

# Red River and Devils Lake Basins - 2024 Spring Flood Outlook

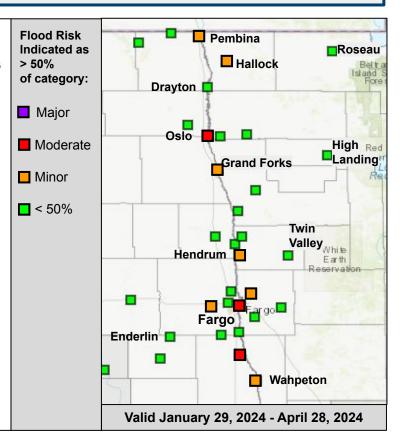
## NWS Grand Forks • North Central River Forecast Center • January 25, 2024

This outlook is for the US portion of the basin and based on conditions through Monday, January 22, 2024. Visit our website at <a href="weather.gov/fgf/currentfloodoutlook">weather.gov/fgf/currentfloodoutlook</a> for associated exceedance graphics, probabilities, and related discussions. Additional spring flood outlooks will be issued on February 15th, February 29th, and March 14th.

Key Message: The risk for significant (moderate or higher) spring flooding is low with this outlook issuance, running below long-term historical averages across the the Red River Basin (US portion).

#### **Key Points:**

- Minor to isolated moderate spring flooding in this outlook (50% exceedance probability) for some locations.
- Although snowfall this winter has been well below normal, rain/freezing rain in late December has contributed to the amount of water waiting to run off into the river system. While soil moisture remains below normal in the north to near normal in the south, streamflows at the end of December were above normal.
- Above normal temperatures expected into spring will allow for some early melting of the snowpack but could introduce the possibility of rain instead of snow in late winter/early spring.
- Late winter and early spring precipitation, along with the timing/thaw cycle of remaining snowpack will be the most important spring flood risk factors.



#### **Snowmelt Flood Components:**

- **1. Fall + December Precipitation and Soil Moisture: Below normal to near normal.** Fall precipitation (Sep-Nov 2022) was below normal for much of the basin while December brought much above normal precipitation, especially to the southern half of the basin. Soil moisture remains much lower than normal across the northern third of the basin with moderate to severe drought conditions while slightly lower to near average elsewhere.
- **2. Base Streamflow: Above normal.** At the end of December, USGS analyses indicated that the Red River mainstem and its tributaries were flowing higher than normal.
- **3. Frost Depth: Near normal but variable.** The recent January cold has allowed for a deeper frost layer to form across much of the basin. The northern half of the area currently has frost depths of 20-30 inches with locations farther south slightly lower. Lake/river observations indicate ice cover is thinner and less consistent than normal due to relatively mild temperatures.
- **4. Snowpack and Associated Water Content: Much below normal.** Snowfall since Dec. 1<sup>st</sup> is running 25-50 percent of normal (i.e., much below normal), lowest across the southern two-thirds of the basin. Associated water content is minimal, highest near the international border (up to 1 inch). However, rain/freezing rain from late December still remains in the soils and on the landscape for runoff into the river system.
- **5. Future Conditions:** Climate outlooks indicate continued above normal temperatures from now into spring. This could allow for some early melting of the snowpack and also introduce the possibility of rain instead of snow in late winter/early spring.

### **DEVILS LAKE AND STUMP LAKE**

Valid January 22, 2024 - September 30, 2024

DEVILS LAKE	95%	90%	75%	50%	25%	10%	5%
Creel Bay	1449.7	1449.7	1449.8	1450.1	1450.5	1450.9	1451.4
Eastern Stump Lake	1449.7	1449.7	1449.8	1450.1	1450.5	1450.9	1451.4

Devils Lake and Stump Lake are currently at ~1449.2 ft (zero datum 1400.00 NGVD29).

