

MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS

DATE:
July 19, 2010

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

Summary

June was a very hydrologically active month and river levels remained significantly above normal for the entire month. Over 200 hydrologic products were issued during the month of June.

Flash Flooding occurred on June 6th in Calhoun and Kalamazoo Counties, and several roads were flooded in Jackson County. In Calhoun County, the road commission closed several roads due to washouts and flooding (one road had water covering the road to a depth of 4 feet). In Kalamazoo County, local law enforcement reported significant street flooding in downtown Kalamazoo, Michigan, which required patrol cars to block off streets to keep people from driving into the flood waters. The Kalamazoo road commission also reported 10 gravel roads washed out in Oshtemo and Texas Townships located in western Kalamazoo County. In Jackson County three roads were closed due to flooding, but local officials indicated that these roads “flood all the time”.

Flooding occurred late on June 15th and into the 16th in Allegan, Barry, Kent, Ottawa, and Van Buren Counties. Road commissions and central dispatch centers in the affected counties indicate that numerous road closures occurred due to high water. Flooding resulted in the evacuation of 15 residents from a retirement complex, in Kentwood, Michigan; estimated damage was \$250,000 for the retirement complex.

Urban and small stream flood advisories were issued for all 23 counties in our Hydrologic Service Area (HSA) during the month of June. Also in June, nine forecast points exceeded bankfull stage and one forecast point exceeded flood stage.

Flood Conditions

Tuesday, June 1st

At 5:09 AM EDT, the Hazardous Weather Outlook mentioned the potential for flooding this week due to heavy rains associated with rounds of thunderstorms along a stalled front over the area.

At 10:18 AM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan (Carry over from May).

At 9:32 PM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan and a river flood advisory was issued for the Portage River near Vicksburg, Michigan.

Wednesday, June 2nd

At 5:10 AM EDT, a flood advisory for urban and small streams was issued for Allegan, Barry, Kent, and Van Buren Counties until 9:00 AM EDT.

At 6:57 AM EDT, the flood advisory for urban and small streams continued for Allegan, Barry, Kent, and Van Buren Counties until 9:00 AM EDT. Reports were received of water over roads.

At 8:54 AM EDT, the flood advisory for urban and small streams was extended for Allegan, Barry, Kent, and Van Buren Counties until Noon EDT.

At 11:01 AM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan and Portage River near Vicksburg, Michigan, and a river flood advisory was issued for the Grand River at Jackson, Michigan.

At 11:46 AM EDT, the flood advisory for urban and small streams was cancelled for Barry and Kent Counties and remained in effect for Allegan and Van Buren Counties until Noon EDT.

At 11:57 AM EDT, the flood advisory for urban and small streams was extended for Allegan and Van Buren Counties until Midnight EDT, Thursday.

At 5:31 PM EDT, the river flood advisory for the Grand River at Jackson, Michigan was cancelled.

At 8:11 PM EDT, a flood advisory for urban and small streams was issued for Mecosta and Montcalm Counties until 12:15 AM EDT.

At 9:00 PM EDT, the river flood advisory was cancelled for the Portage River near Vicksburg, Michigan, and continued for the St. Joseph River at Burlington, Michigan.

At 10:50 PM EDT, the flood advisory for urban and small streams was cancelled for Mecosta and Montcalm Counties.

At 11:22 PM EDT, the flood advisory for urban and small streams was cancelled for Allegan and Van Buren Counties.

Thursday, June 3rd – Friday, June 4th

The river flood advisory continued for the St. Joseph River at Burlington, Michigan.

Saturday, June 5th

At 4:10 AM EDT, a flood watch was issued for portions of Calhoun, Jackson, Kalamazoo, and Van Buren Counties from this evening through Sunday morning.

At 10:18 AM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan, and a river flood advisory was issued for Sycamore Creek near Holt, Michigan, and the Portage River near Vicksburg, Michigan.

At 11:29 AM EDT, the flood watch continued for portions of Calhoun, Jackson, Kalamazoo, and Van Buren Counties and was expanded to include portions of Eaton, Ingham, Allegan, and Barry Counties from this evening through Sunday morning.

