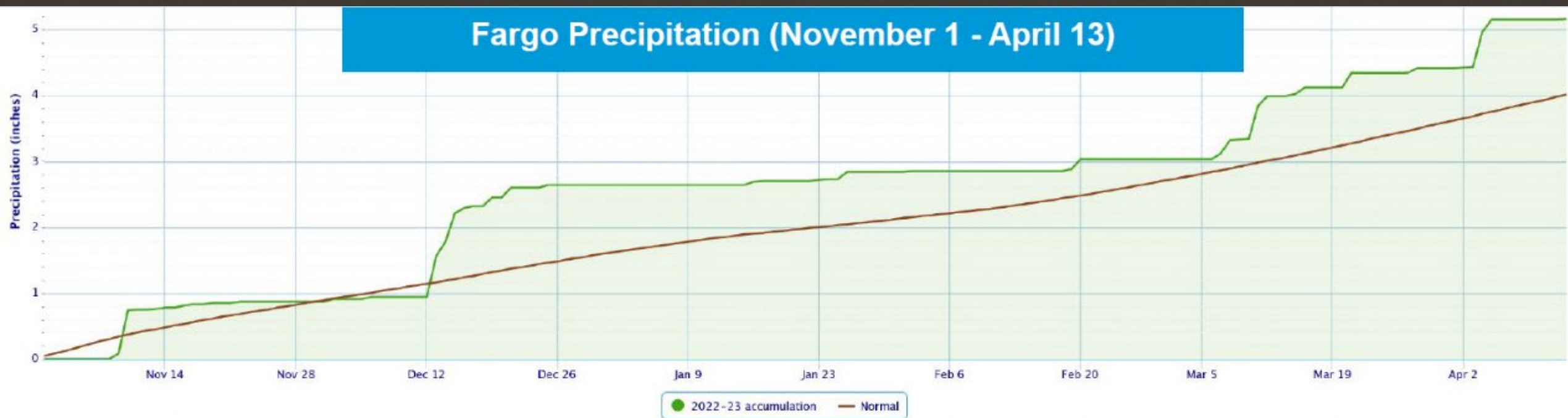


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FLOOD FIGHT**

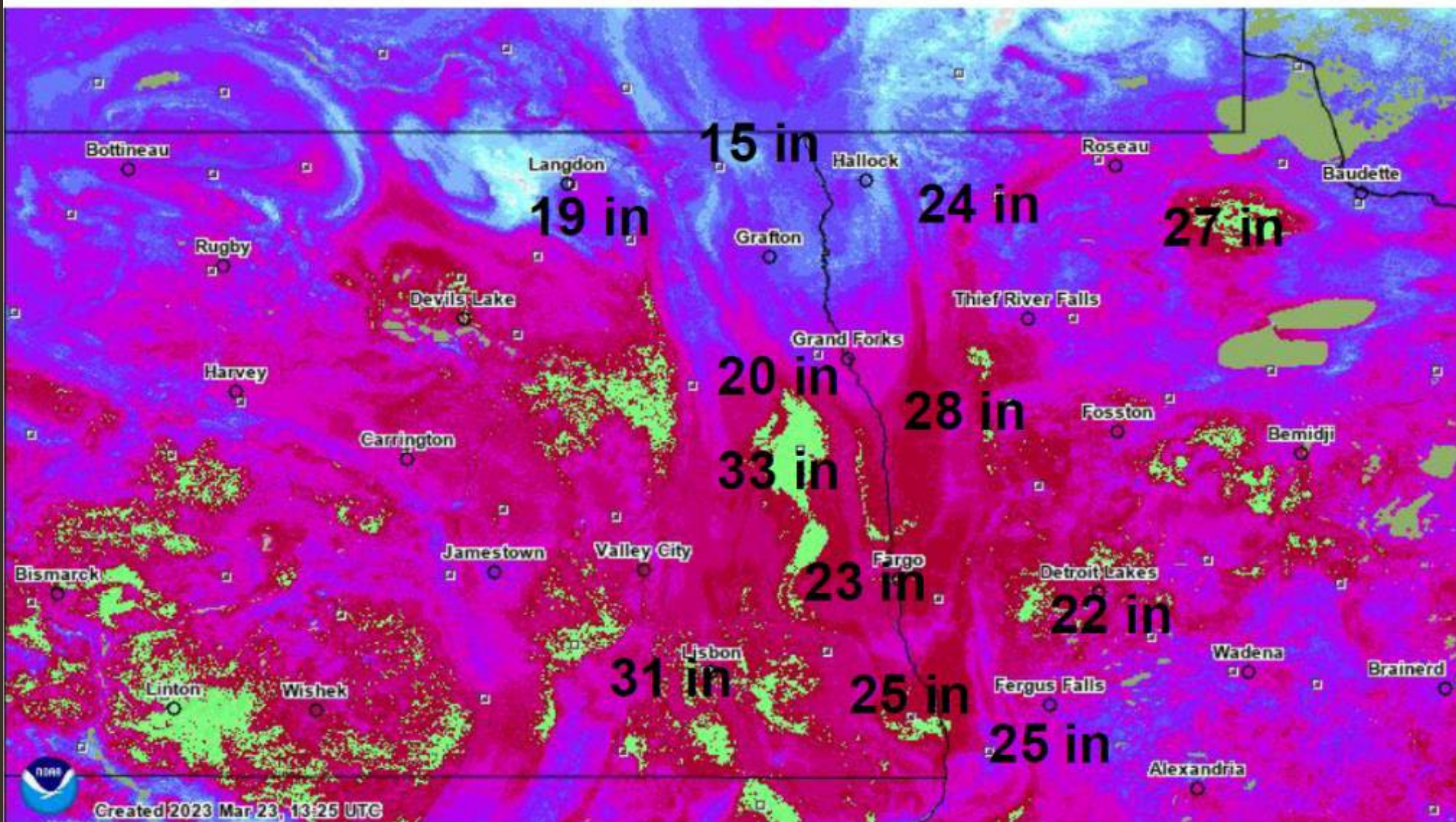
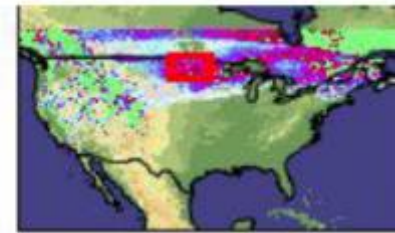
Fargo Precipitation (November 1 - April 13)



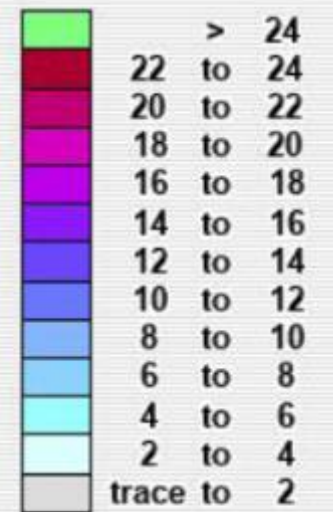
Fargo Snowfall (November 1 - April 13)



