



Snowmelt Flood Potential

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Location

Throughout the Rock Island District

State(s)

IA,IL,MN,MO,WI

Congressional District(s)

IA-1, IA-2, IA-3, IA-4, IL-11, IL-13, IL-14, IL-15, IL-16, IL-17, IL-18, IL-2, IL-3, MN-1, MN-7, MO-6, WI-1, WI-2, WI-3, WI-5, WI-6

Status

Subject: Snowmelt Flood Potential **Purpose:** To provide information about snowmelt flood potential in the Rock Island District for the spring of 2016. **Current Information:** The National Weather Service (NWS), North Central River Forecast Center (NCRFC) - Chanhassen, Minnesota, flood potential outlook for spring 2016. The spring 2016 probabilistic flood potential outlook for the Upper Mississippi River Basin was issued by the NWS on February 18, 2016. This outlook covers the period from February 21 through May 21, 2016. The outlook provides a statistical assessment of flood potential due to snowmelt and normal spring thawing conditions. The actual extent of any flooding will depend on the timing and rate of snowmelt and the amount of rainfall that occurs during the outlook period. The flood probabilities contained in the outlook are based on current hydrologic conditions including snowpack, soil moisture, streamflow, etc. These conditions are then simulated through the next 90 days using a broad spectrum of spring weather conditions from the climate record of 1949 to 2012. The resultant flood potential probabilities are provided for mainstem and tributary river gage locations in the Upper Mississippi River basin and indicate the percent probability that minor, moderate, or major flooding could occur (see terminology below.) In addition, they provide information regarding the probability a given river stage will be equal or exceeded during the outlook period. snowmelt flood potential is generally near to above normal along tributary and mainstem rivers within the Rock Island District through late May. More specifically, the probabilities show an increased or above normal risk for flooding within portions of the Des Moines, Cedar, and Iowa River basins in Iowa, the Rock River Basin in Illinois, and the Mississippi River mainly downstream of Lock and Dam 16 into the St. Louis District. The spring snowmelt flood risk is currently near normal for the Illinois River basin, as well as the Maquoketa, Wapsipinicon and Skunk River basins in Iowa and the tributaries in northeastern Missouri. Soil moisture conditions are much higher than normal for this time of year across the entire Rock Island District, in large part from a significantly warm and wet November and December. Streamflows have also been above to much above normal this winter across the majority of the District, including across Iowa and northwest Illinois. Streamflows have returned closer to normal for the Illinois River basin and northeastern Missouri over the recent weeks. The current snowpack and associated liquid water content varies across the Rock Island District, from above normal in central and north central Iowa, to near or below normal across the rest of the District. Further to the north in the upper portions of the Mississippi River drainage area, the snowpack and liquid water content is below normal across central and northern portions of Minnesota and Wisconsin. The combination of these current hydrologic conditions points to a generally near to above normal spring snowmelt flood potential for the District. The next spring flood potential outlook will be issued by the NWS on Thursday, March 3, 2016.

Description

Flood Severity Terminology:

- Minor flooding: Minimal or no property damage, but possibly some public threat or inconvenience.
- Moderate flooding: Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations may be necessary.
- Major flooding: Extensive inundation of structures and both primary and secondary roads. Usually significant evacuations of people and/or transfer of property to higher elevations.
- *Note: The impacts and severity of flooding vary locally. For each National Weather Service river forecast location, flood stage and the associated severity categories are



Snowmelt Flood Potential

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

established in cooperation with public officials. The impact and severity of flooding at a given stage is not necessarily the same at all locations along a river reach due to varying channel and bank characteristics, or the presence of levees on portions of the reach.

The risk for snowmelt flooding is determined by several factors, including soil moisture, frost depth, snow water equivalent, base streamflows, and historical temperature and precipitation scenarios. A gradual or intermittent melt with below normal precipitation would decrease the flood risk. Above normal precipitation, rapid snowmelt, and ice jams would increase the flood risk. On average, the month with the greatest snowfall in the Upper Midwest is March. It is important to note that the flood outlook probabilities are based on current states of soil moisture, snow pack, and streamflow and anticipated operational hydrologic changes such as reservoir releases and canal diversions. These "outlooks" are provided for long-range (weeks to months) planning based on climatological patterns of precipitation and temperature. "Forecasts" are provided daily for short-term (days) projections based on ongoing changes to snowmelt, runoff, streamgage observations, and typically include 24-hr forecast precipitation. The uncertainty of forecasts tends to be less than the uncertainty of outlooks due to their shorter lead time and update schedule. Users of these products are encouraged to contact their nearest National Weather Service (NWS) Forecast Office for updates of meteorological conditions which can have significant impacts on flood planning and flood fighting activities.

Point of Contact: Chief of the Water Control Section, Hydraulics Branch, Engineering Division

Phone: (309)794-5849

Email: cemvr-ec-web@usace.army.mil

U.S. ARMY CORPS OF ENGINEERS - ROCK ISLAND DISTRICT

CLOCK TOWER BLDG. - P.O. BOX 2004 - ROCK ISLAND, IL 61204-2004

www.mvr.usace.army.mil