At 3:10 PM EDT, the flood watch continued for portions of Calhoun, Jackson, Kalamazoo, Van Buren, Eaton, Ingham, Allegan, and Barry Counties from this evening through Sunday morning.

At 8:24 PM EDT, a flood advisory for urban and small streams was issued for Eaton, Allegan, and Barry Counties until 8:15 AM EDT, Sunday.

At 9:55 PM EDT, a flood advisory for urban and small streams was issued for Calhoun, Clinton, Ingham, Ionia, Jackson, Kalamazoo, Kent, Ottawa, and Van Buren Counties until 9:45 AM EDT, Sunday.

At 10:21 PM EDT, the river flood advisory continued for the following rivers:

- Sycamore Creek at Holt, Michigan
- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan

and were issued for the following rivers:

- Grand River at Jackson, Michigan
- Grand River at Ionia, Michigan
- Maple River at Maple Rapids, Michigan
- Kalamazoo River at Marshall, Michigan

At 10:48 PM EDT, a flood advisory for urban and small streams continued for Eaton, Allegan, and Barry Counties until 8:15 AM EDT, Sunday.

At 11:51 PM EDT, the flood advisory for urban and small streams continued for Calhoun, Clinton, Ingham, Ionia, Jackson, Kalamazoo, Kent, Ottawa, and Van Buren Counties until 9:45 AM EDT, Sunday.

Sunday, June 6th

At 12:11 AM EDT, a flash flood warning for Calhoun and Kalamazoo Counties was issued until 6:15 AM EDT.

At 12:28 AM EDT, a flash flood warning for Jackson County was issued until 6:30 AM EDT.

At 12:55 AM EDT, a river flood warning was issued for the Grand River at Jackson, Michigan.

At 4:04 AM EDT, the flood watch was cancelled for Calhoun, Jackson, Kalamazoo, Van Buren, Eaton, Ingham, Allegan, and Barry Counties.

At 4:11 AM EDT, a river flood warning was issued for Sycamore Creek near Holt, Michigan, and the Thornapple River near Hastings, Michigan.

At 4:15 AM EDT, the river flood advisory for Sycamore Creek near Holt, Michigan, was cancelled and upgraded to a river flood warning.

At 4:30 AM EDT, the river flood advisory continued for the following rivers:

- Portage River near Vicksburg, Michigan
 - St Joseph River at Burlington, Michigan
 - Grand River at Ionia, Michigan
 - Maple River at Maple Rapids, Michigan
 - Kalamazoo River at Marshall, Michigan
- and were issued for the following rivers:
- Grand River at Eaton Rapids, Michigan
 - Grand River at Lowell, Michigan
 - Red Cedar River at East Lansing, Michigan
 - Looking Glass River near Eagle, Michigan
 - Kalamazoo River at Comstock, Michigan
 - Kalamazoo River near New Richmond, Michigan

At 4:33 AM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan, and upgraded to a river flood warning.

At 5:53 AM EDT, the flash flood warning was cancelled for Calhoun and Kalamazoo Counties. (Kalamazoo law enforcement reported streets flooding in downtown Kalamazoo and water entering basements in the downtown area at 12:26 AM EDT. Kalamazoo Police were out blocking off roads to keep people from driving through flooded roadways.

Howard Street and Crosstown Parkway near Mills were flooded, with police blocking off access. Riverview between the viaduct and Gull road was reported to have one foot of water over road. Kalamazoo Road Commission reported 10 gravel roads washed out in the West side of the County (Oshtemo and Texas Twp hardest hit). Roads in downtown Kalamazoo near Bronson Hospital were flooded. The Kalamazoo ASOS reported 1.25" in 30 minutes (Midnight – 12:30 AM EDT). Calhoun County Road Commission started to get phone calls from the general public of flooded roads around 3:00 AM EDT. Based on the intense rainfall ending at 1 AM EDT, it was estimated that the flooding began around 1 AM EDT in Battle Creek, Michigan, since it was in an urban area. Calhoun County Road Commission closed U Drive East of 27 Mile Rd because it had water covering the road to a depth of over 4 feet. Road Commission also reported a few washed out gravel roads; water over 2 Mile Road and V Drive, and fast moving water over Bellvue and 12 Mile Rd. The Battle Creek ASOS reported 1.61" in one hour (Midnight – 1 AM EDT)).