Modeled Snow Depth - March 23, 2023



Inches of depth



Not Estimated

Elevation in feet

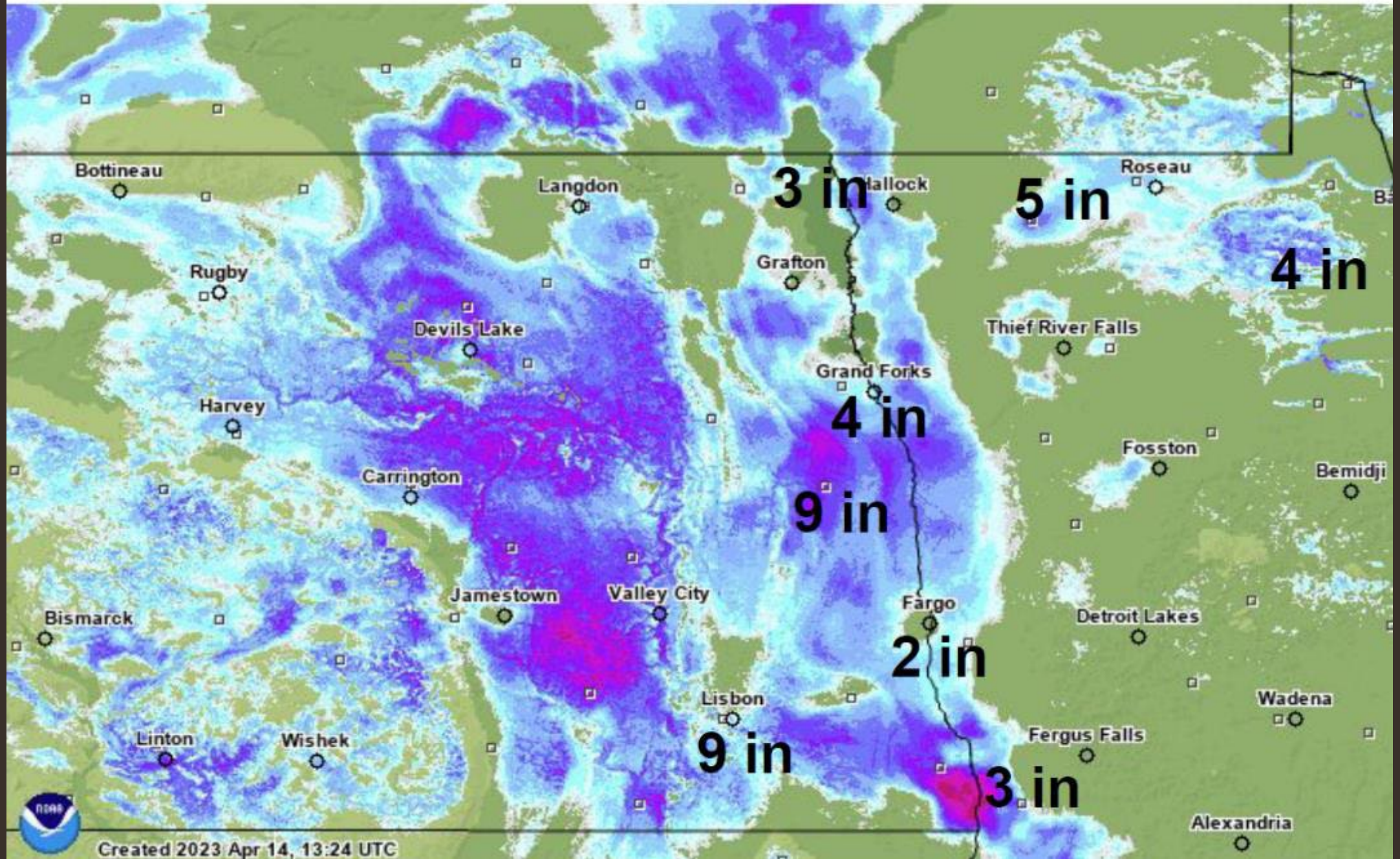


268.9 mi



Created 2023 Mar 23, 13:25 UTC

Modeled Snow Depth - April 14, 2023



2023 Flood Forecast April 10th

Valid March 27, 2023 - June 25, 2023

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%
Wahpeton	11.9	12.1	13.1	14.3	15.3	16.4	16.8
Hickson	27.5	28.1	30.4	32.6	34.0	35.4	36.3
Fargo	29.5	30.7	32.7	34.2	36.4	37.8	38.6
Halstad	32.5	33.7	35.7	38.2	39.5	39.9	40.2
Grand Forks	41.0	41.8	42.9	44.4	46.5	49.2	50.0
Oslo	35.0	35.3	35.7	36.3	37.3	38.4	38.7
Drayton	38.6	39.5	40.1	40.8	41.8	42.9	43.5
Pembina	45.6	46.8	47.7	49.6	50.9	52.3	52.8
NORTH DAKOTA TRIBUTARIES	95%	90%	75%	50%	25%	10%	5%
Wild Rice River							
Abercrombie	15.7	16.1	17.5	19.2	21.8	24.0	25.0
Sheyenne River							
Valley City	11.6	12.0	12.6	13.3	14.3	18.0	19.5
Lisbon	12.0	12.6	13.2	13.9	15.2	18.5	20.1
Kindred	16.8	17.2	18.3	19.6	20.5	21.2	21.2
West Fargo Diversion	16.5	17.2	17.6	19.3	21.3	21.3	21.3
Harwood	89.3	90.1	91.1	91.5	91.8	92.1	92.2
Maple River							
Enderlin	11.4	11.6	12.3	12.9	13.2	13.8	14.2
Mapleton	21.0	21.6	22.0	22.4	22.8	23.2	23.7

