

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:

March 14th, 2018

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

Major flooding occurred in the hydrologic service area during the month of February. One site reached record levels. Michigan declared a State of Disaster for multiple counties as a result of the flooding. In the Grand Rapids hydrologic service area this included the counties of Allegan, Barry, Clare, Eaton, Ingham, Ionia, Kalamazoo, Kent, Mecosta, Newaygo and Ottawa. The cities of Grand Rapids and Lansing were also declared disasters by the State of Michigan. Triggering the flooding was a combination of record rainfall, melting snow, frozen ground and ice jams in some of the rivers. The bulk of the rain fell on the 20th when 2 to 4 inches were measured.

Flood Conditions

Saturday, February 10th

At 310 PM the Area Forecast Discussion mentions the potential for over 2 inches of rain for the Grand Rapids area the following week.

Wednesday, February 14th

At 948 AM, the Hazardous Weather Outlook mentions moderate to heavy rain through midweek which could lead to localized flooding.

Wednesday, February 14th

At 948 AM, the Hazardous Weather Outlook mentions moderate to heavy rain through midweek which could lead to localized flooding.

Friday, February 16th

At 948 AM, the Hazardous Weather Outlook mentions snow melt ahead of the rain event, causing elevated river levels along with ice in the rivers increasing the flood risk next week. It also highlights the multiple rounds of heavy rain forecasted.

Friday, February 16th

A briefing slide was sent to emergency managers, media and other high end users outlining the potential for flooding for next week.

Saturday, February 17th

Another briefing slide was sent to emergency managers, media and other high end users outlining the potential for flooding for next week. Additional details on expected rainfall and the potential for ice jams was included.

Sunday, February 18th

At 404 AM, an ESF Hydrologic Outlook, was issued highlighting the potential for flooding through the week. The outlook highlighted the potential for multiple rounds of rain and the potential for more than 3 inches, along with ice impacts and also snowmelt.

Sunday, February 18th

Another briefing slide was sent to emergency managers, media and other high end users outlining the potential for flooding for next week. Additional details on expected rainfall and the potential for ice jams was included.

Sunday, February 18th

At 1257 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Grand River Near Comstock Park affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Portage River Near Vicksburg affecting Kalamazoo County

Sunday, February 18th

At 302 PM, an areal flood watch was issued for Southwest Lower MI, highlighting the same potential in the ESF

Sunday, February 18th

At 944 PM, the areal flood watch was continued for Southwest Lower MI.

Sunday, February 18th

At 949 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Grand River At Jackson affecting Jackson County
Grand River At Lansing affecting Ingham County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River At Grand Rapids affecting Kent County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Rogue River Below Rockford affecting Kent County

Moderate Flooding was now forecasted for the following forecast points

Looking Glass River Near Eagle affecting Clinton County

Sunday, February 18th

At 958 PM, the flood warning was continued for the following rivers:

Grand River Near Comstock Park affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Sycamore Creek At Holt affecting Ingham County

Red Cedar River At East Lansing affecting Ingham County

Maple River At Maple Rapids affecting Clinton County

Portage River Near Vicksburg affecting Kalamazoo County

Monday, February 19th

At 319 AM, the areal flood watch was continued for Southwest Lower MI.

Monday, February 19th

At 331 AM, the Hazardous Weather Outlook mentions that in addition to the high flood potential from heavy rain and snow melt, that local ice jams are possible.

Monday, February 19th

At 1019 AM, the areal flood watch was continued for Southwest Lower MI.

Monday, February 19th

At 1253 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Grand River At Eaton Rapids affecting Eaton County

Grand River At Portland affecting Ionia County

Red Cedar River Above Williamston affecting Ingham County

Kalamazoo River At Comstock affecting Kalamazoo County

This forecast point eventually goes to record levels

St Joseph River At Burlington affecting Calhoun County

The forecast category was changed to Moderate Flooding for these forecast points

Grand River At Lansing affecting Ingham County

Grand River At Robinson Township affecting Ottawa County

Sycamore Creek At Holt affecting Ingham County

The forecast category was changed to Major Flooding for these forecast points

Looking Glass River Near Eagle affecting Clinton County

Grand River Near Comstock Park affecting Kent County

The forecast category was changed to Record Flooding for these forecast points

Grand River At Jackson affecting Jackson County

Monday February 19th

At 100 PM, a webinar was conducted for emergency managers, media and other high end users providing updates and expectations on the forecasted flooding event.

