



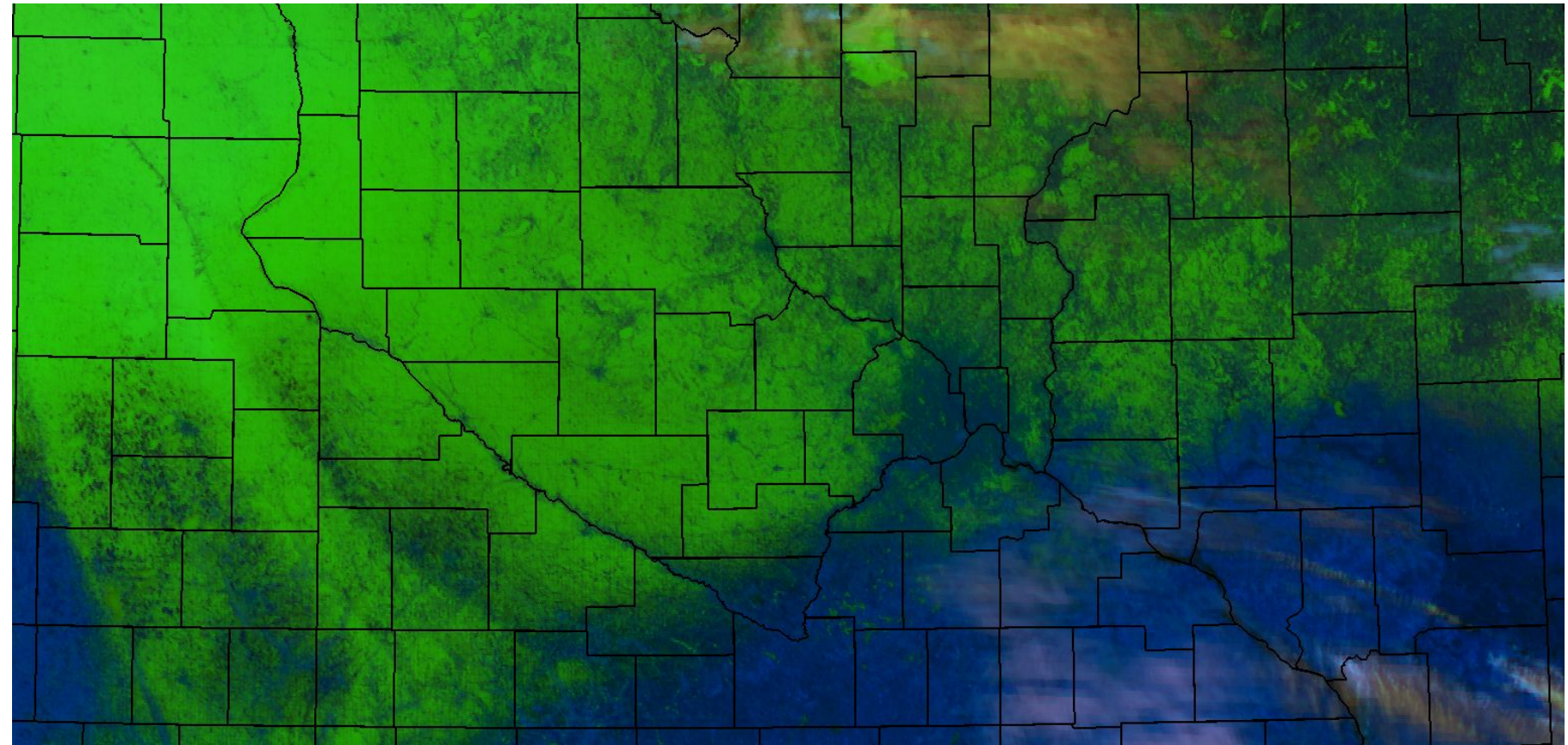
Spring Flood DSS Packet

April 7, 2023
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Upper Mississippi, Minnesota, and Chippewa (WI) River basins

Key Messages

- The major spring snowmelt is starting this weekend. Temperatures will be warming rapidly, and going well above normal for most of the next week. Low temperatures will remain above freezing, meaning the melt will be going 24/7.
- We will see the first effects of the snowmelt later this weekend in low lying areas, small streams and creeks, and drainages as the melt begins to take hold (green areas denote remaining snowpack) →
- Larger streams and tributary rivers are starting from frozen conditions or low flows, and will start to reach flood stage next week.
- Mainstem rivers like the Mississippi, St. Croix, and Chippewa are rising slowly now, and will increase rapidly next week, approaching flood stage toward the end of the week/early next week.