50%	25%	10%	5%
Little to No Precipitation (prior to snowmelt crest)		Widespread Additional Precipitation	

March 23rd

Legend:
 Below Flood Stage
 Minor
 Moderate
 Major
 Flood of Record

Sandbag Cass Operations

Sandbag Cass: Goal of
200,000 sandbags

- i. 59,100 sandbags today
- ii. 200,100 total sandbags
- iii. 80,000 total sandbags sent to
Fargo

Volunteers

- i. 2000 Total Volunteers
- ii. 4500 Total Volunteer hours



Started: Tuesday, April 11th
Ended: Friday, April 14th

2023 Flood Forecast April 13th

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%	2009	2011	2019	2022	2023
Wahpeton	11.9	12.1	13.1	14.3	15.3	16.4	16.8					
Hickson	27.5	28.1	30.4	32.6	34.0	35.4	36.3	39.0	37.2	34.3	25.0	28.2
Fargo	29.5	30.7	32.7	34.2	36.4	37.8	38.6	40.8	38.8	35.0	26.5	29.7
Halstad	32.5	33.7	35.7	38.2	39.5	39.9	40.2					
Grand Forks	41.0	41.8	42.9	44.4	46.5	49.2	50.0					
Wild Rice River												
Abercrombie	15.7	16.1	17.5	19.2	21.8	24.0	25.0	27.8	26.0	22.8	14.4	18.4
Sheyenne River												
Valley City	11.6	12.0	12.6	13.3	14.3	18.0	19.5	20.7	20.7	15.2	18.1	
Lisbon	12.0	12.6	13.2	13.9	15.2	18.5	20.1					
Kindred	16.8	17.2	18.3	19.6	20.5	21.2	21.2	21.6	21.4	20.8	21.1	19.9
West Fargo Diversion	16.5	17.2	17.6	19.3	21.3	21.3	21.3					
Harwood	89.3	90.1	91.1	91.5	91.8	92.1	92.2	91.7	91.8	91.3	89.9	90.3
Maple River												
Enderlin	11.4	11.6	12.3	12.9	13.2	13.8	14.2	14.1	13.3	12.3	12.4	
Mapleton	21.0	21.6	22.0	22.4	22.8	23.2	23.7	23.3	23.2	22.5	21.7	22.3

2023 Flood Forecast April 15th

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%	2009	2011	2019	2022	2023
Wahpeton	11.9	12.1	13.1	14.3	15.3	16.4	16.8					
Hickson	27.5	28.1	30.4	32.6	34.0	35.4	36.3	39.0	37.2	34.3	25.0	28.2
Fargo	29.5	30.7	32.7	34.2	36.4	37.8	38.6	40.8	38.8	35.0	26.5	29.7
Halstad	32.5	33.7	35.7	38.2	39.5	39.9	40.2					
Grand Forks	41.0	41.8	42.9	44.4	46.5	49.2	50.0					
Wild Rice River												
Abercrombie	15.7	16.1	17.5	19.2	21.8	24.0	25.0	27.8	26.0	22.8	14.4	18.4
Sheyenne River												
Valley City	11.6	12.0	12.6	13.3	14.3	18.0	19.5	20.7	20.7	15.2	18.1	
Lisbon	12.0	12.6	13.2	13.9	15.2	18.5	20.1					
Kindred	16.8	17.2	18.3	19.6	20.5	21.2	21.2	21.6	21.4	20.8	21.1	19.9
West Fargo Diversion	16.5	17.2	17.6	19.3	21.3	21.3	21.3					
Harwood	89.3	90.1	91.1	91.5	91.8	92.1	92.2	91.7	91.8	91.3	89.9	90.3
Maple River												
Enderlin	11.4	11.6	12.3	12.9	13.2	13.8	14.2	14.1	13.3	12.3	12.4	
Mapleton	21.0	21.6	22.0	22.4	22.8	23.2	23.7	23.3	23.2	22.5	21.7	22.3