Monday, February 18th

At 106 PM, the flood warning was continued for the following rivers:

Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River At Grand Rapids affecting Kent County
Red Cedar River At East Lansing affecting Ingham County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Rogue River Below Rockford affecting Kent County
Portage River Near Vicksburg affecting Kalamazoo County

Sunday, February 19th

At 958 PM, the flood warning was continued for the following rivers:

Grand River Near Comstock Park affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Maple River At Maple Rapids affecting Clinton County
Portage River Near Vicksburg affecting Kalamazoo County

Monday, February 19th

At 305 PM, the areal flood watch was continued for Southwest Lower MI.

Monday, February 19th

At 934 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County
Grand River At Eaton Rapids affecting Eaton County
Grand River At Lansing affecting Ingham County
Grand River At Portland affecting Ionia County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River Above Williamston affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
Portage River Near Vicksburg affecting Kalamazoo County

St Joseph River At Burlington affecting Calhoun County
Rogue River Below Rockford affecting Kent County
Kalamazoo River Near New Richmond affecting Allegan County

Monday, February 19th

At 1008 PM, the areal flood watch was continued for Southwest Lower MI.

Monday, February 19th

At 923 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Kalamazoo River Near New Richmond affecting Allegan County

Tuesday, February 20th

At 313 AM, the areal flood watch was continued for Southwest Lower MI.

Tuesday, February 20th

At 623 AM, an Areal Flood Warning was issued for the southern half of the CWA roughly from Grand Rapids to Lansing south. The product was valid into Thursday. This product highlighted the rain and minimal impacts that were starting to develop but highlighted the additional forecasted rainfall through the day would generate worsening flood conditions into the night.

Tuesday, February 20th

At 655 AM, an Areal Flood Warning was issued for most of the northern half of the CWA roughly from Grand Rapids to Lansing north. The product was valid into Thursday. This product highlighted the rain and developing , but highlighted the additional forecasted rainfall through the day would generate worsening flood conditions into the night.

Tuesday, February 20th

At 708 AM, the areal flood watch was cancelled for nearly all of Southwest Lower MI as flood warnings had been posted.

Tuesday, February 20th

At 1123 AM, the Areal Flood Warning was extended for the southern half of the CWA roughly from Grand Rapids to Lansing south. The product was valid into Thursday. This product highlighted the 1 to 2 inches of rain that fell and mentioned another 1 to 2 inches is expected which would trigger worsening flood conditions with an increasing likelihood of road closures.

Tuesday, February 20th

At 1128 AM, the Areal Flood Warning was extended for the northern half of the CWA roughly north of a Grand Rapids to Lansing line. The product was valid into Thursday. This product highlighted the 1 to 2 inches of rain that fell and mentioned up to another 1 inch is expected which would trigger worsening flood conditions with an increasing likelihood of road closures.

Tuesday, February 20th

At 1218 PM, the northern Areal Flood Warning mentions the possibility of an ice jam accompanying the heavy rain on the Muskegon River in Big Rapids.

Tuesday February 20th

At 100 PM, another webinar was conducted for emergency managers, media and other high end users providing updates and expectations on the forecasted flooding event.

Tuesday, February 20th

At 105 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Muskegon River Near Croton affecting Newaygo County

The forecast category was changed to Moderate Flooding for these forecast points

Grand River At Ionia affecting Ionia County

Grand River At Lowell affecting Kent County

Grand River At Ada affecting Kent County

Thornapple River Above Hastings affecting Barry County

Tuesday, February 20th

At 122 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County

Grand River At Eaton Rapids affecting Eaton County

Grand River At Lansing affecting Ingham County

Grand River At Portland affecting Ionia County

Grand River Near Comstock Park affecting Kent County

Grand River At Grand Rapids affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Sycamore Creek At Holt affecting Ingham County

Red Cedar River Above Williamston affecting Ingham County

Red Cedar River At East Lansing affecting Ingham County

Looking Glass River Near Eagle affecting Clinton County

Maple River At Maple Rapids affecting Clinton County

Thornapple River Near Caledonia affecting Kent County

Rogue River Below Rockford affecting Kent County

Kalamazoo River At Comstock affecting Kalamazoo County

Kalamazoo River Near New Richmond affecting Allegan County

St Joseph River At Burlington affecting Calhoun County

Portage River Near Vicksburg affecting Kalamazoo County

Tuesday, February 20th

At 308 PM, the flood warning was continued for the following rivers:

Grand River At Ionia affecting Ionia County
Muskegon River Near Croton affecting Newaygo County
Grand River At Jackson affecting Jackson County
Grand River At Eaton Rapids affecting Eaton County
Grand River At Lansing affecting Ingham County
Grand River At Portland affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River Above Williamston affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Rogue River Below Rockford affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County

The warning mentions “ Additional river rises are expected through the remainder of the week and into the weekend. Some streams and rivers will see river rises to levels not experienced since the 1980s or may reach near record crests. Residents living near and adjacent to rivers should reference forecasts affecting their area and should keep abreast of the latest forecast. All residents should remain vigilant of rising water levels at least through the weekend.”

