National Weather Service
Twin Cities / Chanhassen, MN
Thursday, February 27, 2020

nws.twincites@noaa.gov
mobile.weather.gov
weather.gov/mpx

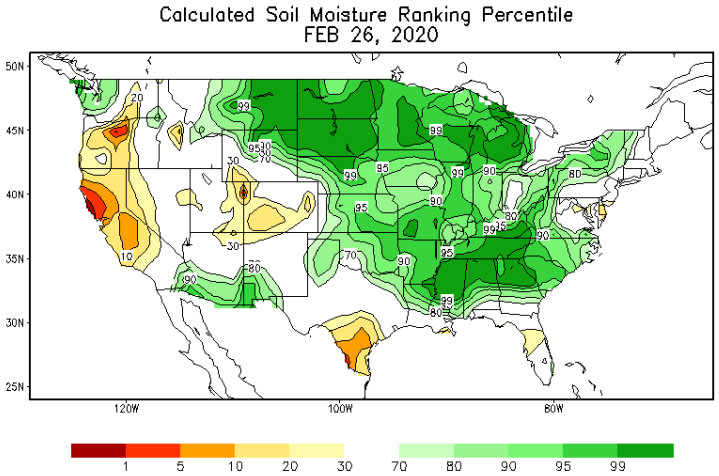
Feb 27th Update: Spring Flood Outlook – Elevated Threat

- Flood factors have changed only very slightly…no snowpack increase last two weeks has helped.
- Current conditions suggest spring **flooding will be more likely** than in a typical year throughout the Upper Midwest, **but significant flooding is less certain**.
- Major factors to flood potential will be determined over the next six weeks.

What Do We Know So Far?

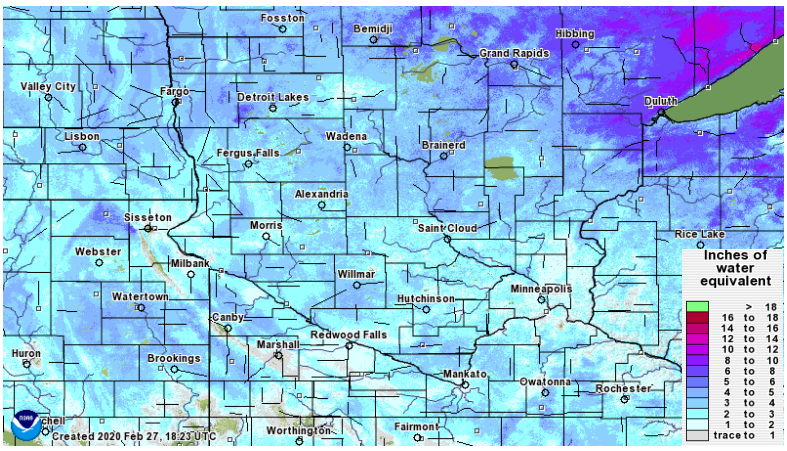
Soils are Extremely Wet

All of the Upper Midwest received nearly 150 to 200 percent more than normal rainfall last fall. This continued to supply soils with excess moisture as we froze the upper portion of the soil.



Streamflow is still High for Winter months; Snow Water Equivalent (SWE) is near normal

SWE is close to normal for late February, which is now significantly less than last year at this time. A lack of new snow in the last two weeks has helped!



What does this mean?

Early factors are still primed for significant runoff.

The lower snowpack thus far is slowly starting to reduce the **major** flood threat, but rainfall at the wroing time would increase the risk of major spring flooding. Much like last year, the type of melt we get will be a major factor. Recall that **we had a nearly ideal melt in spring 2019** (meaning mild days with cold nights for recovery, and a three-week period of no rain/snow in March). Could we see that again in 2020?

Let's look at the extended forecast trends on the next page...

National Weather Service
Twin Cities / Chanhassen, MN
Thursday, February 27, 2020

nws.twincites@noaa.gov
mobile.weather.gov
weather.gov/mpx

Spring Flood Threat Checklist (as of late February)