At 5:56 AM EDT, the flash flood warning was cancelled for Jackson County. (Three roads were closed due to flooding, but local officials indicated that vehicles could still drive across the flooded roads and that these roads "flood all the time". Heaviest rainfall reports from spotters and Jackson County Road Commission indicated that 2.25-3.00

inches over a six hour period fell in ESE Jackson County. The Jackson County Road Commission reported the following roads flooded:

- 5th Street near North Lakeside had 6-8 inches of flowing water over the road, but was still drivable. Road Commission did not close off road but did put up “water over road” sign;
- Norvell Road just South of Phal Road flooded, but was still drivable. Road Commission did not close off road but did put up “water over road” sign;
- Wolf Lake Road just South of Palmer Road flooded, but was still drivable. Road Commission did not close off road but did put up “water over road” sign.)

At 9:48 AM EDT, the flood advisory for urban and small streams was allowed to expire for Calhoun, Clinton, Ingham, Ionia, Jackson, Kalamazoo, Kent, Ottawa, and Van Buren Counties.

At 11:47 AM EDT, the river flood advisory continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Maple River at Maple Rapids, Michigan
- Kalamazoo River at Marshall, Michigan
- Grand River at Eaton Rapids, Michigan
- Grand River at Lowell, Michigan
- Red Cedar River at East Lansing, Michigan
- Kalamazoo River near New Richmond, Michigan

and were issued for the following rivers:

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

At 11:49 AM EDT the river flood warning was cancelled and downgraded to a river flood advisory of the following rivers:

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

At 7:29 PM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan.

At 10:29 PM EDT, the river flood advisory was cancelled for the following rivers:

- Maple River at Maple Rapids, Michigan
- Grand River at Eaton Rapids, Michigan
- Grand River at Lowell, Michigan
- Looking Glass River near Eagle, Michigan
- Kalamazoo River at Comstock, Michigan
- Red Cedar River at East Lansing, Michigan

and continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Grand River at Jackson, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan

Monday, June 7th

At 11:07 AM EDT, the river flood advisory continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan

and were issued for the following rivers:

- Grand River at Jackson, Michigan

At 9:04 PM EDT, the river flood advisory continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Grand River at Jackson, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan

Tuesday, June 8th

At 10:32 AM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan, and continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan

At 10:35 AM EDT, a river flood watch was issued for the Grand River at Jackson, Michigan.

At 11:17 PM EDT, the river flood advisory continued for the following rivers:

- Portage River near Vicksburg, Michigan
- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan

and were issued for the following rivers:

- Grand River at Jackson, Michigan
- Grand River at Eaton Rapids, Michigan
- Kalamazoo River at Comstock, Michigan

At 11:27 PM EDT, the river flood watch was cancelled for the Grand River at Jackson, Michigan.

Wednesday, June 9th

At 10:19 AM EDT, the river flood advisory was cancelled for the following rivers:

- Grand River at Eaton Rapids, Michigan
- Portage River near Vicksburg, Michigan

and continued for the following rivers:

- St Joseph River at Burlington, Michigan
- Grand River at Ionia, Michigan
- Kalamazoo River at Marshall, Michigan
- Kalamazoo River near New Richmond, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan
- Grand River at Jackson, Michigan
- Kalamazoo River at Comstock, Michigan

At 9:37 PM EDT, the river flood advisory was cancelled for the Kalamazoo River at Marshall, Michigan, and continued for the following rivers:

- Grand River at Jackson, Michigan
- Sycamore Creek at Holt, Michigan
- Grand River at Ionia, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River at Comstock, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

Thursday, June 10th

At 10:25 AM EDT, the river flood advisory continued for the following rivers:

- Grand River at Jackson, Michigan
- Sycamore Creek at Holt, Michigan
- Grand River at Ionia, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River at Comstock, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

At 9:52 PM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan, and continued for the following rivers:

- Sycamore Creek at Holt, Michigan
- Grand River at Ionia, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River at Comstock, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

At 11:06 PM EDT, the river flood advisory was cancelled for the Grand River at Ionia, Michigan.

