

**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 L. Walton, Service Hydrologist

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**

Flash flooding and river flooding occurred in our Hydrologic Service Area (HSA) during the month of July. The most significant flash flooding occurred on July 28<sup>th</sup> in the city of Lansing, Michigan, prompting the city mayor to declare a local state of emergency. Preliminary flood damage estimates by Lansing city officials were \$2.4 million. Lansing first responders had to rescue nine people by boat during the early hours of July 28<sup>th</sup> from flash flooding, when rapidly rising water flooded their homes. Minor river flooding occurred on Sycamore Creek, Grand River, and Thornapple River during the month.

**Flood Conditions**

Friday, July 22<sup>nd</sup>

At 10:41 AM EDT a flood watch was issued for Allegan, Barry, Eaton, Ingham, Van Buren, Kalamazoo, Calhoun, and Jackson Counties effective until 8 PM EDT.

Thunderstorms with very heavy rain were forecast to move into the watch area later that day.

At 3:12 PM EDT the flood watch for the entire area was cancelled when the heavy rain shifted further south out of our HSA.

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Wednesday, July 27<sup>th</sup>

At 8:35 PM EDT a flood advisory was issued for Clinton, Gratiot, Ionia, Kent, Montcalm, Muskegon, and Ottawa Counties effective until 8:30 AM EDT Thursday. Thunderstorms with heavy rain were moving across the advisory area.

At 8:46 PM EDT a flood watch for flash flooding was issued for Muskegon, Montcalm, Gratiot, Ottawa, Kent, Ionia, Clinton, Allegan, Barry, Eaton, Ingham, Van Buren, Kalamazoo, Calhoun, and Jackson counties effective through Thursday afternoon.

Thunderstorms with very heavy rain were forecast to become more widespread overnight.

At 10:09 PM EDT a flood advisory was issued for Eaton, Ingham, and Jackson Counties effective until 10:00 AM EDT Thursday.

At 10:35 PM EDT a flash flood warning was issued for Kent County effective until 10:30 AM EDT Thursday. Police dispatchers reported numerous instances of cars stuck in water

on flooded streets throughout Grand Rapids, Michigan. Slow moving thunderstorms with very heavy rain were moving across the warned area.

At 10:51 PM EDT flash flood warnings were issued for Eaton, Ingham, Ionia, and Jackson Counties effective until 11:00 AM EDT Thursday. Slow moving thunderstorms with very heavy rain were moving across the warned area.

At 11:03 PM EDT the flood advisory for Kent and Ionia Counties was cancelled after being upgraded to a flash flood warning. The flood advisory for Ottawa, Muskegon, Montcalm, Gratiot, and Clinton Counties remained in effect until 8:30 AM EDT Thursday.

At 11:05 PM EDT the flood advisory for Jackson, Ingham, and Eaton Counties was cancelled after being upgraded to a flash flood warning.

At 11:47 PM a river flood warning was issued for the Rogue River near Rockford, Michigan. River flood forecast called for the river to rise above flood stage early Thursday morning and crest near 8.2 feet Thursday morning.

At 11:57 PM EDT a flash flood statement was issued indicating the flash flood warning remained in effect for Kent County until 10:30 AM EDT Thursday. Local officials reported numerous instances of cars stuck in water on flooded streets throughout Grand Rapids, Michigan, and surrounding Kent County. Rainfall totals over the warned area ranged from one to five inches, with more thunderstorms on the way.

#### Thursday, July 28<sup>th</sup>

At 12:15 AM EDT a flash flood statement was issued indicating the flash flood warning for Eaton, Ingham, Ionia, and Jackson Counties remained in effect until 11:00 AM EDT Thursday. Radar estimated rainfall amounts up to 4.5 inches in Ionia and Eaton Counties and local emergency services reported numerous cars stalled out on flooded roads in Delta Township, located in Eaton County.

At 12:35 AM EDT a flash flood warning was issued for Barry County effective until 12:30 PM EDT. Slow moving thunderstorms with very heavy rain were moving across the warned area.