2023 Flood Forecast April 19th

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%	2009	2011	2019	2022	2023
Wahpeton	11.9	12.1	13.1	14.3	15.3	16.4	16.8					
Hickson	27.5	28.1	30.4	32.6	34.0	35.4	36.3	39.0	37.2	34.3	25.0	28.2
Fargo	29.5	30.7	32.7	34.2	36.4	37.8	38.6	40.8	38.8	35.0	26.5	29.7
Halstad	32.5	33.7	35.7	38.2	39.5	39.9	40.2					
Grand Forks	41.0	41.8	42.9	44.4	46.5	49.2	50.0					
Wild Rice River												
Abercrombie	15.7	16.1	17.5	19.2	21.8	24.0	25.0	27.8	26.0	22.8	14.4	18.4
Sheyenne River												
Valley City	11.6	12.0	12.6	13.3	14.3	18.0	19.5	20.7	20.7	15.2	18.1	
Lisbon	12.0	12.6	13.2	13.9	15.2	18.5	20.1					
Kindred	16.8	17.2	18.3	19.6	20.5	21.2	21.2	21.6	21.4	20.8	21.1	19.9
West Fargo Diversion	16.5	17.2	17.6	19.3	21.3	21.3	21.3					
Harwood	89.3	90.1	91.1	91.5	91.8	92.1	92.2	91.7	91.8	91.3	89.9	90.3
Maple River												
Enderlin	11.4	11.6	12.3	12.9	13.2	13.8	14.2	14.1	13.3	12.3	12.4	
Mapleton	21.0	21.6	22.0	22.4	22.8	23.2	23.7	23.3	23.2	22.5	21.7	22.3

2023 Flood Forecast vs. Crest Level

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%	2009	2011	2019	2022	2023
Wahpeton	11.9	12.1	13.1	14.3	15.3	16.4	16.8					
Hickson	27.5	28.1	30.4	32.6	34.0	35.4	36.3	39.0	37.2	34.3	25.0	28.2
Fargo	29.5	30.7	32.7	34.2	36.4	37.8	38.6	40.8	38.8	35.0	26.5	29.7
Halstad	32.5	33.7	35.7	38.2	39.5	39.9	40.2					
Grand Forks	41.0	41.8	42.9	44.4	46.5	49.2	50.0					
Wild Rice River												
Abercrombie	15.7	16.1	17.5	19.2	21.8	24.0	25.0	27.8	26.0	22.8	14.4	18.4
Sheyenne River												
Valley City	11.6	12.0	12.6	13.3	14.3	18.0	19.5	20.7	20.7	15.2	18.1	
Lisbon	12.0	12.6	13.2	13.9	15.2	18.5	20.1					
Kindred	16.8	17.2	18.3	19.6	20.5	21.2	21.2	21.6	21.4	20.8	21.1	19.9
West Fargo Diversion	16.5	17.2	17.6	19.3	21.3	21.3	21.3					
Harwood	89.3	90.1	91.1	91.5	91.8	92.1	92.2	91.7	91.8	91.3	89.9	90.3
Maple River												
Enderlin	11.4	11.6	12.3	12.9	13.2	13.8	14.2	14.1	13.3	12.3	12.4	
Mapleton	21.0	21.6	22.0	22.4	22.8	23.2	23.7	23.3	23.2	22.5	21.7	22.3



Sandbag Deployment

- ◆ Empty Sandbag Distribution
 - ◆ 31,000 empty sandbags/loads of sand
- ◆ Filled Sandbag Delivery
 - ◆ 4/13/23 - 4/21/23 – 50,000 filled sandbags delivered
 - ◆ Over the 7500 sandbags went out on 9 separate emergency runs



