

Despite the fact that recent severe flooding is diminishing, the threat for additional severe flooding remains high. The conditions that led to the record flooding remain in place across much of the Red River Basin and its tributaries. This is especially true of the southern part of the basin upstream of Fargo and the Sheyenne River Basin. National Weather Service Advanced Hydrologic Prediction Service outlooks produced on April 2nd indicate a 75 percent chance that the Fargo/Moorhead area will experience a second crest in late April equaling or exceeding the 41 foot stage, which would set a new record. The Baldhill reservoir on the Sheyenne River has a near certainty of seeing a record inflow. The outflow from the dam and resultant peak level in Valley City is highly dependent on the rate of melt and other factors within the city such as bridge obstructions and other flow obstacles. The National Weather Service is working closely with the Army Corps of Engineers on investigating various reservoir operation scenarios to mitigate peak levels on the Sheyenne River.

I will now lay out the reasoning why there is a high percentage chance of setting new records with the second crest at many locations in the Red River Valley.

1. All-time records for precipitation have been set at Fargo, Grand Forks and other observing stations across the Red River Valley over the past seven months. These all-time records have been exceeded by several inches. This is particularly evidenced across southeastern ND and adjacent portions of west central MN.
 - a. Fargo has experienced its 2nd snowiest winter on record with nearly 80 inches to date, second only to 1996-97. Many other observing stations will report near record snowfalls this winter when the final numbers are in.
2. Frozen ground. The winter, as measured by average temperature at Fargo was 22nd coldest in over 125 years on record. This severe cold hit in late November when soils were saturated and before an insulating blanket of snow was laid down. This resulted in a very hard frost, known to hydrologists as “concrete” frost. This frost condition produced very high runoff rates during the first crest and observations indicate that this frost condition remains and will aid in producing high runoff rates during the next runoff period.
3. Significant amounts of water remain in the Red River watershed. Floodplain storage, including sloughs and lakes, is at capacity, so any new

inputs as rain or snowmelt will not be stored, but will contribute to flow in the rivers.

4. The severe cold after the storm of March 23rd - 26th froze runoff in place on the landscape. This ice plus the snow that fell at the end of the storm on March 26 left one-half to one and a half (1.5) inches of frozen water on the landscape south of Fargo. The blizzard of March 30th – April 1st produced an additional one (1) to two and a half (2.5) inches of water as snow. The total amount of water available in snow and ice on the watershed south of Fargo ranges from one and a half (1.5) to nearly four (4) inches. These snow water contents were observed by the NOAA Airborne Snow Survey on April 2nd.
5. Flood control reservoirs were filled to near capacity with the first runoff event. The reservoirs are currently releasing water in order to make storage available for the next runoff event. There is not enough time to drain the reservoirs to gain full flood control storage capacity. The ability of these reservoirs to aid in mitigating the next runoff event will be dependent on the amount of time that elapses before the next runoff period begins.
6. This year's runoff season does not compare to any season in peoples collective memory. Many people have tried to use historical analogs or

comparisons to predict river crests this year and they have all been low. The Red River valley is experiencing a hydrologic phenomenon over the past 7 months that has never been seen in recorded history. Extreme inputs produce extreme outputs. Due to the extreme meteorological patterns that have dominated over the past 7 months, and the fact that spring is just beginning, the Red River and its tributaries will be very susceptible to additional flooding the remainder of spring and into the summer.

The National Weather Service's Advanced Hydrologic Prediction Service analyzes the weather records over the past 58 years to produce 58 possible scenarios of river behavior for the next 90 days.

I will now detail the river stage exceedence probabilities for a few selected locations:

Wahpeton/Breckenridge

There is an 85 percent chance of exceeding the previous crest of 17.5 feet.

Fargo/Moorhead

There is a 75 percent chance of equaling or exceeding 41 feet, which would set a new record, and a 25 percent chance of equaling or exceeding 42.8 feet.

East Grand Forks/Grand Forks

There is a 40 percent chance of equaling or exceeding 52 feet.

Valley City, ND on the Sheyenne River

Near certainty of equaling or exceeding the previous flood of record of 20 feet set in 1882.

Crookston, MN on the Red Lake River

There is a 45 percent chance of equaling or exceeding the earlier crest of 25.6 feet and a 15 percent chance of equaling or exceeding 27 feet.

The second crests across the Red River basin are expected in the latter half of April. There is uncertainty about the timing of the second crest in the Fargo/Moorhead area. The Red River is expected to reach a second crest in late April, most likely between April 15 and April 22.

The full suite of Advanced Hydrologic Prediction Service graphics and associate text products is now available at WEATHER.GOV. Click on the WATER tab and select your sight of interest.

We will now take your questions.