Friday, June 11th

At 10:05 AM EDT, the river flood advisory continued for the following rivers:

- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River at Comstock, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

At 9:44 PM EDT, the river flood advisory was cancelled for Sycamore Creek near Holt, Michigan and Kalamazoo River at Comstock, Michigan, and continued for the following rivers:

- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

Saturday, June 12th

At 10:13 AM EDT, the river flood advisory continued for the following rivers:

- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

At 3:43 PM EDT, the river flood advisory was cancelled for the Thornapple River near Hastings, Michigan.

At 8:34 PM EDT, the river flood advisory continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

Sunday, June 13th

At 9:31 AM EDT, the river flood advisory continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- St Joseph River at Burlington, Michigan

At 9:50 PM EDT, the river flood advisory was cancelled for the St. Joseph River at Burlington, Michigan, and continued for the Kalamazoo River near New Richmond, Michigan.

Monday, June 14th

At 8:07 AM EDT, the river flood advisory was cancelled for the Kalamazoo River near New Richmond, Michigan.

Tuesday, June 15th

At 8:49 PM EDT, a flood advisory for urban and small streams was issued for Allegan and Van Buren Counties until 12:45 AM EDT.

At 9:39 PM EDT, a flood advisory for urban and small streams was issued for Mason, Muskegon, and Oceana Counties until 9:30 AM EDT, Wednesday.

At 10:41 PM EDT, a flood advisory for urban and small streams was issued for Ionia, Allegan, Barry, Kent, Ottawa, and Van Buren Counties until 6:45 AM EDT, Wednesday.

At 11:46 PM EDT, a flood warning for urban and small streams was issued for portions of Allegan, Barry, Kent, Ottawa, and Van Buren Counties until 11:45 AM EDT, Wednesday (3 to 4.5 inches of rain fell from 8 PM EDT Tuesday to 3 AM EDT Wednesday over an area extending from South Haven to Grand Rapids, Michigan. Downtown Grand Rapids received two inches of rain within a two hour span from 11 PM EDT Tuesday to 1 AM EDT Wednesday. At 11:55 PM EDT in Grand Rapids, Michigan, law enforcement reported the intersection of 60th and East Paris was flooded with several cars stalled in the water).

At 11:51 PM EDT, the flood advisory for urban and small streams was cancelled for Allegan and Van Buren Counties (replaced by flood warning).

At 11:52 PM EDT, a flood advisory for urban and small streams was cancelled for Ionia, Allegan, Barry, Kent, Ottawa, and Van Buren Counties (replaced by flood warning).

Wednesday, June 16th

At 12:14 AM EDT, a flood advisory for urban and small streams was issued for portions of Calhoun, Kalamazoo, and Van Buren Counties until 12:15 PM EDT.

At 7:53 AM EDT, the flood advisory for urban and small streams was cancelled for Muskegon, Oceana, and Mason Counties.

At 7:57 AM EDT, the flood advisory for urban and small streams was cancelled for, Calhoun, Kalamazoo, and Van Buren Counties.

At 11:46 AM EDT, the flood warning for urban and small streams was extended for portions of Allegan, Barry, Kent, Ottawa, and Van Buren Counties until 11:45 PM EDT, Wednesday. (At 11:45 AM EDT, road commissions and central dispatch centers in the affected counties indicate that numerous road closures still existed due to high water. In Kentwood, Michigan, flooding resulted in the evacuation of 15 residents from a retirement complex, estimated damage was \$250,000. In Allegan County, the road commission closed 143rd Street when flooding washed out 143rd Street between Second Street and Patterson.)

