NWS FORM E-5 **U.S. DEPARTMENT OF COMMERCE**
NOAA, NATIONAL WEATHER SERVICE

HSA OFFICE:
Grand Rapids, MI

REPORT FOR (MONTH &YEAR):
July 2014

DATE:
September 15, 2014

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

TO: NATIONAL WEATHER SERVICE (W/OS31)
HYDROMETEOROLOGICAL INFO CENTER
1325 EAST-WEST HIGHWAY, RM 13468
SILVER SPRING, MD 20910

SIGNATURE:
Daniel K. Cobb, MIC
Mark Sekelsky

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (WSOM E-41).

☐ An **X** inside this box indicates that no significant flooding occurred within this Hydrologic Service Area.

Summary

The Pine River at Alma was the lone forecast point to reach flood stage in the Grand Rapids Hydrologic Service Area (HSA) during the month of July 2014. There were several rounds of heavy rain throughout the month. This resulted in some river and small stream flooding with urban and poor drainage areas impacted as well. Four Flash Flood warnings were issued early in July as a heavy rain event resulted in values topping 100 year events. The greatest impacts occurred over Montcalm and Gratiot counties where numerous road washouts were reported.

Flood Conditions

Friday, July 4th
At 3:15 PM EDT the AFD mentions the potential for heavy rain which could lead to flooding for Sunday into Monday

Sunday, July 6th
At 11:19 PM EDT a flash flood warning was issued for Gratiot, Ionia, Kent, and Montcalm counties for inch per hour rainfall rates and storm total values likely to top 3 inches in some locations

Monday, July 7th
At 12:27 AM EDT a flash flood warning was issued for Clinton county for inch per hour rainfall rates and storm total values expected to top 3 inches in some locations
At 12:35 AM EDT a flash flood warning was issued for Isabella, Mecosta and Newaygo counties for inch per hour rainfall rates and storm total values expected to top 4 inches in some locations
At 1:34 AM EDT the flash flood warning for Clinton county was continued
At 3:57 AM EDT the flash flood warning for Kent county was cancelled, while Montcalm, Ionia and Gratiot counties were continued for the 4 to 6 inches of rain that fell
At 4:06 AM EDT the flash flood warning for Newaygo county is cancelled but continued for Mecosta and Isabella counties for storm total rainfall amounts of 4 to 6 inches
At 5:13 AM EDT a flash flood warning was issued for Barry, Eaton and Ingham counties for 2 to 3 inch per hour rainfall rates and storm total values expected to top 3 inches in

some locations
At 9:23 AM EDT a flood warning is issued for the Pine River near Alma
At 10:11 AM EDT the flash flood warning for Ingham, Eaton, and Barry counties was cancelled
At 10:12 AM EDT the flash flood warning for Clinton county was cancelled
At 10:13 AM EDT the flash flood warning for Mecosta and Isabella counties was cancelled
At 11:01 AM EDT flood warning issued for Gratiot, Ionia and Montcalm counties replacing the flash flood warning
At 11:04 AM EDT a statement cancelling the flash flood warning for Montcalm, Ionia, and Gratiot counties was issued.
At 9:21 PM EDT a flood statement was issued continuing the flood warning for the Pine River affecting Alma

Tuesday, July 8th

At 10:42 AM EDT the flood warning for Gratiot, Ionia and Montcalm counties was cancelled
At 11:40 AM EDT the flood warning for the Pine River affecting Alma was downgraded to an advisory

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The following rivers exceeded bankfull during the month of July 2014:

- Maple River near Maple Rapids, Michigan(13 days above bankfull)
- Grand River near Ionia, Michigan (9 days above bankfull)
- Pine River near Alma, Michigan (3 days above bankfull)
- Sycamore Creek near Holt, Michigan (1 day above bankfull)
- Flat River at Smyrna, Michigan (3 days above bankfull)

Flood Stage Report

One forecast points exceeded flood stage in our HSA during the month of July 2014. See NWS Form E-3 "Flood Stage Report" for more details.