At 12:51 AM EDT a flash flood statement was issued indicating the flash flood warning for Eaton, Ingham, Ionia, and Jackson Counties remained in effect until 11:00 AM EDT Thursday. At 12:49 AM EDT local law enforcement officials reported that flash flooding was occurring in the Southwest portion of the City of Lansing, Michigan. Fire officials rescued nine people from homes using boats and local law enforcement officials reported numerous roads flooded with stalled cars in Lansing, Michigan (Ingham County). During the peak of the event, close to a dozen roads were closed in Ingham County due to high water over roads. Reports of basement flooding and collapsing basement walls, along with 3 to 4 feet of water over Burchfield Drive, occurred in Lansing, Michigan.

At 1:05 AM EDT a flash flood statement was issued indicating the flash flood warning for Eaton, Ingham, Ionia, and Jackson Counties remained in effect until 11:00 AM EDT. Local officials in Lansing, Michigan, (Ingham County) reported manhole covers being blown off with water rushing out and Sycamore Creek out of its banks. Jackson County Road Commission reported water over several roads in Jackson County.

At 1:54 AM EDT flash flood warnings were issued for Gratiot, Montcalm, Muskegon, Northern Kent, and Southern Newaygo Counties effective until 2:00 PM EDT. Slow moving thunderstorms with very heavy rain were moving across the warned area.

At 2:02 AM EDT the flood advisory for Muskegon, Montcalm, and Gratiot Counties was cancelled after being upgraded to a flash flood warning. The flood advisory remained in effect for Ottawa and Clinton Counties until 8:30 AM EDT.

At 4:00 AM EDT the flood watch for flash flooding was extended through Friday afternoon. Slow moving thunderstorms with very heavy rain were forecast to move across the watch area overnight and into Friday morning.

At 4:16 AM EDT a river flood advisory was issued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Dimondale, Michigan
- Grand River at Lansing, Michigan
- Grand River at Portland, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan
- Grand River near Comstock Park, Michigan
- Grand River at Grand Rapids, Michigan
- Sycamore Creek near Holt, Michigan
- Red Cedar River at East Lansing, Michigan
- Looking Glass River near Eagle, Michigan
- Thornapple River near Hastings, Michigan
- Rogue River near Rockford, Michigan

At 4:19 AM EDT the river flood warning for the Rogue River near Rockford, Michigan, was cancelled when the river crested below flood stage and was downgraded to a river flood advisory.

At 4:36 AM EDT a flash flood statement was issued indicating the flash flood warning remained in effect for Kent County until 10:30 AM EDT Thursday. Heaviest rain was reported over the Rockford area, with over 5 inches of rain during the last 24 hours. Thunderstorms with very heavy rain continued over the warned area.

At 4:46 AM EDT a flash flood statement was issued indicating the flash flood warning for Eaton, Ingham, Ionia, and Jackson Counties remained in effect until 11:00 AM EDT. Local law enforcement officials reported flooding in Dimondale, Michigan, flooded roadways with stalled cars in Delta Township and Charlotte, Michigan, in Eaton County, and several homes with collapsed basements in the City of Lansing, Michigan.

At 4:51 AM EDT a flash flood statement was issued indicating the flash flood warning for Barry County remained in effect until 12:30 PM EDT. Radar indicated that up to 5 inches of rainfall had fallen across the county, north of a line from Middleville to Nashville, Michigan.

At 5:08 AM EDT a flash flood statement was issued indicating the flash flood warning for Gratiot, Montcalm, Muskegon, Northern Kent, and Southern Newaygo Counties remained in effect until 2:00 PM EDT. Gratiot and Montcalm County Road Commissions reported numerous road washouts. Radar indicated 3 to 5 inches of rainfall had fallen over the past three hours over the warned area.

At 8:58 AM EDT the flash flood warning for Kent County was cancelled.

At 9:31 AM EDT the flash flood warning for Eaton, Ingham, Ionia, and Jackson Counties was cancelled.

