

**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:  
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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).

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

**Summary**

Flooding of low lying areas, basements, and crawl spaces of homes adjacent to the rivers occurred during the minor flooding in March. No significant impacts to life or property were reported.

**Flood Conditions**

The area forecast discussion and the hazardous weather outlooks issued near the end of February highlighted the potential for flooding in early March.

On Sunday, March 1<sup>st</sup>, a river flood advisory was issued for the Grand River near Comstock Park and the Maple River at Maple Rapids, Michigan.

On Friday, March 6<sup>th</sup>, a flood watch was issued at 3:12 PM EST, with the headline... "Heavy rain over the weekend". Rain and thunderstorms were forecast to move along a stationary front across Southern Lower Michigan over the weekend. Up to three inches of Rain was possible across areas from Kalamazoo to Jackson. The watch highlighted that minor flooding was possible starting Saturday afternoon into Sunday evening.

On Saturday, March 7<sup>th</sup>, a river flood warning was issued at 9:42 PM EST, for the White River near Whitehall and the Chippewa River near Mt. Pleasant, Michigan.

On Sunday, March 8<sup>th</sup>, a river flood warning was issued at 11:55 AM EDT, for the Grand River near Comstock Park and the Portage River near Vicksburg, Michigan.

On Monday, March 9<sup>th</sup>, a river flood warning was issued at 10:26 AM EDT, for the St. Joseph River at Burlington, Michigan. A river flood warning was issued at 11:42 AM EDT, for the Red Cedar River at East Lansing, Michigan.

A river flood advisory was issued at 12:01 PM EDT for the following rivers:

- Grand River at Lansing, Michigan
- Grand River at Robinson Township, Michigan
- Thornapple River above Hastings, Michigan

Another flood watch was issued at 4:13 PM EDT, with the headline... “More heavy rain heading for Southern Lower Michigan”. A low pressure system was forecast to move over the Great Lakes Tuesday night. This system was forecast to bring two waves of rain with it. The first wave of rain was forecast to come late tonight into Tuesday morning, while the second wave was expected Tuesday evening. The forecast called for an inch of rain possible by late Tuesday night across the interstate 94 corridor.

River flood advisories were issued at 10:30 PM EDT for the following rivers:

- Grand River at Jackson, Michigan
- Maple River at Maple Rapids, Michigan
- Pere Marquette River near Scottville, Michigan
- White River above Whitehall, Michigan
- Muskegon River near Croton, Michigan

On Tuesday, March 10<sup>th</sup>, a river flood warning was issued at 10:30 AM EDT, for the Kalamazoo River near Comstock, Michigan. A river flood warning was issued at 11:37 AM EDT, for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Lansing, Michigan (replaces advisory)
- Grand River at Robinson Township, Michigan (replaces advisory)
- Thornapple River above Hastings, Michigan (replaces advisory)

A river flood advisory was issued at 12:16 PM EDT, for the following rivers:

- Grand River at Ionia, Michigan
- Sycamore Creek at Holt, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan

On Wednesday, March 11<sup>th</sup>, a river flood warning was issued at 10:14 PM EDT, for the Maple River at Maple Rapids, Michigan (replaces advisory).

On Saturday, March 14<sup>th</sup>, a river flood warning was issued at 9:12 AM EDT, for the St. Joseph River at Burlington, Michigan.

On Friday, March 20<sup>th</sup>, the last river flood warning was cancelled at 11:50 AM EDT, when the Portage River near Vicksburg, Michigan, fell back below flood stage.

### **Flood Stage Report**

Please refer to NWS Form E-3 “Flood Stage Report”.

## **River Conditions**

River levels by the end of March were near to slightly above normal for our HSA. By the end of March all rivers were ice free. 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 | 100                |
| Whitehall       | White          | 100                |
| Evert           | Muskegon       | 117                |
| Mt. Pleasant    | Chippewa       | 100                |
| Lansing         | Grand          | 110                |
| Grand Rapids    | Grand          | 100                |
| East Lansing    | Red Cedar      | 100                |
| Hastings        | Thornapple     | 98                 |
| Battle Creek    | Battle Creek   | 101                |
| Comstock        | Kalamazoo      | 117                |

## **General Hydrologic Information**

March 2009 will be remembered for above normal average temperatures, below normal snowfall, and near to slightly above normal precipitation.

March precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 2.66, 3.08, and 3.01 inches, respectively. Precipitation totals for the month at these three sites were 0.07 of an inch above normal at Grand Rapids, 0.75 of an inch above normal at Lansing, and 0.65 of an inch above normal at Muskegon, Michigan. Yearly precipitation totals were 1.55 inches above normal for Grand Rapids, 1.07 inches above normal for Lansing, and 3.28 inches above normal for Muskegon, Michigan. Snowfall totals were significantly below normal for the month at Grand Rapids, Lansing, and Muskegon with 0.4 (-8.6), 1.0 (-7.7), and 0.4 (-10.7) of an inch, respectively. Snow depth during the entire month of March was zero at Grand Rapids, Lansing, and Muskegon. The frost depths across the HSA were typically less than an inch by the end of the month.

The daily mean temperature for the month was warmer than average across southwest Lower Michigan. Temperatures for the month of March were above normal at Grand Rapids, Lansing, and Muskegon, with average monthly departures of +3.0, +2.9 and +1.9 degrees Fahrenheit, respectively.

## **Hydrologic Products issued this month:**

- 14 Areal Flood Watches (ARBFFAGRR)
- 8 River Flood Warnings (ARBFLWGRR)
- 26 River Flood Statements (ARBFLSGRR)
- 20 River Flood Advisories (ARBFLSGRR)
- 57 Hydrologic Statements (ARBRVSGRR)
- 31 Hydrologic Summaries (ARBRVAGRR)
- 3 Hydrologic Outlooks (ARBESFGRR)