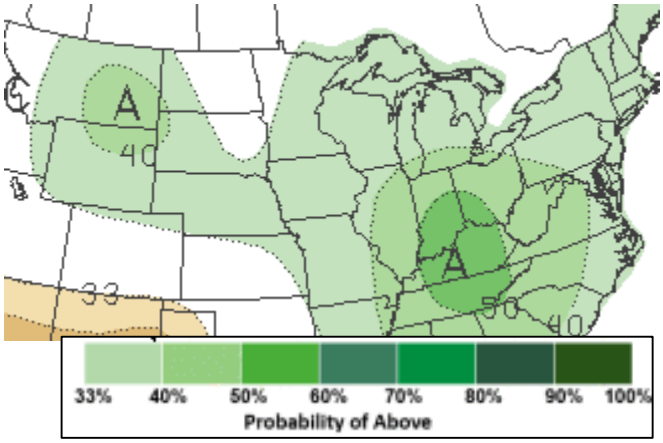
Threat	Impact to Potential Spring Flooding and Trend	Link to Image
High base river levels	**Increased Threat – steady**	NWS river gage page
High soil moisture	**Increased Threat – steady**	CPC Soil Moisture
Snowpack/Liquid Equivalent	**Neutral – Slightly improving**	Snow Analysis
Rate of Snowmelt	**To Be Determined**	**24**, **48**, & **72** hr Snowmelt
Frost Depth*	**Decreased threat – improving**	Frost Depth Map
Spring Precipitation	**To Be Determined**	Seven day Precip Forecast

** Frost depth is shallow (around 1 ft) so far this winter due to mild temperatures and early snow "blanket".*

Spring 2020: *Weather Outlook*

Models are showing continued fairly dry weather for the next 10-14 days, coupled with a mild temperature pattern. This would be an ideal pattern to help melt some of the snow early, without rainfall or additional snow. Beyond that, we are susceptible to a return of stormy weather to the region.

Soils will remain extremely wet which would leave us susceptible to major flooding if heavy rainfall occurs at all during the spring months.



The Spring Outlook for Mar-May 2020 indicates slightly elevated chances for above normal precipitation.

Final Update Planned for March 12th.

…we'll see how the next two weeks affect the snowpack!

Potential Flooding Impacts For Spring 2020

- **Widespread flooding affecting infrastructure remains possible; major flooding if we see heavy rain.**
- **Including land adjacent to lakes and wetlands; also lowlands, agriculture, overland flooding.**

The National Weather Service urges those who would be affected by flooding to ***Prepare Now*** *and stay tuned to updates as we move into early spring.*

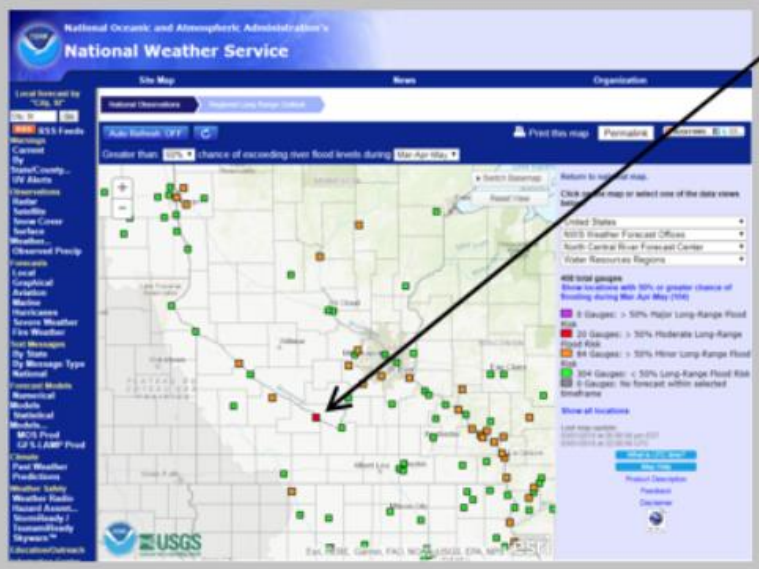
National Weather Service
Twin Cities / Chanhassen, MN
Thursday, February 27, 2020

nws.twincites@noaa.gov
mobile.weather.gov
weather.gov/mpx

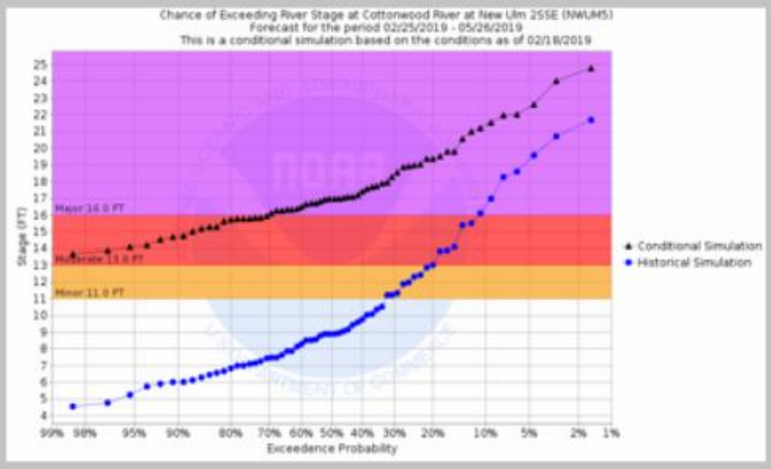
How to Read the Long Range Flood Risk Graphics –