Satellite image from April 7, 2023, showing where snowpack is in place.





Forecast Temperatures

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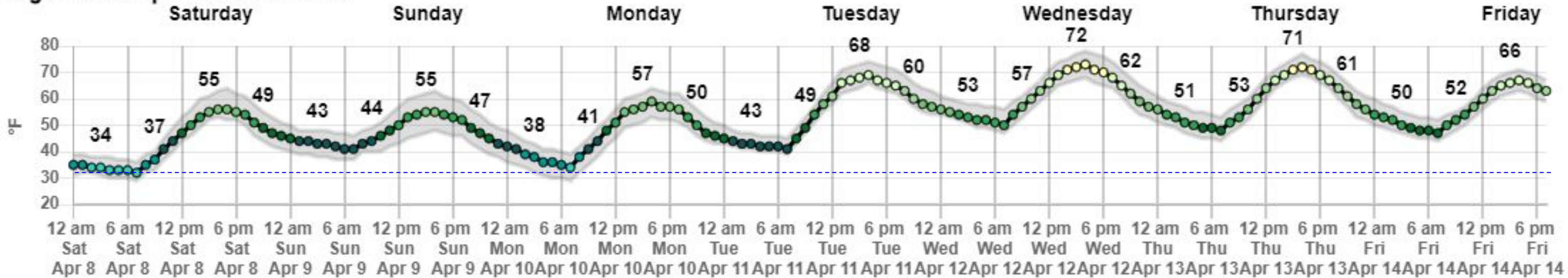
Forecast High/Low temperatures over the next 7 days

Temperatures remain above freezing over the next 7 days. The melt will begin quickly, and those areas with a deep snowpack will see the effects rather quickly as well.

	4/8 Sat				4/9 Sun				4/10 Mon				4/11 Tue				4/12 Wed				4/13 Thu				4/14 Fri			
	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm
Ladysmith	35	43	54	52	40	51	60	57	46	52	61	58	45	58	69	66	55	64	74	72	57	61	73	70	55	58	69	66
Montevideo	32	40	54	53	45	42	48	46	36	42	53	52	43	55	66	63	54	59	68	65	51	56	70	66	50	53	63	60
Saint Cloud	34	43	55	53	45	46	50	48	37	45	56	54	43	56	66	64	54	61	70	67	53	58	69	66	52	55	64	61
Twin Cities	39	49	64	62	50	54	63	60	48	52	64	62	50	62	74	72	61	67	78	76	61	64	77	74	60	60	71	69