At 9:20 PM EDT, a river flood advisory was issued for the Kalamazoo River near New Richmond, Michigan.

At 9:34 PM EDT, a flood advisory for urban and small streams was issued for portions of Allegan and Barry Counties until 9:30 PM EDT, Thursday.

At 9:38 PM EDT, the flood warning for urban and small streams was cancelled for portions of Ottawa, Kent, Barry, and Van Buren Counties.

Thursday, June 17th

At 12:06 PM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan and a river flood advisory was issued for the Portage River near Vicksburg, Michigan.

At 2:06 PM EDT, the flood advisory for urban and small streams continued for portions of Allegan and Barry Counties until 9:30 PM EDT, Thursday.

At 8:00 PM EDT, the flood advisory for urban and small streams was cancelled for Allegan and Barry Counties.

At 8:13 PM EDT, the river flood advisory continued for the following rivers:

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

Friday, June 18th

At 8:35 AM EDT, the river flood advisory was cancelled for the Portage River near Vicksburg, Michigan.

At 10:46 AM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

At 5:51 PM EDT, a flood watch for the potential for flash flooding was issued for portions of Clare, Gratiot, Isabella, Mecosta, Montcalm, Osceola, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, Lake, Mason, Muskegon, Newaygo and Oceana Counties until Saturday afternoon.

At 8:09 PM EDT, a flood advisory for urban and small streams was issued for Kalamazoo County until 4:00 AM EDT, Saturday.

At 9:59 PM EDT, a river flood watch was issued for the Kalamazoo River near New Richmond, Michigan.

At 10:09 PM EDT, the flood advisory for urban and small streams was cancelled for Kalamazoo County.

Saturday, June 19th

At 1:57 AM EDT, the river flood watch was cancelled for the Kalamazoo River near New Richmond.

At 2:00 AM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

At 4:01 AM EDT, the flood watch for the potential for flash flooding was cancelled for Clare, Gratiot, Isabella, Mecosta, Montcalm, Osceola, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, Lake, Mason, Muskegon, Newaygo and Oceana Counties.

At 10:41 AM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

At 8:25 PM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

Sunday, June 20th

At 10:57 AM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

At 9:48 PM EDT, the river flood advisory continued for the Kalamazoo River near New Richmond, Michigan.

Monday, June 21st

At 9:01 AM EDT, the river flood advisory was cancelled for the Kalamazoo River near New Richmond, Michigan.

Tuesday, June 22nd

At 12:58 AM EDT, a flood advisory for urban and small streams was issued for portions of Kent, Ottawa, and Muskegon Counties until 1:00 PM EDT.

At 1:26 AM EDT, a flash flood warning was issued for portions of Ottawa and Muskegon Counties until 7:30 AM EDT.

At 1:32 AM EDT, a flood advisory for urban and small streams was issued for portions of Calhoun, Clinton, Eaton, Ionia, Jackson, Allegan, Barry, Kalamazoo, and Van Buren Counties until 1:30 PM EDT.

At 2:27 AM EDT, a flood advisory for urban and small streams was issued for portions of Calhoun, Clinton, Eaton, Ingham, and Jackson Counties until 2:30 PM EDT.

At 2:55 AM EDT, the flash flood warning continued for portions of Ottawa and Muskegon Counties until 7:30 AM EDT. (At 1:22 AM EDT, street flooding to a depth of 6 inches was reported in Grand Haven, Michigan. At 2:49 AM EDT, up to 3 inches of rain had fallen from Grand Haven to near Fruitport, Michigan, in about one hour. Central dispatch from Ottawa County reported that flash flooding had occurred in parts of the warning area but this could not be confirmed).

At 4:02 AM EDT, the flash flood warning was cancelled for Ottawa and Muskegon Counties.

At 4:08 AM EDT, the flood advisory for urban and small streams continued for portions of Kent, Ottawa, and Muskegon Counties until 1:00 PM EDT.