At 9:42 AM EDT the flash flood warning for Gratiot, Montcalm, Muskegon, Northern Kent, and Southern Newaygo Counties was cancelled.

At 9:47 AM EDT the flash flood warning for Barry County was cancelled. The Barry County Road Commission reported (after the event) they had numerous road washouts, and that several roads were temporarily closed during the early morning hours due to water over the road.

At 11:05 AM EDT the river flood advisory continued for the following rivers:

- Grand River at Ionia, Michigan

- Thornapple River near Hastings, Michigan
- Sycamore Creek near Holt, Michigan

At 11:23 AM EDT the river flood advisory was cancelled for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Dimondale, Michigan
- Grand River at Lansing, Michigan
- Grand River at Portland, Michigan
- Grand River at Lowell, Michigan
- Grand River near Comstock Park, Michigan
- Grand River at Grand Rapids, Michigan
- Red Cedar River at East Lansing, Michigan
- Looking Glass River near Eagle, Michigan
- Rogue River near Rockford, Michigan

At 11:50 AM EDT the flood watch for flash flooding remained in effect through Friday afternoon. More thunderstorms with heavy rain are forecast to move through the area Thursday night.

At 5:03 PM EDT the flood watch for flash flooding remained in effect through Friday afternoon. Thunderstorms with heavy rain were forecast to move through the watch area overnight.

At 8:54 PM EDT a river flood advisory was issued for the following rivers:

- Grand River at Lowell, Michigan
- Red Cedar River near Williamston, Michigan

and continued for:

- Grand River at Ionia, Michigan
- Thornapple River near Hastings, Michigan.

At 8:58 PM EDT a river flood advisory was issued for the Portage River near Vicksburg, Michigan.

At 9:40 PM EDT a river flood warning was issued for Sycamore Creek near Holt, Michigan. The river was already above flood stage and the flood forecast called for the river to crest near 8.2 feet Friday morning.

At 9:45 PM EDT the river flood advisory was cancelled for Sycamore Creek near Holt, Michigan, and upgraded to a river flood warning.

### Friday, July 29<sup>th</sup>

At 12:44 AM EDT flash flood warnings were issued for Allegan, Barry, Eaton, and Ingham Counties effective until 9:30 EDT. Slow moving thunderstorms with very heavy rain were moving across the warned area.

At 2:38 AM EDT a flash flood statement was issued indicating the flash flood warning for Allegan, Barry, Eaton, and Ingham Counties remained in effect until 9:30 EDT. In Lansing, Michigan, Jolly Road between Contec Drive and Aurelius Road, and the intersection of Martin Luther King Jr. and Edgewood Boulevards, were closed due to flooding. In Eaton County, Interstate 69 was temporarily closed between Vermontville Highway and Windsor Road due to water over the road. Several automated weather stations reported 2 to 3 inches of rainfall over the area during a three hour period.

At 3:51 AM EDT a flood advisory was issued for Calhoun, Jackson, Kalamazoo, and Van Buren Counties effective until 4:00 PM EDT.

At 4:18 AM EDT the flood watch for flash flooding was cancelled because the flood threat was well covered by current flash flood warnings and flood advisories.

At 8:39 AM EDT the flash flood warning for Allegan, Barry, Eaton, and Ingham Counties

was cancelled.

At 8:41 AM EDT a river flood advisory was issued for the following rivers:

- Grand River at Lansing, Michigan
- Looking Glass River near Eagle, Michigan

At 9:52 AM EDT river flood warnings were issued for the following rivers:

- Grand River at Lansing, Michigan
- Thornapple River near Hastings, Michigan
- Sycamore Creek near Holt, Michigan

The river flood warning was re-issued for Sycamore Creek near Holt, Michigan, when the updated forecasted crest resulted in the flood category being increased from minor to moderate flooding. The river flood forecast called for the Grand River at Lansing, Michigan, to rise above flood stage that afternoon and crest near 11.3 feet Friday evening. The river flood forecast called for the Thornapple River near Hastings to rise above flood stage Saturday morning and crest near 7.5 feet Sunday morning. The updated river flood forecast for Sycamore Creek called for the creek to be near its crest of 9.0 feet and then begin to fall in the afternoon.