*Table values in °F
**Created: 10 am CDT Fri 4/7/2023

Regional Temperature Forecast





Forecast Precip. Amounts

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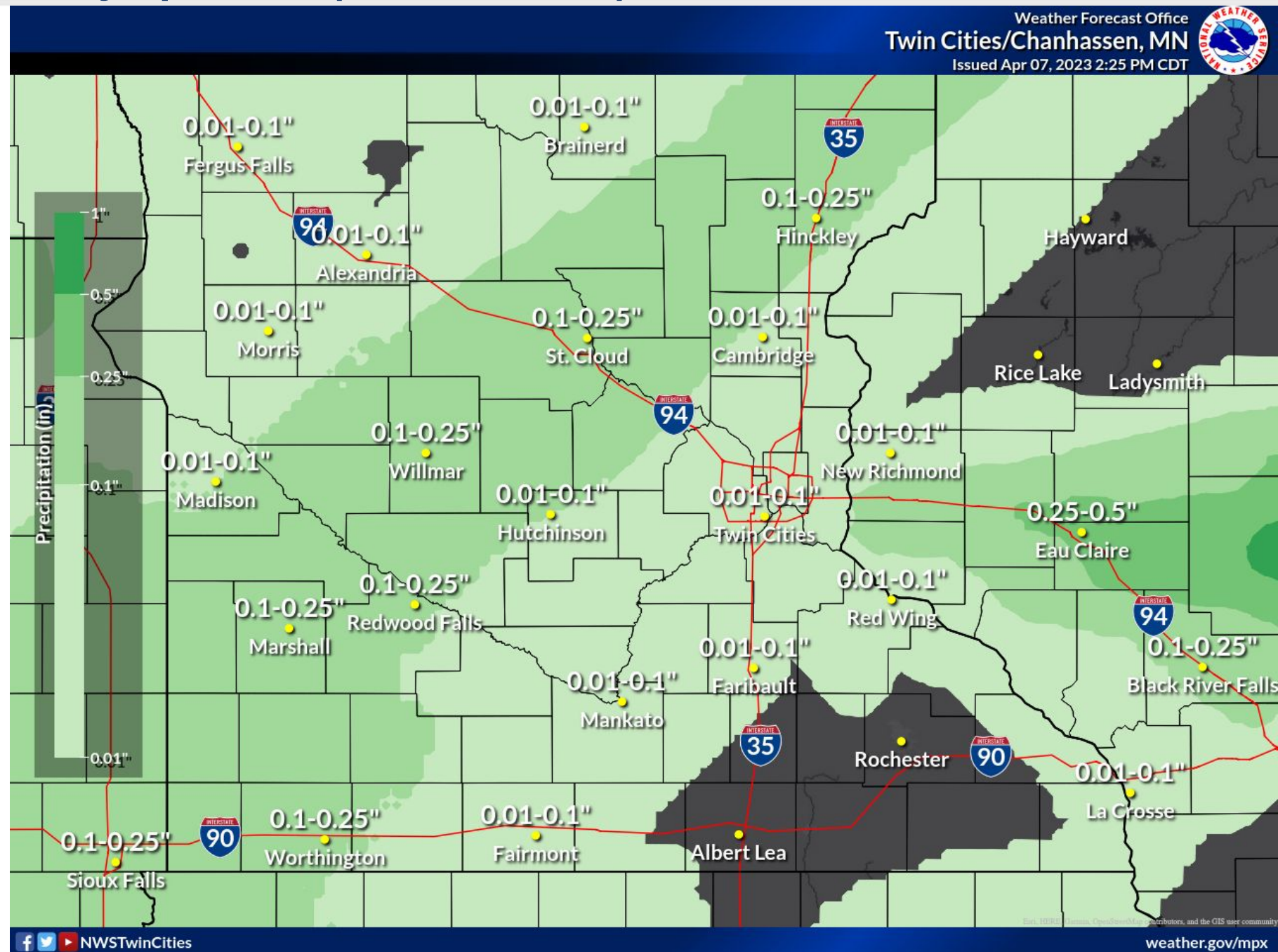
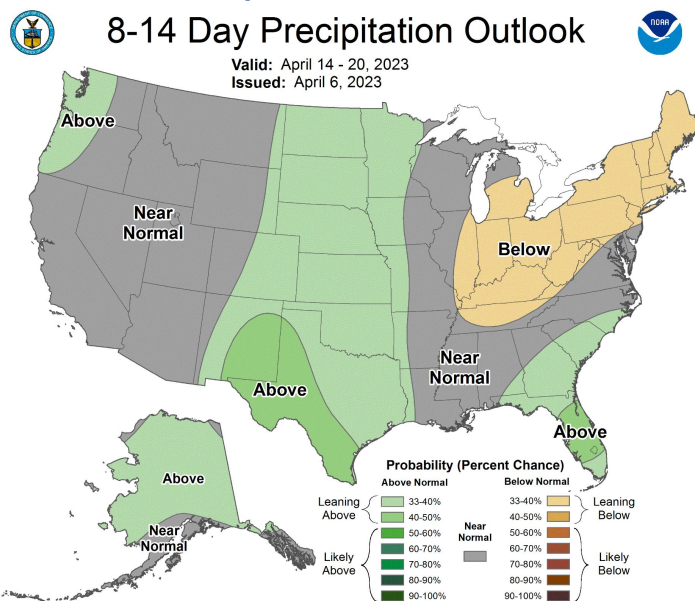
Additional precipitation through Friday April 14th (rain and snow)

Dry Forecast for the Next Week

- While we will see a few areas of showers move through the region this weekend, total amounts will be light.
- Rainfall amounts will not be enough to affect flooding during the week.