At 4:13 AM EDT, the flood advisory for urban and small streams continued for portions of Calhoun, Clinton, Eaton, Ionia, Jackson, Allegan, Barry, Kalamazoo, and Van Buren Counties until 1:30 PM EDT.

At 10:31 AM EDT, the flood advisory for urban and small streams was cancelled for portions of Kent, Ottawa, and Muskegon Counties.

At 10:33 AM EDT, the flood advisory for urban and small streams was cancelled for portions of Calhoun, Clinton, Eaton, Ionia, Jackson, Allegan, Barry, Kalamazoo, and Van Buren Counties.

At 10:34 AM EDT, the flood advisory for urban and small streams was cancelled for portions of Calhoun, Clinton, Eaton, Ingham, and Jackson Counties.

At 11:00 AM EDT, a river flood advisory was issued for the Kalamazoo River near New Richmond, Michigan.

At 9:05 PM EDT, the river flood advisory was cancelled for the Kalamazoo River near New Richmond, Michigan.

Wednesday, June 23rd

At 7:30 AM EDT, a flood watch for the potential for flash flooding was issued for Gratiot, Montcalm, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, and Muskegon Counties through this evening.

At 10:05 AM EDT, a river flood advisory was issued for the following rivers:

- Grand River at Ionia, Michigan
- Sycamore Creek at Holt, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan

At 4:17 PM EDT, the flood watch for the potential for flash flooding continues for Gratiot, Montcalm, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, and Muskegon Counties until Midnight EDT tonight.

At 9:18 PM EDT, the river flood advisory was cancelled for the following rivers:

- Grand River at Ionia, Michigan
- Sycamore Creek at Holt, Michigan

continued for the following rivers:

- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan

and issued for the Kalamazoo River at Marshall, Michigan.

At 9:54 PM EDT, a flood advisory for urban and small streams was issued for Jackson County until 10:00 AM EDT, Thursday.

At 11:29 PM EDT, the flood watch for the potential for flash flooding was cancelled for Gratiot, Montcalm, Calhoun, Clinton, Eaton, Ingham, Ionia, Jackson, Allegan, Barry, Kalamazoo, Kent, Ottawa, Van Buren, and Muskegon Counties.

Thursday, June 24th

At 12:19 AM EDT, a river flood advisory was issued for the Grand River at Jackson, Michigan.

At 9:13 AM EDT, the flood advisory for urban and small streams was cancelled for Jackson County.

At 10:48 AM EDT, the river flood advisory continued for the following rivers:

- Grand River at Jackson, Michigan
- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan

and issued for the following rivers:

- Sycamore Creek near Holt, Michigan
- St. Joseph River at Burlington, Michigan.

At 5:40 PM EDT, the river flood advisory continued for the Kalamazoo River at Marshall, Michigan.

At 5:52 PM EDT, the river flood advisory was cancelled for the Kalamazoo River at Marshall, Michigan.

At 10:12 PM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan and continued for the following rivers:

- Thornapple River near Hastings, Michigan
- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan
- Sycamore Creek near Holt, Michigan
- St. Joseph River at Burlington, Michigan.

Friday, June 25th

At 10:45 AM EDT, the river flood advisory was cancelled for the Thornapple River near Hastings, Michigan, and continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan
- Sycamore Creek near Holt, Michigan
- St. Joseph River at Burlington, Michigan.

At 11:12 AM EDT, the river flood advisory was cancelled for Sycamore Creek near Holt, Michigan.

At 9:45 PM EDT, the river flood advisory continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan
- St. Joseph River at Burlington, Michigan.

Saturday, June 26th

At 10:46 AM EDT, the river flood advisory continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- Portage River near Vicksburg, Michigan
- St. Joseph River at Burlington, Michigan.

At 8:44 PM EDT, the river flood advisory was cancelled for the Portage River near Vicksburg, Michigan and continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan
- St. Joseph River at Burlington, Michigan.

Sunday, June 27th

At 11:02 AM EDT, the river flood advisory continued for the following rivers:

- Kalamazoo River near New Richmond, Michigan

- St. Joseph River at Burlington, Michigan

and issued for the Grand River at Jackson, Michigan.