At 9:56 AM EDT the river flood advisory was cancelled because it was upgraded to a river flood warning for the following rivers:

- Grand River at Lansing, Michigan
- Thornapple River near Hastings, Michigan

At 10:02 AM EDT the river flood advisory for the Grand River at Ionia, Michigan was updated.

At 10:34 AM EDT river flood advisories were issued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River near Comstock Park, Michigan
- Grand River at Grand Rapids, Michigan
- Red Cedar River at East Lansing, Michigan
- Thornapple River near Caledonia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River at Comstock, Michigan
- Kalamazoo River near New Richmond, Michigan

and continued for the following rivers:

- Looking Glass River near Eagle, Michigan
- Grand River at Lowell, Michigan

At 10:42 AM EDT river flood advisories continued for the following rivers:

- Portage River near Rockford, Michigan
- Red Cedar River near Williamston, Michigan

At 11:25 AM EDT the flood advisory continued for Calhoun, Jackson, Kalamazoo, and Van Buren Counties effective until 4:00 PM EDT. Minor street flooding was reported in Kalamazoo, Michigan.

At 3:52 PM EDT the flood advisory was allowed to expire at 4:00 PM EDT for Calhoun, Jackson, Kalamazoo, and Van Buren Counties.

At 10:20 PM EDT a river flood advisory was issued for the Grand River at Lansing, Michigan.

At 10:26 PM EDT the river flood warning for the Grand River at Lansing, Michigan, was cancelled when the river crested just below flood stage and was downgraded to a river flood advisory. River flood warnings continued for the following rivers:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan.

Sycamore Creek crested Friday morning near 9 feet and the updated river flood forecast called for the river to begin a slow fall. The updated river flood forecast for the Thornapple River near Hastings, Michigan, called for the river to rise above flood stage Saturday afternoon and crest near 7.2 feet Sunday morning.

At 10:37 PM EDT the river flood advisory was issued for the Grand River at Portland, Michigan, cancelled for the Looking Glass River near Eagle, Michigan, and continued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan
- Grand River near Comstock Park, Michigan
- Grand River at Grand Rapids, Michigan
- Red Cedar River at East Lansing, Michigan
- Red Cedar River near Williamston, Michigan
- Thornapple River near Caledonia, Michigan

At 10:45 PM EDT the river flood advisory was cancelled for the following rivers:

- Kalamazoo River at Marshall, Michigan
- Kalamazoo River at Comstock, Michigan

and river flood advisories were continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan.

#### Saturday, July 30<sup>th</sup>

At 9:25 AM EDT a river flood warning was issued for the Grand River at Lansing, Michigan. The river had crested just below flood stage overnight but rose back up above flood stage Saturday morning. The river was already above flood stage and the updated river flood forecast called for the river to crest near 11.2 feet Saturday afternoon.

At 9:30 AM EDT the river flood advisory for the Grand River at Lansing, Michigan was cancelled because it was upgraded to a river flood warning.

At 9:50 AM EDT the river flood warning continued for the following rivers:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan
- Grand River at Lansing, Michigan

The updated river flood forecast for Sycamore Creek near Holt, Michigan, called for the river to continue to fall and fall below flood stage tonight. The updated river flood forecast for the Thornapple River near Hastings, Michigan, called for the river to rise above flood stage Saturday night and crest near 7.2 feet Sunday morning. The updated river flood forecast for the Grand River at Lansing, Michigan, called for the river to continue rising and crest near 11.2 feet Saturday afternoon.

At 9:55 AM EDT the river flood advisory continued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan
- Grand River near Comstock Park, Michigan
- Grand River at Grand Rapids, Michigan
- Red Cedar River at East Lansing, Michigan
- Red Cedar River near Williamston, Michigan
- Thornapple River near Caledonia, Michigan
- Kalamazoo River near New Richmond, Michigan

- Portage River near Vicksburg, Michigan

At 10:14 AM EDT the river flood advisory was cancelled for the Grand River at Portland, Michigan.