But Week Two Could be Wetter

- Models are hinting at the possibility of wetter conditions from April 15th-18th:





River Forecast Uncertainties

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Factors Beyond Snowmelt

Flood Factors to Keep in Mind

• Recent Drought

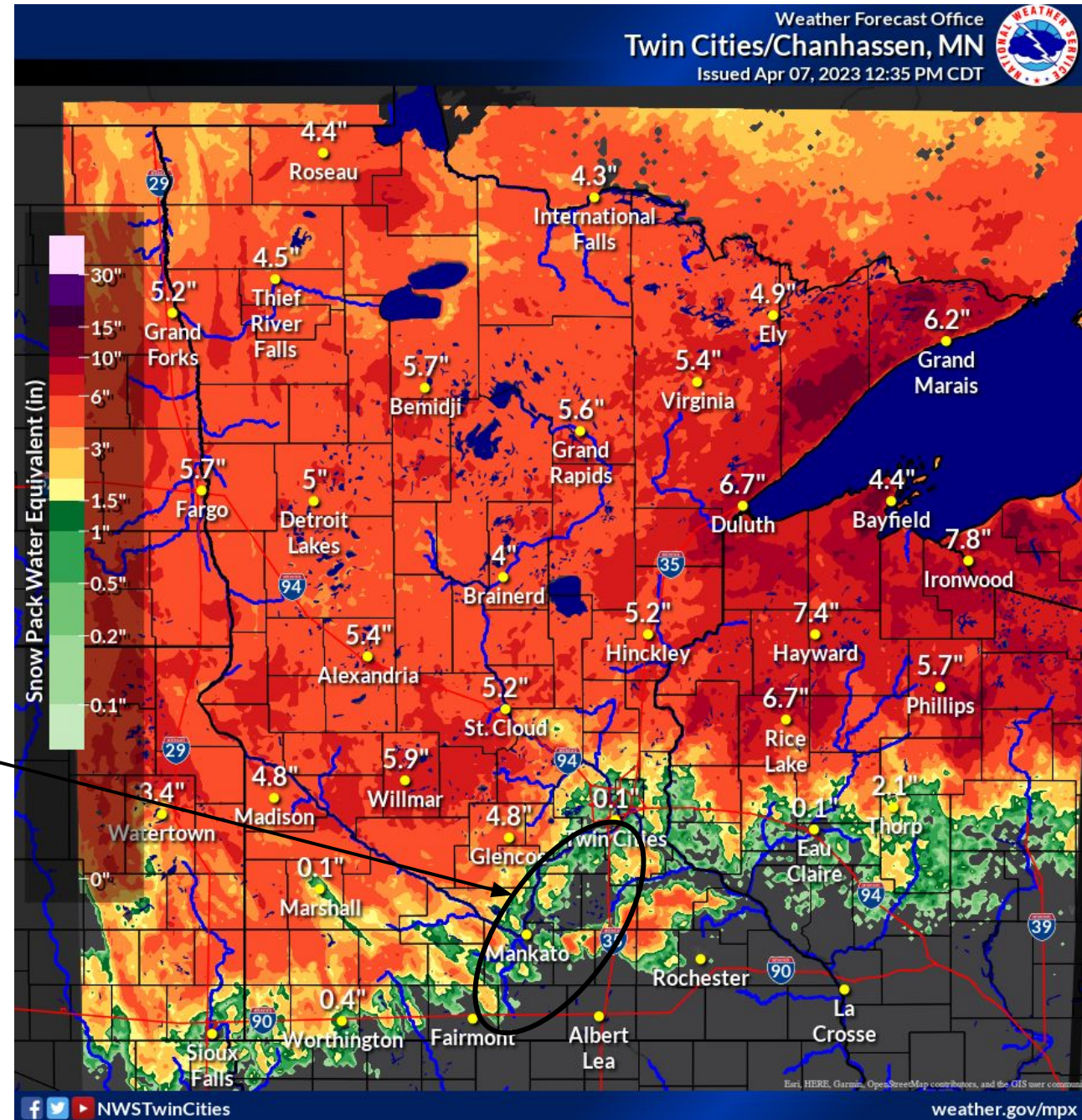
- Lakes/ponds/wetlands are low, will intercept some of the runoff.
- Soil Moisture was very low coming into winter; has recovered some, but can also hold some moisture.

