

## 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

DATE:  
October 4, 2013

SIGNATURE:  
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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).

**X**

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

### Summary

No river flooding occurred during the month of September 2013. Localized urban flooding occurred in Grandville, Michigan, on Monday, September 9<sup>th</sup>. The city of Grandville reported flooded basements and streets, and cars stranded in water.

### Flood Conditions

#### Monday, September 9<sup>th</sup>

At 5:16 AM EDT an areal flood advisory was issued for Calhoun and Kalamazoo Counties until 11:00 AM EDT. Thunderstorms with very heavy rain were moving through the advisory area.

At 5:30 AM EDT an areal flood advisory was issued for Kent, Muskegon, and Ottawa Counties until 11:30 AM EDT. Thunderstorms with very heavy rain were moving through the advisory area. Radar estimated rainfall rates of over an inch per hour were occurring over highly urbanized areas.

At 7:47 AM EDT an areal flood advisory was issued for Barry County until Noon EDT. Thunderstorms with very heavy rain were moving through the advisory area. Radar estimated rainfall rates of over an inch per hour over the advisory area.

At 7:52 AM EDT the areal flood advisory for Calhoun and Kalamazoo Counties continued until 11:00 AM EDT. Additional thunderstorms with very heavy rainfall were moving toward the advisory area.

At 7:55 AM EDT the areal flood advisory for Kent, Muskegon and Ottawa Counties continued until 11:30 AM EDT. Thunderstorms with very heavy rain continued to move over urban areas throughout the advisory area. Radar estimated rainfall of over an inch per hour for the past several hours. The advisory mentioned the possibility of very heavy localized rainfall exceeding 3 inches near Grandville, Michigan.

At 9:07 AM EDT the flood advisory for Barry County continued until Noon EDT.

Thunderstorms with very heavy rain were continuing to move through the advisory area.

At 9:15 AM EDT the flood advisory for Kent, Muskegon and Ottawa Counties continued until 11:30 AM EDT. Thunderstorms with very heavy rain continued to move over urban areas throughout the advisory area. A weather service employee reported over 5 inches of rain during a three hour period and flooding of roads in Grandville, Michigan.

At 9:38 AM EDT an areal flood advisory was issued for Eaton and Ionia Counties until

3:30 PM EDT. Thunderstorms with very heavy rain were beginning to move into the advisory area.

At 9:58 AM EDT an areal flood advisory was issued for Jackson County until 4:00 PM EDT. Thunderstorms with very heavy rain were beginning to move into the advisory area.

At 10:13 AM EDT the areal flood advisory continued for Kent and Ottawa Counties and was cancelled for Muskegon County. No significant flooding was reported for Muskegon County.

At 10:37 AM EDT the areal flood advisory continued for Calhoun County and was cancelled for Kalamazoo County. No significant flooding was reported in Kalamazoo County.

At 11:08 AM EDT the flood advisory for Calhoun County was allowed to expire. No significant flooding was reported in Calhoun County.

At 11:34 AM EDT the flood advisory for Kent and Ottawa Counties was allowed to expire. No significant flooding was reported in Ottawa County and the street flooding in Kent County had receded.

At 11:53 AM EDT the flood advisory for Barry County was allowed to expire at Noon EDT. No significant flooding was reported.

At 11:58 AM EDT the flood advisory for Ionia and Eaton Counties was cancelled. No significant flood was reported.

At 12:51 PM EDT the flood advisory for Jackson County was cancelled. No significant flooding was reported.

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No rivers exceeded bankfull during the month of September 2013.

### **Flood Stage Report**

No rivers exceeded flood stage during the month of September.

### **River Conditions**

River levels across the HSA were near to below normal at the end of the month. The end of the month percentage of normal flow for selected rivers is listed below:

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	99
Whitehall	White	98
Ewart	Muskegon	88
Mt. Pleasant	Chippewa	100
Lansing	Grand	112
Grand Rapids	Grand	70
East Lansing	Red Cedar	88
Hastings	Thornapple	94
Battle Creek	Battle Creek	120
Battle Creek	Kalamazoo	100

### **General Hydrologic Information**

September 2013 had temperatures near to above normal, and precipitation significantly below normal for Muskegon, Grand Rapids, and Lansing, Michigan. September precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 1.25, 0.98, and 1.95 inches, respectively (Figure 1). Precipitation totals for the month at these three sites were 3.03 inches below normal at Grand Rapids, 2.52 inches below normal at Lansing, and 1.94 inches below normal at Muskegon, Michigan (Figure 2). Yearly precipitation totals were 4.57 inches above normal for Grand Rapids, 9.31 inches above normal for Lansing, and 8.73 inches above normal for Muskegon, Michigan.