#### **RED RIVER AND TRIBUTARIES**

Valid January 29, 2024 - April 28, 2024

Mahperon	RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%	
Hickson	Wahpeton	9.3	9.9	10.6	11.7	12.7	14.8	15.5	Noto
Fargo									
Halstad 13.9 16.1 18.6 23.6 28.9 36.0 38.7 (Grand Forks 0.510 19.6 11.7 23.9 31.1 36.5 42.5 44.6 (Grand Forks 0.510 16.1 19.6 23.8 31.1 36.5 42.5 44.6 (Grand Forks 0.510 16.1 19.6 23.8 31.1 36.6 36.5 41.5 41.6 (Grand Forks 0.510 17.9 28.8 23.3 38.8 36.6 48.5 41.2 (Higher stages than depicted may occur. Permbina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 45.3 48.9 50.8 (Higher stages than depicted may occur. Prombina 23.9 27.4 32.7 39.8 48.9 4 10.1 36.7 31.1 31.1 31.1 31.1 31.1 31.1 31.1 31									
Grand Forks	_								-
Oslo   16.1   19.6   23.8   31.7   34.0   35.6   36.5   Jamming, etc.   Higher stages than depicted may occur.									
Drayton   27.9   20.8   23.3   39.8   36.6   49.5   41.2   40.5									
Pembin   23.9   27.4   32.7   39.8   45.3   48.9   50.0									
Mannesora Tributaries   95%   96%   75%   56%   25%   16%   5%	_								
South Fork Buffalo River Sabin Buffalo River Hawley	PeliloTria	23.9	27.4	32./	39.0	45.5	40.9	50.0	
Sabin 9.8 10.2 11.4 12.6 13.4 14.8 16.2  Buffalo River Hawley 5.6 5.9 6.5 7.5 8.4 9.4 10.1 Dilworth 10.2 10.6 12.3 15.4 17.8 20.8 23.1  Wild Rice River Twin Valley 4.2 4.3 4.6 6.3 7.5 8.4 10.4 Hendrum 10.5 13.8 16.9 20.8 24.4 28.2 30.9  Marsh River Shelly 5.9 6.1 7.2 8.8 11.5 15.7 23.1 Sand Hill River Climax 6.8 7.6 8.0 11.6 14.9 22.2 24.8  Red Lake River High Landing 2.9 3.2 3.7 4.5 6.0 7.8 8.3 Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6 Snake River Alavando 99.3 99.9 100.7 102.8 105.5 107.4 108.5  Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7  Roseau River Roseau River Roseau River Roseau River 18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Food stages increased by 10.0 ft October 2023  Shely City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred West Fango Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 13.1 Lisbon 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Hillsboro 12.2 2.3 2.8 3.4 4.8 6.7 8.1  Pemblian River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pemblian River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pemblian River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pemblian River Wallalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	MINNESOTA TRIBUTARIES	95%	90%	75%	50%	25%	10%	5%	
Buffalo River Hawley 5.6 5.9 6.5 7.5 8.4 9.4 10.1 Dilworth 10.2 10.6 12.3 15.4 17.8 20.8 23.1 Wild Rice River Twin Valley 10.5 13.8 16.9 20.8 24.4 28.2 30.9 Marsh River Shelly 5.9 6.1 7.2 8.8 11.5 15.7 23.1 Sand Hill River Climax 6.8 7.6 8.0 11.6 14.9 22.2 24.8 Red Lake River High Landing 2.9 3.2 3.7 4.5 6.0 7.8 8.3 Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6 Snake River Above Warren 62.6 62.7 63.2 63.9 64.8 65.4 66.4 Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5 Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7 Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7 MORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5% Wild Rice River Abercrombie* 18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023 Welst Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Hartwood 74.9 75.6 77.3 80.2 83.8 90.1 19.16 Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8 Minor Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Maple to 12.2 2.3 2.8 3.4 4.8 6.7 8.1 Pemblina River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1 Pemblina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	South Fork Buffalo River								
Hawley 5.6 5.9 6.5 7.5 8.4 9.4 10.1 Dilworth 10.2 10.6 12.3 15.4 17.8 20.8 23.1 Wild Rice River Twin Valley 4.2 4.3 4.6 6.3 7.5 8.4 10.4 Hendrum 10.5 13.8 16.9 20.8 24.4 28.2 30.9 Marsh River Shelly 5.9 6.1 7.2 8.8 11.5 15.7 23.1 Sand Hill River Climax 6.8 7.6 8.0 11.6 14.9 22.2 24.8 Red Lake River High Landing 2.9 3.2 3.7 4.5 6.0 7.8 8.3 Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6 Snake River Above Warren 62.6 62.7 63.2 63.9 64.8 65.4 66.4 Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5 Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7 Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7 NORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5% Wild Rice River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 74 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Harwood Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 13.1 Lisbon 74.9 75.6 77.3 80.2 83.8 90.1 91.6 Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8 Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4 Forest River Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8 Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4 Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1 Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Sabin	9.8	10.2	11.4	12.6	13.4	14.8	16.2	
Dilworth   10.2   10.6   12.3   15.4   17.8   20.8   23.1	Buffalo River								
Dilworth   10.2   10.6   12.3   15.4   17.8   20.8   23.1	Hawley	5.6	5.9	6.5	7.5	8.4	9.4	10.1	
Wild Rice River   Twin Valley   4.2		10.2	10.6	12.3	15.4	17.8	20.8	23.1	
Twin Valley Hendrum 10.5 13.8 16.9 20.8 24.4 28.2 36.9  Marsh River Shelly 5.9 6.1 7.2 8.8 11.5 15.7 23.1  Sand Hill River Climax 6.8 7.6 8.0 11.6 14.9 22.2 24.8  Red Lake River High Landing 2.9 3.2 3.7 4.5 6.0 7.8 8.3  Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6  Snake River Above Warren Above Warren 62.6 62.7 63.2 63.9 64.8 65.4 66.4  Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5  Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7  Roseau River Roseau	Wild Rice River								