• Runoff Timing

- Some basins (lower Minnesota) have already melted part of the basin, which may help keep the overall peak down.
- Others (Upper Mississippi, St. Croix, Chippewa) could send much of the upper basin melt downstream at once, thus the greater threat of major flooding there.

• Ice

- Many rivers are still frozen at the surface; ice jams are possible in favored locations.



Map of Snow Water Equivalent (SWE) from April 7, 2023

Much of the upper Minnesota, Mississippi, St. Croix, and Chippewa have over 4 inches of water to melt in the snowpack.





River Forecast Information

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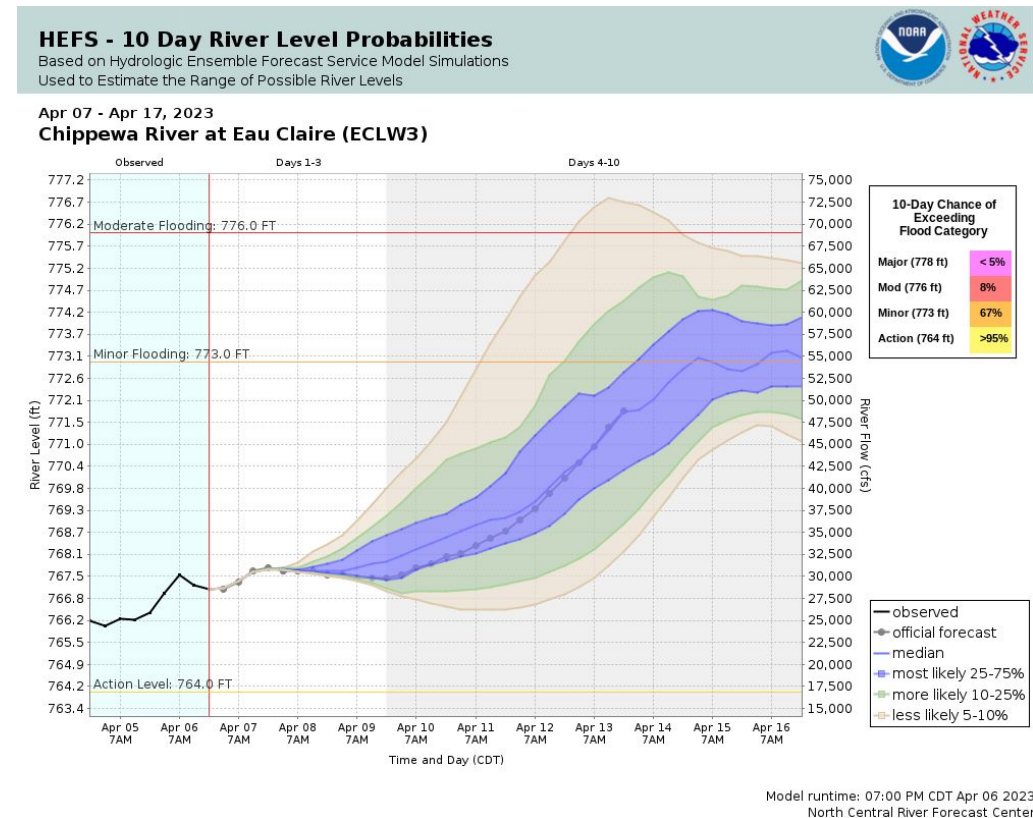
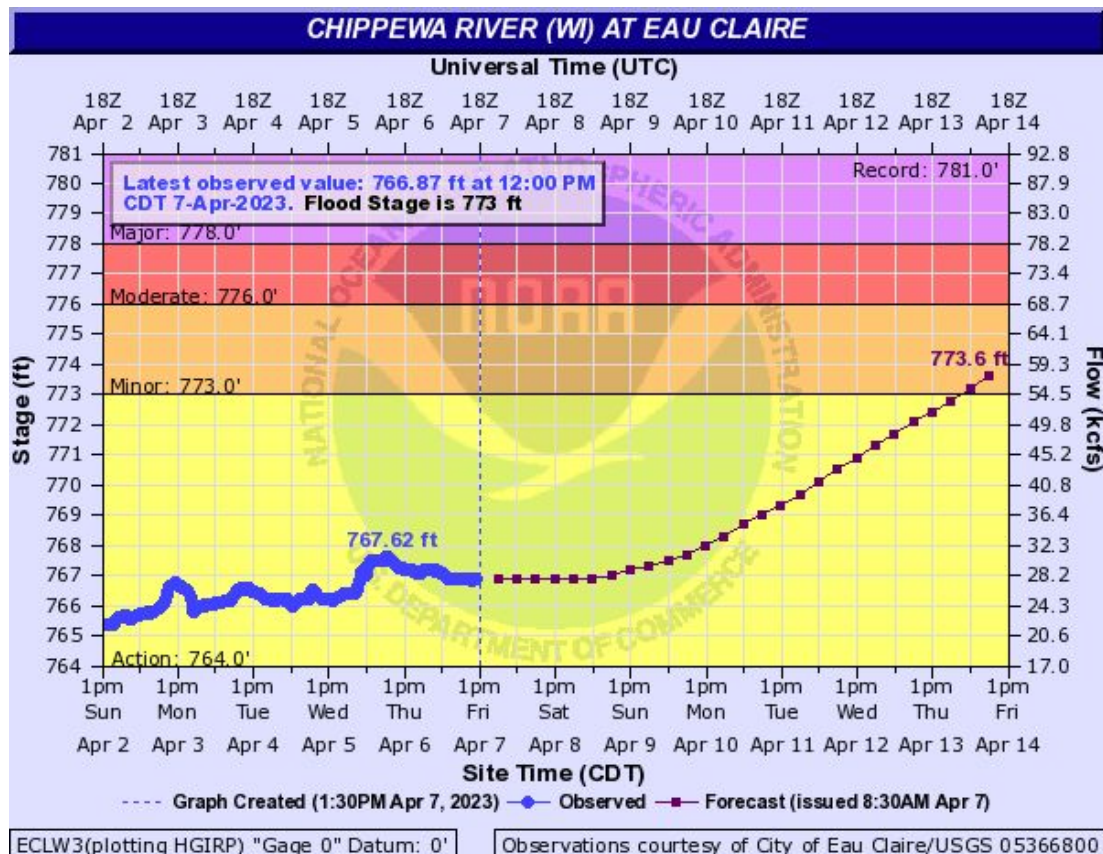
Where to look for river forecasts

NWS River Forecasts

- Go to: water.weather.gov/ahps2/index.php?wfo=mpx
- Official forecast hydrographs
 - Based on current conditions of snowpack, soil moisture, forecast temperatures, and 24 hours of forecast precipitation

NWS Ensemble Guidance

- From Forecast Hydrograph Page, choose third entry under “Probability Information” tab
- 10 Day Experimental Ensemble Guidance (HEFS)
 - Also based on current conditions, plus 10 day precipitation forecast probabilities
 - Can be used for longer range guidance
 - NOT an official forecast, completely model driven, so use with caution.





What to Watch For

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Final Thoughts

Summary

- The snowmelt is beginning now...
- Widespread flooding likely, from smaller streams first to major rivers over the next two weeks.
- Uncertainties exist in how soils will interact with the melt.
- Severity of flooding could increase if heavy rain develops in week two.
 - Pay attention to rainfall forecasts (weather.gov/mpx) and watch for trends toward heavier rainfall in the long term
 - Keep up with river forecasts and longer term experimental guidance, watch for increasing trends if precipitation is expected.