At 2:35 PM EDT, a flood advisory was issued for Clare, Gratiot, Isabella, Mecosta, Montcalm, Osceola, Clinton, Ionia, Kent, Ottawa, Lake, Mason, Muskegon, Newaygo, and Oceana Counties until 8:30 PM EDT.

At 8:27 PM EDT, the flood advisory was allowed to expire for Clare, Gratiot, Isabella, Mecosta, Montcalm, Osceola, Clinton, Ionia, Kent, Ottawa, Lake, Mason, Muskegon, Newaygo, and Oceana Counties.

At 10:05 PM EDT, the river flood advisory was cancelled for the Grand River at Jackson, Michigan.

Monday, June 28th

At 6:14 AM EDT, the river flood advisory was cancelled for the Kalamazoo River near New Richmond, Michigan.

At 10:34 AM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan.

At 9:27 PM EDT, the river flood advisory continued for the St. Joseph River at Burlington, Michigan.

Tuesday, June 29th

At 9:21 AM EDT, the river flood advisory was cancelled for the St. Joseph River at Burlington, Michigan.

Flood Stage Report

Only one river exceeded flood stage during the month of June.

The Grand River at Jackson, Michigan, with a flood stage of 14.0 feet, rose above flood stage around 12:30 AM EDT on June 6th, crested at 14.66 feet at 1:30 AM EDT on June 6th, and fell back below flood stage around 4:45 AM EDT on June 6th.

The following rivers exceeded bankfull during the month of June:

- Grand River at Ionia, Michigan

- Grand River at Jackson, Michigan

- Sycamore Creek at Holt, Michigan

- Thornapple River above Hastings, Michigan

- St Joseph River at Burlington, Michigan

- Kalamazoo River near New Richmond, Michigan

- Kalamazoo River near Marshall, Michigan

- Kalamazoo River at Comstock, Michigan

- Portage River near Vicksburg, Michigan

River Conditions

River levels by the end of June were above normal across our HSA. 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	150
Whitehall	White	158
Evert	Muskegon	133
Mt. Pleasant	Chippewa	209
Lansing	Grand	278
Grand Rapids	Grand	204
East Lansing	Red Cedar	148
Hastings	Thornapple	261
Battle Creek	Battle Creek	224
New Richmond	Kalamazoo	267

General Hydrologic Information

June 2010 had above normal precipitation and temperatures.

June precipitation totals at Grand Rapids, Lansing, and Muskegon, Michigan were 8.04, 4.57, and 4.52 inches, respectively. Monthly precipitation for June 2010 was the third wettest June on record for Grand Rapids, Michigan. Precipitation totals for the month at these three sites were 4.37 inches above normal at Grand Rapids, 0.97 of an inch above normal at Lansing, and 1.94 inches above normal at Muskegon, Michigan. Yearly precipitation totals were 2.81 inches above normal for Grand Rapids, 0.89 of an inch below normal for Lansing, and 0.94 of an inch below normal for Muskegon, Michigan.

Temperatures for the month of June were above normal at Grand Rapids, Lansing, and Muskegon, Michigan, with average monthly departures of +2.1, +2.5 and +2.7 degrees Fahrenheit, respectively.

Hydrologic Products issued this month:

- 10 Flood Watches (ARBFFAGRR)
- 3 Flash Flood Warning (ABRFFWGRR)
- 4 Flash Flood Statements (ARBFFSGRR)
- 2 Flood Warnings (ARBFLWGRR)
- 1 Flood Statements (ARBFLSGRR)
- 2 River Flood Warning (ARBFLWGRR)
- 1 River Flood Statements (ARBFLSGRR)
- 15 Areal Flood Advisories (ARBFLSGRR)
- 86 River Flood Advisories (ARBFLSGRR)
- 30 Hydrologic Statements (ARBRVSGRR)
 - 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
- 30 Hydrologic Summaries (ARBRVAGRR)
- 30 Daily River and Lake Summaries (ARBRVDGRR)