At 11:01 PM EDT a river flood advisory was issued for the Grand River at Lansing, Michigan and river flood advisories were cancelled for the following rivers:

- Grand River near Comstock Park, Michigan
- Kalamazoo River near New Richmond, Michigan
- Red Cedar River near Williamston, Michigan
- Grand River at Grand Rapids, Michigan

and continued for the following rivers:

- Grand River at Lowell, Michigan
- Red Cedar River at East Lansing, Michigan
- Thornapple River near Caledonia, Michigan
- Portage River near Vicksburg, Michigan
- Grand River at Eaton Rapids, Michigan
- Grand River at Ionia, Michigan

At 11:05 PM EDT the river flood warning was cancelled for the Grand River at Lansing, Michigan when it fell below flood stage and was replaced with a river flood advisory.

River flood warnings continued for the following rivers:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan

The updated river flood forecast for Sycamore Creek near Holt, Michigan, called for the river to continue to fall and fall below flood stage Sunday morning. The updated river flood forecast for the Thornapple River near Hastings, Michigan, called for the river to continue to rise and crest near 7.9 feet on Sunday.

#### Sunday, July 31<sup>st</sup>

At 10:57 AM EDT river flood warnings continued for the following rivers:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan

The updated river flood forecast for Sycamore Creek near Holt, Michigan, called for the river to continue to fall and fall below flood stage Sunday evening. The updated river flood forecast for the Thornapple River near Hastings, Michigan, called for the river to continue to rise and crest near 7.9 feet Sunday evening.

At 11:48 AM EDT the river flood advisory was cancelled for the Portage River near Vicksburg, Michigan and continued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Lansing, Michigan
- Thornapple River near Caledonia, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan
- Red Cedar River at East Lansing, Michigan

At 9:53 PM EDT river flood warnings continued for the following rivers:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan

The updated river flood forecast for Sycamore Creek near Holt, Michigan, called for the river to continue to fall and fall below flood stage Sunday evening. The Thornapple River near Hastings, Michigan, crested near 8 feet and the updated river flood forecast called

for the river to continue to fall and fall below flood stage Wednesday morning.

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At 10:17 PM EDT the river flood advisory was cancelled for the Red Cedar River at East Lansing, Michigan and continued for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Grand River at Lansing, Michigan
- Thornapple River near Caledonia, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan

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The following river flood warnings carried over into August:

- Sycamore Creek near Holt, Michigan
- Thornapple River near Hastings, Michigan

The following river flood advisories carried over into August:

- Grand River at Eaton Rapids, Michigan
- Grand River at Lansing, Michigan
- Thornapple River near Caledonia, Michigan
- Grand River at Ionia, Michigan
- Grand River at Lowell, Michigan

The following rivers exceeded bankfull during the month of July:

- Sycamore Creek near Holt, Michigan (11 days above bankfull)
- Looking Glass River near Eagle, Michigan (1 day above bankfull)
- Thornapple River near Hastings, Michigan (3 days above bankfull)
- Thornapple River near Caledonia, Michigan (3 days above bankfull)
- Rogue River near Rockford, Michigan (1 day above bankfull)
- Red Cedar River near East Lansing, Michigan (2 days above bankfull)
- Grand River at Ionia, Michigan (3 days above bankfull)
- Grand River near Lowell, Michigan (1 day above bankfull)
- Grand River near Eaton Rapids, Michigan (1 day above bankfull)
- Grand River near Lansing, Michigan (3 days above bankfull)
- Grand River near Portland, Michigan (1 day above bankfull)
- Grand River near Jackson, Michigan (1 day above bankfull)
- Portage River near Vicksburg, Michigan (1 day above bankfull)

### **Flood Stage Report**

Three rivers in Southwest Lower Michigan exceeded minor flood stage during the month of July.