Temperatures for the month of September were near to above normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of 0.9, -0.3 and 1.6 degrees Fahrenheit, respectively.

Figure 1. September Monthly Precipitation Totals

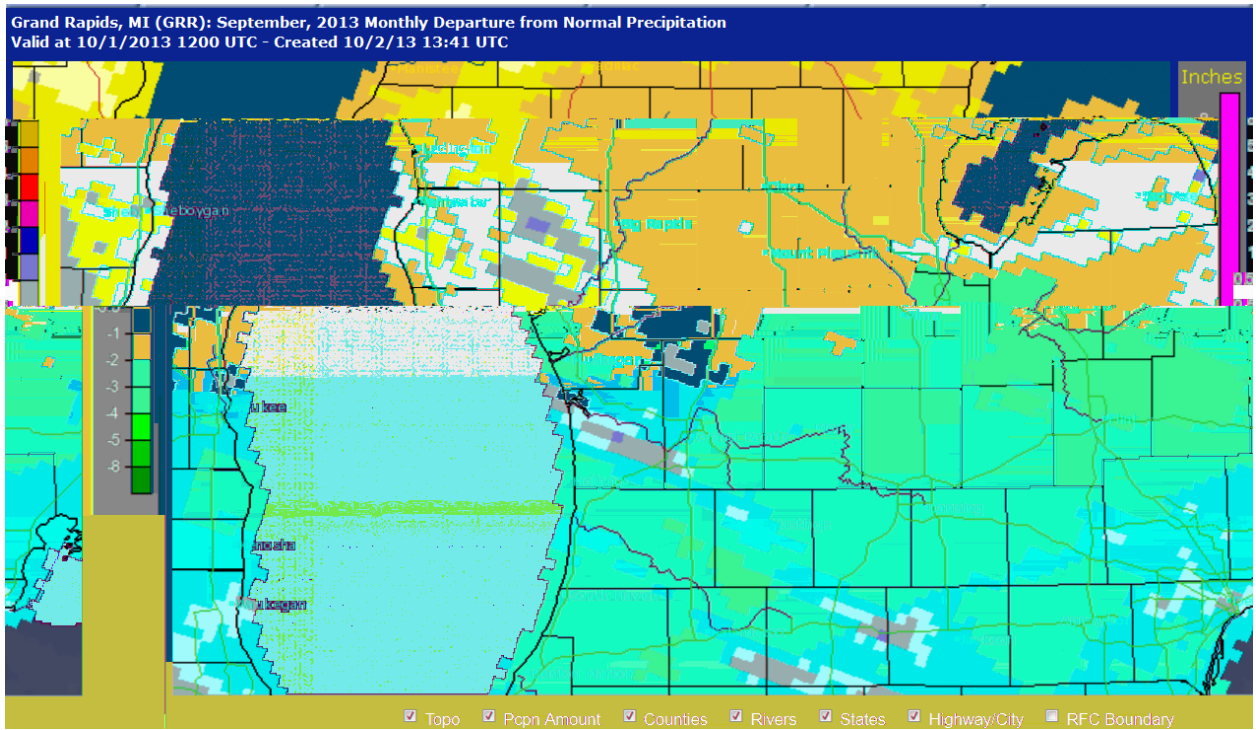


Figure 2. September Monthly Departure from Normal Precipitation Totals

**Hydrologic Products issued this month:**

- 16 Areal Flood Advisories (ABRFLSGRR)
- 1 Hydrologic Outlook (ARBESFGRR)
- 30 Hydrologic Summaries (ARBRVAGRR)
- 30 Daily River and Lake Summaries (ARBRVDGRR)