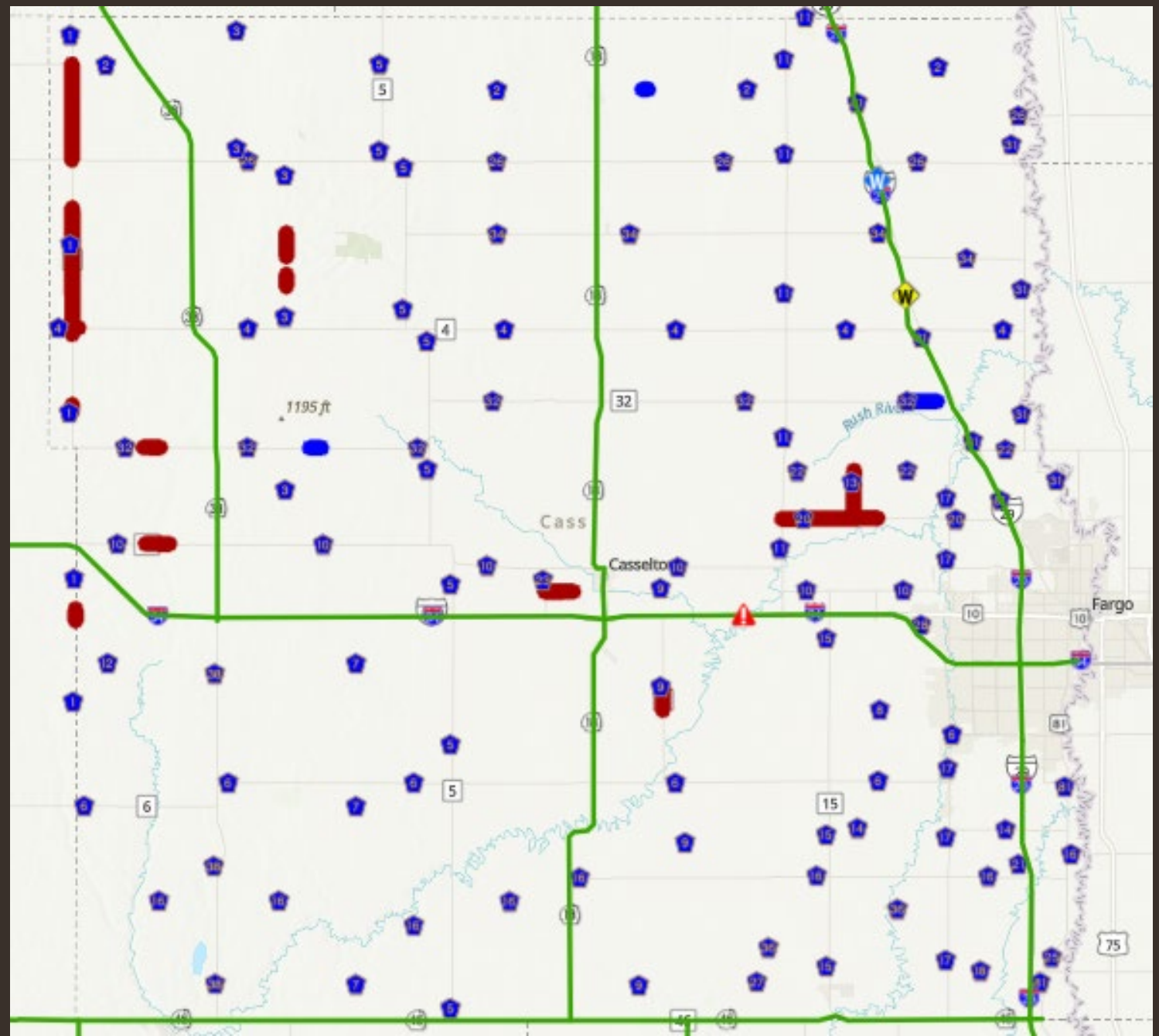
Tactical Operations Center and Flood Operations Hours and Meetings



- ◇ Tactical Operations Center opened on April 21st and closed April 24th. Ran from 7a-7p
- ◇ After hours calls were sent to the Highway Dept on-call leader
- ◇ 8:30am Daily Flood Meetings

Cass County Road Closures or Water Over the Road

-  Road Closed/Water Over Road
-  Local Traffic Only/Speed Reduced
-  Water Over Road



Cass County Flood Recovery

- ◆ Roads
 - ◆ Assess, measure, document damage
 - ◆ Emergency repairs
 - ◆ Larger contracted repairs
- ◆ Sandbag Facility/Equipment
 - ◆ Return conveyors and hoppers, other rentals
 - ◆ Return City of Fargo Equipment
 - ◆ Clean up and evaluate sandbag storage
- ◆ Deployed Sandbags
 - ◆ Pick up full pallets May 1-5 and 8-12
 - ◆ Used sandbags, notify homeowners, pick up May 1-5 and 8-12