Hendrum		4.2	4.3	4.6	6.3	7.5	8.4	10.4	
Marsh River Shelly Sand Hill River Climax Red Lake River High Landing Crookston Snake River Above Warren Above Warren Hallock Roseau Ro	-								
Shelly		2.3							
Sand Hill River Climax   6.8   7.6   8.0   11.6   14.9   22.2   24.8   Red Lake River High Landing   2.9   3.2   3.7   4.5   6.0   7.8   8.3   Milnor Moderate Major Crookston   7.5   7.8   9.1   12.0   14.6   17.8   20.6   Major Flood of Record*	Shellv	5.9	6.1	7.2	8.8	11.5	15.7	23.1	
Climax   C									
Red Lake River High Landing 2.9 3.2 3.7 4.5 6.0 7.8 8.3 Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6  Snake River Above Warren 62.6 62.7 63.2 63.9 64.8 65.4 66.4 Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5  Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7  Roseau River Roseau River Roseau River Roseau River Abercrombie* 18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023  Sheyenne River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6 Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6		6.8	7.6	8.0	11.6	14.9	22.2	24.8	_
High Landing Crookston 7.5 7.8 9.1 12.0 14.6 17.8 20.6  Major Flood of Record*  Major Flood of Record*									
Crookston Snake River Above Warren Alove Walley City Alove Warren Alove Walley City Alove Warren Alove Walley City Alove Market Walley City Alove Walley City Alove Market Walley City		2.9	3.2	3.7	4.5	6.0	7.8	8.3	
Snake River Above Warren Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5  Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7  Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7  NORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5%  Wild Rice River Abercrombie* 18.1 19.0 21.5 24.7 27.6 32.4 34.4 Flood stages increased by 10.0 ft October 2023  Sheyenne River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1  Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0  West Fargo Diversion Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7  Mapleton 600se River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	_								
Above Warren Alvarado 99.3 99.9 100.7 102.8 105.5 107.4 108.5  Two Rivers River Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7  Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7  NORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5%  Wild Rice River Abercrombie* 18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023  Sheyenne River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1  Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0  West Fargo Diversion Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7  Mapleton Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6		, , ,							7 7000 07 Acoord
Alvarado		62.6	62.7	63.2	63.9	64.8	65.4	66.4	
Two Rivers River Hallock Roseau River Roseau River Roseau  7.3 7.8 8.6 10.1 11.7 13.7 15.7  NORTH DAKOTA TRIBUTARIES  95% 90% 75% 50% 25% 10% 5%  Wild Rice River Abercrombie* Sheyenne River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6									
Hallock 797.3 798.5 799.7 802.1 805.3 807.0 807.7 Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7 NORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5% 10% 5% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10		33.3	,,,,	10017	102.0	103.3	1071	100.3	
Roseau River Roseau 7.3 7.8 8.6 10.1 11.7 13.7 15.7  NORTH DAKOTA TRIBUTARIES 95% 90% 75% 50% 25% 10% 5%  Wild Rice River Abercrombie* 18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023  Sheyenne River  Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1  Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0  West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1  Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River  Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7  Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River  Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River  Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River  Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6		797.3	798.5	799.7	802.1	805.3	807.0	807.7	
NORTH DAKOTA TRIBUTARIES   95%   90%   75%   50%   25%   10%   5%		, , , , ,	, , , ,	, , ,					
NORTH DAKOTA TRIBUTARIES         95%         90%         75%         50%         25%         10%         5%           Wild Rice River             Abercrombie*         18.1         19.0         21.5         24.7         27.6         32.4         34.4 *Flood stages increased by 10.0 ft October 2023           Sheyenne River             Valley City             6.2             6.4             6.8             8.1             10.0             11.5             13.1                 Lisbon             5.4             5.7             6.3             8.0             9.9             11.5             12.9                 Kindred             7.4             7.9             8.9             10.8             12.5             15.8             18.0                 West Fargo Diversion               10.6             10.8             10.9             12.7             13.0             15.2             17.1                 Harwood             74.9             75.6             77.3                80.2             83.8             90.1             91.6                 Maple River             Enderlin             5.6             6.2             7.1             8.4             10.0             11.5             12.7                 Maple ton		7.3	7.8	8.6	10.1	11.7	13.7	15.7	