Sycamore Creek near Holt, Michigan, with a flood stage of 8.0 feet, rose above flood stage around 5 PM EDT on July 28<sup>th</sup>, crested near 9.00 feet at around 9:21 AM EDT on July 29<sup>th</sup>, and fell back below flood stage around 10 AM EDT on July 31<sup>st</sup>.

The Grand River at Lansing, Michigan, with at flood stage of 11.0 feet, rose above flood stage around 4:30 AM EDT on July 30<sup>th</sup>, crested at 11.06 feet at 8:15 AM EDT on July



30<sup>th</sup>, and fell back below flood stage around 2:15 PM EDT on July 30<sup>th</sup>.

The Thornapple River near Hastings, Michigan, with a flood stage of 7 feet, rose above flood stage around 6:00 PM EDT on July 30<sup>th</sup>, crested at 7.98 feet at 12:45 AM EDT on August 1<sup>st</sup>, and fell back below flood stage around 7:45 PM EDT on August 2<sup>nd</sup>.

### **River Conditions**

Significant rainfall at the end of the month in our more Southern basins resulted in river levels in our HSA by the end of July being significantly above normal. Our more Northern basins were near normal. 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	102
Whitehall	White	107
Evart	Muskegon	110
Alma	Pine	311
Lansing	Grand	2000
Grand Rapids	Grand	526
East Lansing	Red Cedar	2600
Hastings	Thornapple	2240
Battle Creek	Battle Creek	800
Battle Creek	Kalamazoo	200

### **General Hydrologic Information**

July 2011 had significantly above normal temperatures for the entire HSA, and above normal precipitation for the Southern half of our HSA. Below normal precipitation occurred over the Northern half of our HSA (Figure 1). The vast majority of the rain that fell during the month came during the period of July 27<sup>th</sup> through July 29<sup>th</sup>, when waves of thunderstorms rode along a frontal boundary stalled along Interstate 96. Some locations in Eaton and Ingham Counties received between 6 to 10 inches of rainfall during that time period.

July precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan, were 6.87, 4.76, and 4.30 inches, respectively (Figure 2). Precipitation totals for the month at these three sites were 3.31 inches above normal at Grand Rapids, 2.08 inches above normal at Lansing, and 1.98 inches above normal at Muskegon, Michigan (Figure 1). Yearly precipitation totals were 10.0 inches above normal for Grand Rapids, 7.34 inches above normal for Lansing, and 6.79 inches above normal for Muskegon, Michigan.

Several rounds of showers and thunderstorms moved through Southwest Lower Michigan the night of July 27<sup>th</sup> to 28<sup>th</sup>. Flooded roadways and intersections were experienced across most of the area south of Interstate 96. The most significant impacts occurred in the Lansing, Michigan area. The greatest reported rainfall total was 9.25 inches at Leslie, Michigan. Radar precipitation estimates (Fig. 3) suggest that over 6 inches of rain fell in a

broad swath across eastern Eaton, southwestern Ingham, and northeastern Jackson counties.

Temperatures for the month of July were above normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of +5.6, +5.9 and +5.3 degrees Fahrenheit, respectively.