River Conditions

The end of the month percentage of normal flow for selected rivers is listed below:

Location	River	% of Normal
Scottville	Pere Marquette	114
Whitehall	White	137
Evart	Muskegon	129
Mt. Pleasant	Chippewa	147
Lansing	Grand	136
Grand Rapids	Grand	158

East Lansing	Red Cedar	186
Hastings	Thornapple	118
Battle Creek	Battle Creek	182
Battle Creek	Kalamazoo	109

General Hydrologic Information

July 2014 was a cooler and wetter than normal month across the region. The greatest precipitation departures were over the Chippewa and Pine river basins.

July precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 4.42, 4.86, and 3.73 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 0.64 of an inch above normal at Grand Rapids, 2.02 inches above normal at Lansing, and 1.36 of an inch above normal at Muskegon, Michigan. Percent of mean precipitation for July 2014 is shown in Figure 2. Yearly precipitation totals were 1.71 of an inch above normal for Grand Rapids, 4.61 inches above normal for Lansing, and 6.86 of an inch above normal for Muskegon, Michigan.

Temperatures for the month of July were much cooler than normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of -4.1, -4.4 and -4.9 degrees Fahrenheit, respectively.

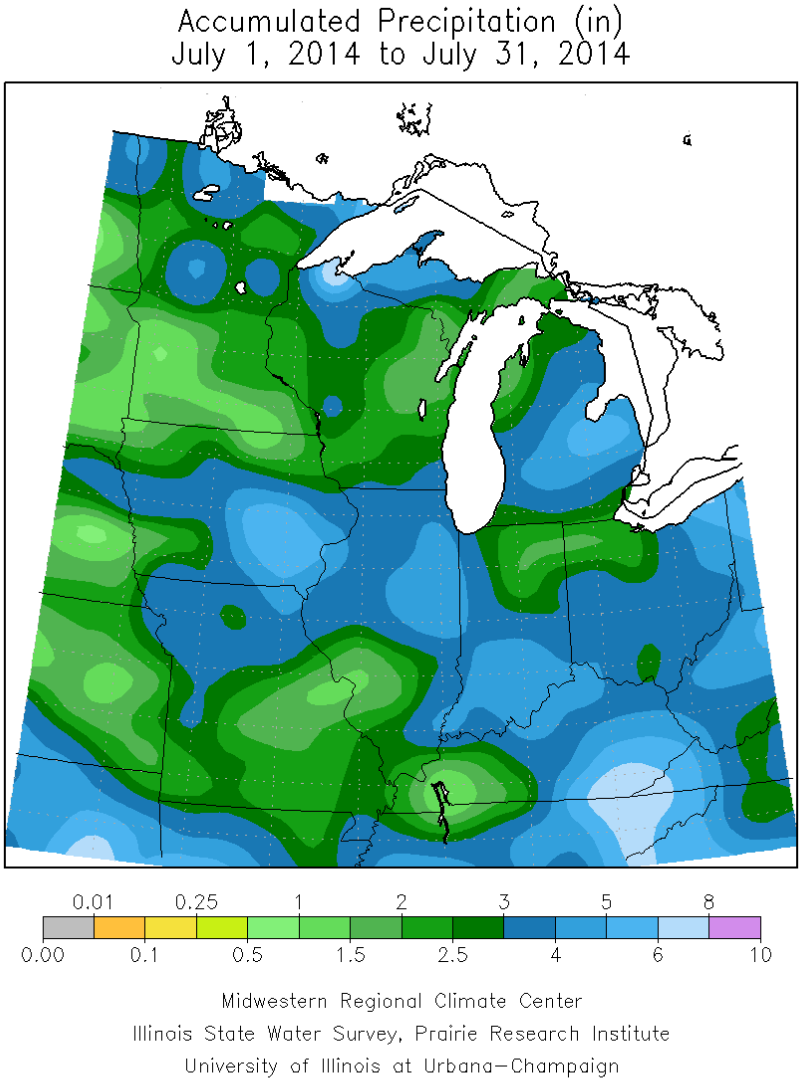

Figure 1. July Monthly Precipitation Totals

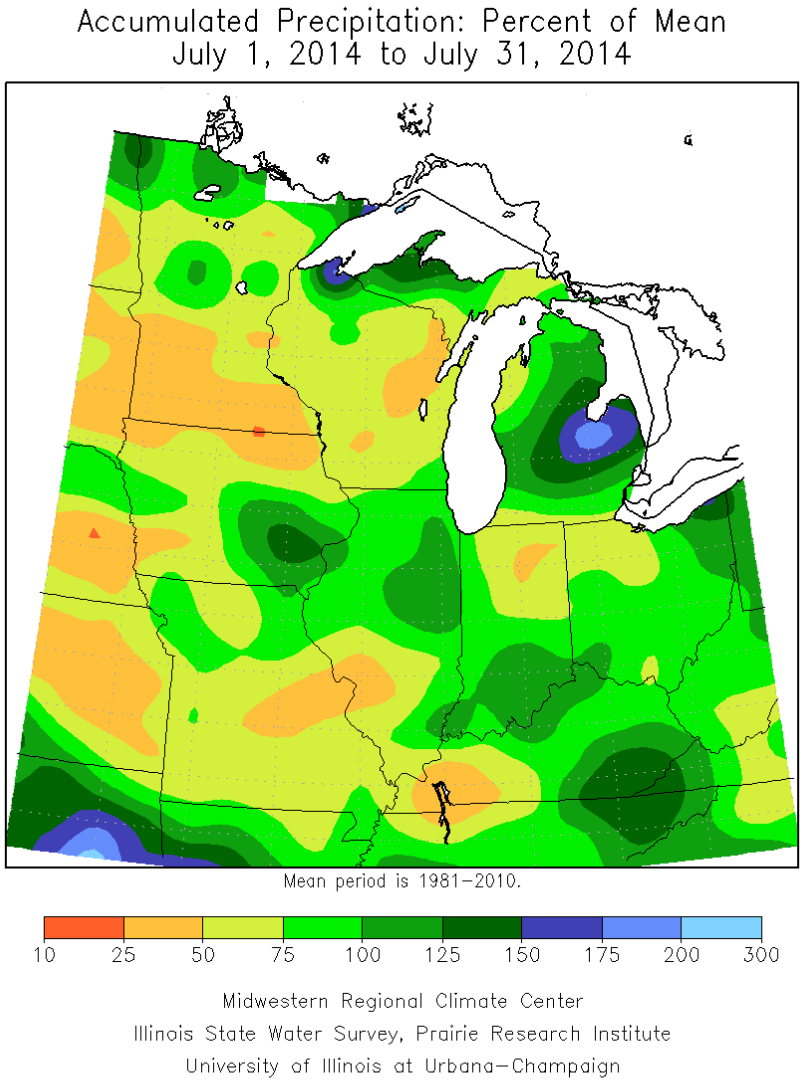

Figure 2. July Percent of Mean of Accumulated Precipitation

Hydrologic Products issued this month:

1 Areal Flood Warnings(ARBFLWGRR)
16 Areal Flood Statements (ARBFLSGRR)
4 Flash Flood WarningS(ARBFFWGRR)
8 Flash Flood Statements(ARBFFSGRR)
1 River Flood Warnings(ARBFLWGRR)
1 River Flood Statements(ARBFLSGRR)
27 River Flood Advisories (ARBFLSGRR)
9 Hydrologic Statements (ARBRVSGRR)

1 Hydrologic Outlook (ARBESFGRR)
31 Hydrologic Summaries (ARBRVAGRR)
31 Daily River and Lake Summary (ARBRVDGRR)