Wild Rice River Abercrombie*  18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023  Sheyenne River Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0  West Fargo Diversion Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7  Mapleton Goose River Hillsboro 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6									
Abercrombie*  18.1 19.0 21.5 24.7 27.6 32.4 34.4 *Flood stages increased by 10.0 ft October 2023  Sheyenne River  Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1  Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9  Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0  West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1  Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River  Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7  Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River  Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River  Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River  Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	NORTH DAKOTA TRIBUTARIES	95%	90%	/5% 	50%	25%	10%	5%	
Sheyenne River  Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6									
Valley City 6.2 6.4 6.8 8.1 10.0 11.5 13.1 Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6 Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8 Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4 Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1 Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6		18.1	19.0	21.5	24.7	27.6	32.4	34.4	* Flood stages increased by 10.0 ft October 2023
Lisbon 5.4 5.7 6.3 8.0 9.9 11.5 12.9 Kindred 7.4 7.9 8.9 10.8 12.5 15.8 18.0 West Fargo Diversion 10.6 10.8 10.9 12.7 13.0 15.2 17.1 Harwood 74.9 75.6 77.3 80.2 83.8 90.1 91.6  Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Sheyenne River								
Kindred       7.4       7.9       8.9       10.8       12.5       15.8       18.0         West Fargo Diversion       10.6       10.8       10.9       12.7       13.0       15.2       17.1         Harwood       74.9       75.6       77.3       80.2       83.8       90.1       91.6         Maple River       5.6       6.2       7.1       8.4       10.0       11.5       12.7         Mapleton       12.6       13.0       15.0       18.6       20.6       22.1       22.8         Goose River       Hillsboro       3.6       4.0       4.7       5.8       8.2       12.5       13.4         Forest River       Minto       2.2       2.3       2.8       3.4       4.8       6.7       8.1         Pembina River       Walhalla       3.0       3.3       3.6       4.2       5.5       7.7       8.6		6.2	6.4	6.8	8.1	10.0	11.5		
West Fargo Diversion       10.6       10.8       10.9       12.7       13.0       15.2       17.1         Harwood       74.9       75.6       77.3       80.2       83.8       90.1       91.6         Maple River       5.6       6.2       7.1       8.4       10.0       11.5       12.7         Mapleton       12.6       13.0       15.0       18.6       20.6       22.1       22.8         Goose River       Hillsboro       3.6       4.0       4.7       5.8       8.2       12.5       13.4         Forest River       Minto       2.2       2.3       2.8       3.4       4.8       6.7       8.1         Pembina River       Walhalla       3.0       3.3       3.6       4.2       5.5       7.7       8.6	Lisbon	5.4	5.7	6.3	8.0	9.9	11.5	12.9	
Harwood       74.9       75.6       77.3       80.2       83.8       90.1       91.6         Maple River       5.6       6.2       7.1       8.4       10.0       11.5       12.7         Mapleton       12.6       13.0       15.0       18.6       20.6       22.1       22.8         Goose River       Hillsboro       3.6       4.0       4.7       5.8       8.2       12.5       13.4         Forest River       Minto       2.2       2.3       2.8       3.4       4.8       6.7       8.1         Pembina River       Walhalla       3.0       3.3       3.6       4.2       5.5       7.7       8.6	Kindred	7.4	7.9	8.9	10.8	12.5	15.8	18.0	
Maple River Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	West Fargo Diversion	10.6	10.8	10.9	12.7	13.0	15.2	17.1	
Enderlin 5.6 6.2 7.1 8.4 10.0 11.5 12.7 Mapleton 12.6 13.0 15.0 18.6 20.6 22.1 22.8  Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Harwood	74.9	75.6	77.3	80.2	83.8	90.1	91.6	
Mapleton       12.6       13.0       15.0       18.6       20.6       22.1       22.8         Goose River       3.6       4.0       4.7       5.8       8.2       12.5       13.4         Forest River       Minto       2.2       2.3       2.8       3.4       4.8       6.7       8.1         Pembina River       Walhalla       3.0       3.3       3.6       4.2       5.5       7.7       8.6	Maple River								
Goose River Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Enderlin	5.6	6.2	7.1	8.4	10.0	11.5	12.7	
Hillsboro 3.6 4.0 4.7 5.8 8.2 12.5 13.4  Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Mapleton	12.6	13.0	15.0	18.6	20.6	22.1	22.8	
Forest River Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Goose River								
Minto 2.2 2.3 2.8 3.4 4.8 6.7 8.1  Pembina River  Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Hillsboro	3.6	4.0	4.7	5.8	8.2	12.5	13.4	
Pembina River Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Forest River								
Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6	Minto	2.2	2.3	2.8	3.4	4.8	6.7	8.1	
Walhalla 3.0 3.3 3.6 4.2 5.5 7.7 8.6									
		3.0	3.3	3.6	4.2	5.5	7.7	8.6	