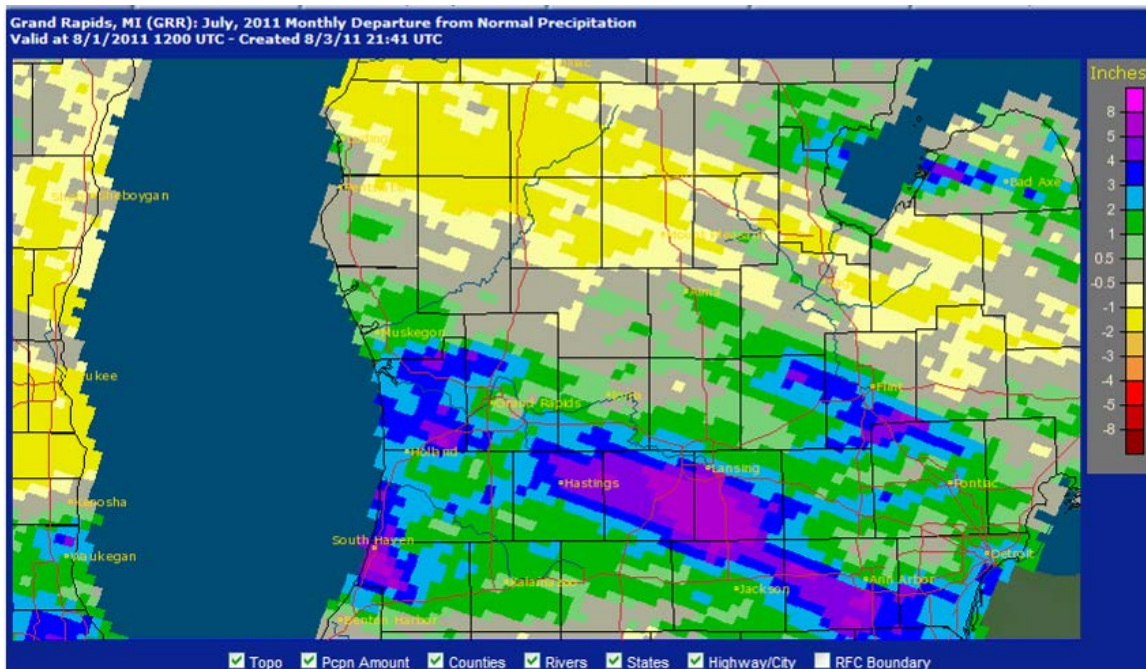


Figure 1. July 2011 Monthly Departure from Normal Rainfall Totals

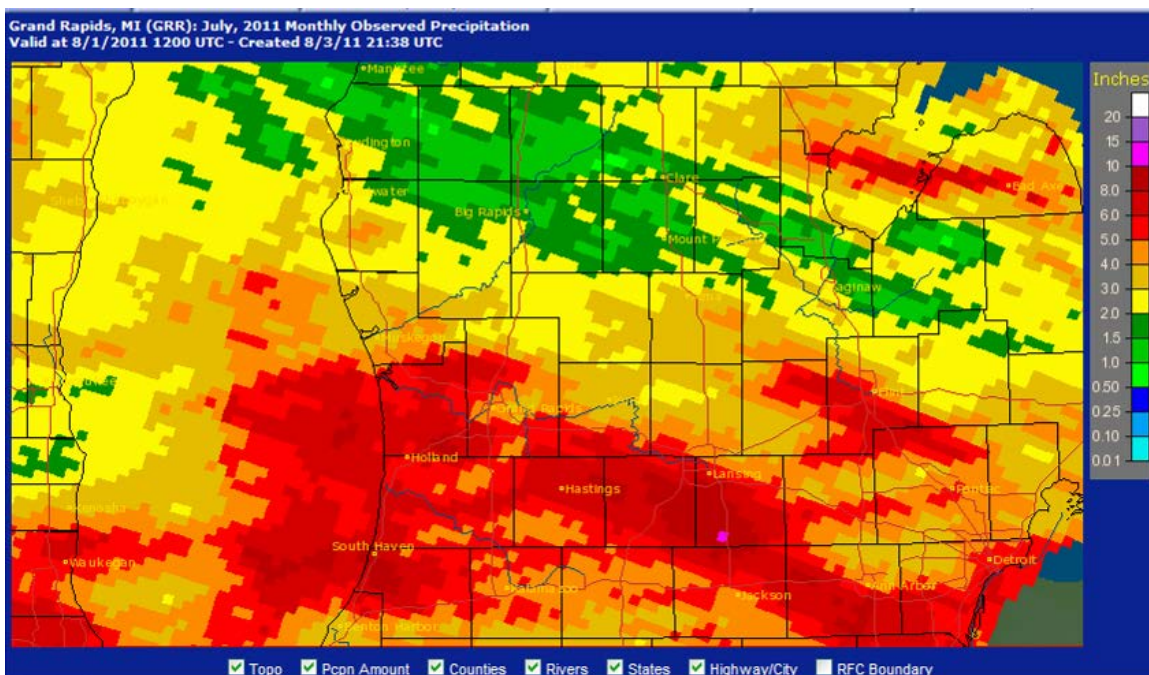


Figure 2. July 2011 Monthly Rainfall Totals

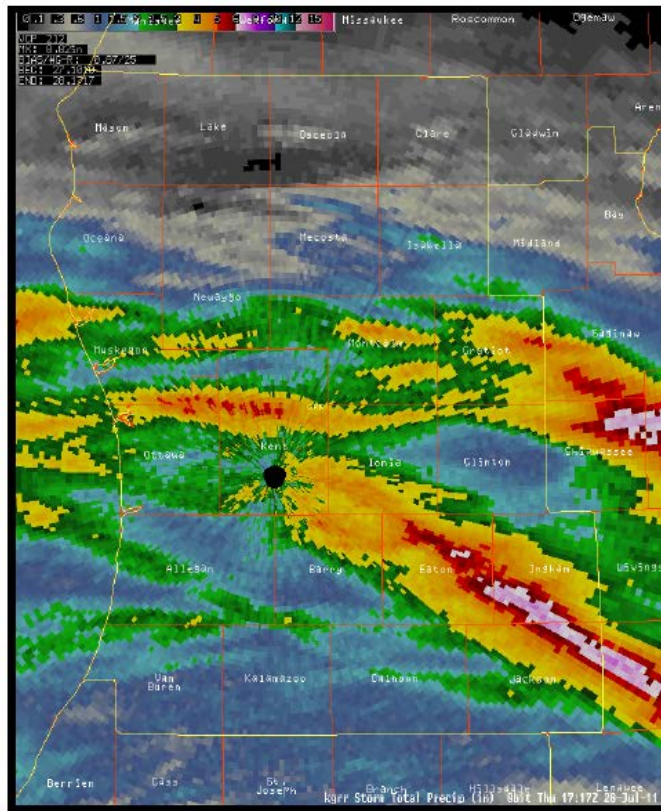


Figure 3. Radar estimated storm total precipitation (inches) for July 27 – 28 heavy rain event. Enlarged color legend is shown underneath.

**Hydrologic Products issued this month:**

- 9 Flood Watches (ARBFFAGRR)
- 5 Flash Flood Warnings (ARBFFWGRR)
- 16 Flash Flood Statements (ARBFFSGRR)
- 4 River Flood Warnings (ARBFLWGRR)
- 6 River Flood Statements (ARBFLSGRR)
- 36 Areal Flood Advisories (ARBFLSGRR)
- 21 River Flood Advisories (ARBFLSGRR)
- 29 Hydrologic Statements (ARBRVSGRR)
- 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 31 Hydrologic Summaries (ARBRVAGRR)
- 31 Daily River and Lake Summaries (ARBRVDGRR)



**LANSING FIRE DEPARTMENT  
OFFICE OF EMERGENCY MANAGEMENT**

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**LOCAL STATE OF EMERGENCY**

**To: Commanding Officer – Michigan State Police, Emergency  
Management Homeland Security  
District 1 Coordinator, Emergency Management Homeland  
Security  
Michigan State Police, Operations Center**

**From: Mayor Virg Bernero** 

**Date: July 28, 2011**

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On July 28, 2011 the City of Lansing, Michigan sustained severe property damage caused by flooding. As a result of this situation, the following conditions exist: several homes have been destroyed, residents are not able to return to their homes, some roads are impassable, and some critical facilities have been flooded.

Therefore, as Mayor of the City of Lansing, in accordance with Section 10 of Act 390, P.A. 1976, as amended, I hereby declare that a "State of Emergency" exists therein, that the response and recovery aspects of the emergency operations plan have been activated, and that local resources are being utilized to the fullest extent possible.

Authorized by: Mayor Virg Bernero