at https://water.weather.gov/ahps2/long_range.php?wfo=mpx

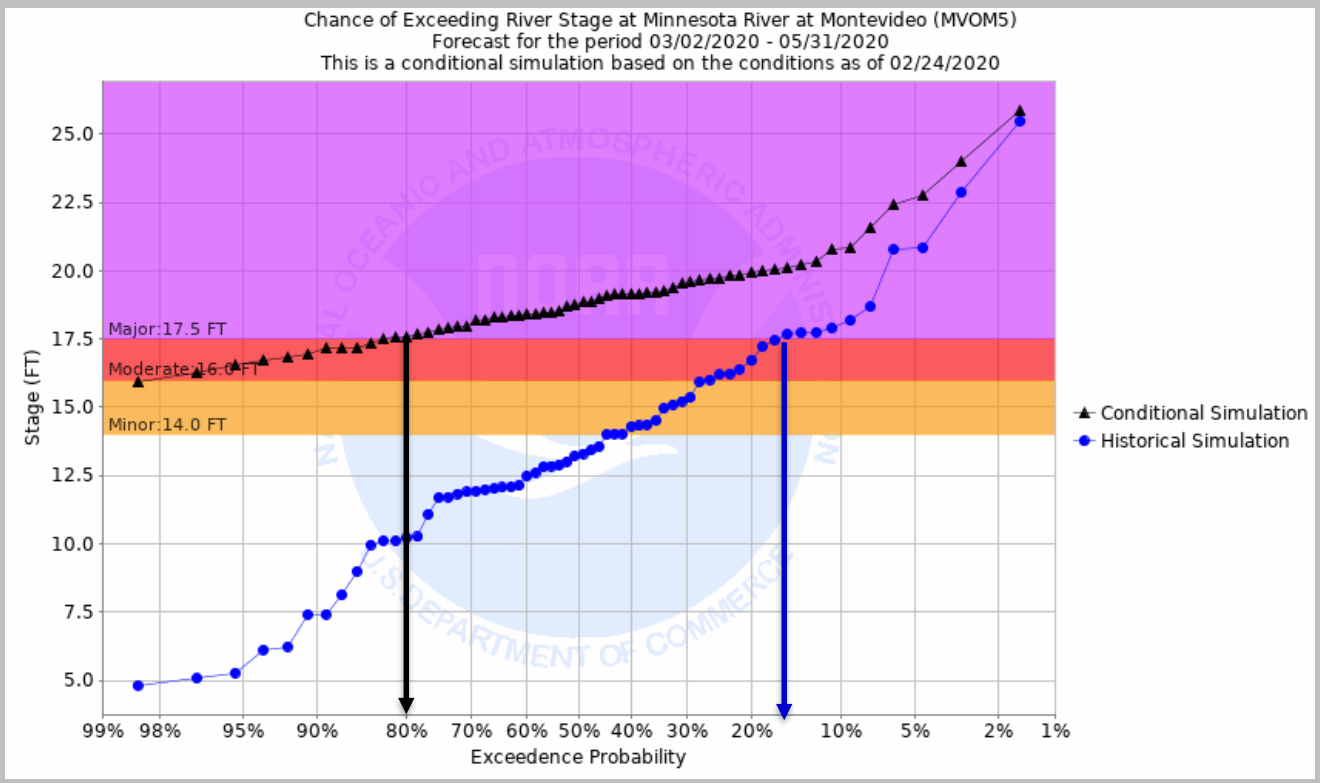
River forecasters run long range river models, including current soil moisture profiles, snow pack info, and 45-day model precipitation forecasts. The result is a graph of probability of reaching various stages .



Click a point in here -- hover over the "Probability Information" tab – and select the "...during Entire Period" graph. It will look something like this:



For Example, Check the Minnesota River at Montevideo … probability of reaching major flood stage (17.5 feet):



Black line represents the latest probabilities; Blue line represents historical average. In this case, the chance of reaching major flood stage (purple) at Montevideo is near 80 percent, up from about 17 percent in a normal year.