Tuesday, February 20th

At 355 PM, the Areal Flood Warning was continued for the southern half of the CWA. It mentioned that another round of heavy rain was going to move in leading to worsening flood conditions for the night.

Tuesday, February 20th

At 404 PM, the Areal Flood Warning was continued for the northern half of the CWA. It mentioned that another round of heavy rain was going to move in leading to worsening flood conditions for the night.

Tuesday, February 20th

At 1030 PM, the Areal Flood Warning was continued for the northern half of the CWA. Emergency management had reported flooding throughout the region. It mentioned the

dangers of flooding at night.

Tuesday, February 20th

At 1032 PM, the Areal Flood Warning was continued for the southern half of the CWA. Emergency management had reported flooding throughout the region. It mentioned the dangers of flooding at night.

Tuesday, February 20th

At 1053 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County
Grand River At Ionia affecting Ionia County
Kalamazoo River At Comstock affecting Kalamazoo County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County
Grand River At Eaton Rapids affecting Eaton County
Grand River At Lansing affecting Ingham County
Grand River At Portland affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River Above Williamston affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Rogue River Below Rockford affecting Kent County
Muskegon River Near Croton affecting Newaygo County

Tuesday, February 20th

At 1112 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Chippewa River Below Mt Pleasant affecting Isabella County

Wednesday, February 21st

At 412 AM, a flood warning was issued for the following rivers.

The forecast category was changed to Moderate Flooding for these forecast points

Muskegon River Near Croton affecting Newaygo County

Wednesday, February 21st

At 503 AM, the flood warning was continued for the following river:

Muskegon River Near Croton affecting Newaygo County

Wednesday, February 21st

At 914 AM, a flood warning was issued for the following rivers:

Minor Flooding was forecasted for these forecast points

Pine River At Alma affecting Gratiot County

Wednesday, February 21st

At 1152 AM, the Areal Flood Warning was continued for the northern half of the CWA. The product mentioned that the rain had ended, but the flooding would persist until the water receded.

Wednesday, February 21st

At 1156 AM, the Areal Flood Warning was continued for the southern half of the CWA. The product mentioned that the rain had ended, but the flooding would persist until the water receded.

Wednesday, February 21st

At 1220 PM, a flood warning was issued for the following rivers.

The forecast category was changed to Moderate Flooding for these forecast points

Grand River At Grand Rapids affecting Kent County

Red Cedar River At East Lansing affecting Ingham County

Thornapple River Near Caledonia affecting Kent County

Wednesday, February 21st

At 1235 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County

Grand River At Eaton Rapids affecting Eaton County

Grand River At Lansing affecting Ingham County

Grand River At Portland affecting Ionia County

Grand River At Ionia affecting Ionia County

Grand River At Lowell affecting Kent County

Grand River At Ada affecting Kent County

Grand River Near Comstock Park affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Sycamore Creek At Holt affecting Ingham County

Red Cedar River Above Williamston affecting Ingham County

Looking Glass River Near Eagle affecting Clinton County

Maple River At Maple Rapids affecting Clinton County

Thornapple River Above Hastings affecting Barry County

Rogue River Below Rockford affecting Kent County

Kalamazoo River At Comstock affecting Kalamazoo County

Kalamazoo River Near New Richmond affecting Allegan County

Portage River Near Vicksburg affecting Kalamazoo County

St Joseph River At Burlington affecting Calhoun County

White River Above Whitehall affecting Muskegon County

Muskegon River Near Croton affecting Newaygo County

Chippewa River Below Mt Pleasant affecting Isabella County

Pine River At Alma affecting Gratiot County

Wednesday February 21st

At 200 PM, another webinar was conducted for emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Wednesday, February 21st

At 501 PM, the flood warning was continued for the following rivers:
White River Above Whitehall affecting Muskegon County

Wednesday, February 21st

At 931 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County
Grand River At Eaton Rapids affecting Eaton County
Grand River At Lansing affecting Ingham County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River At Grand Rapids affecting Kent County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County
White River Above Whitehall affecting Muskegon County
Muskegon River Near Croton affecting Newaygo County
Chippewa River Below Mt Pleasant affecting Isabella County
Pine River At Alma affecting Gratiot County
Grand River At Portland affecting Ionia County
Grand River Near Comstock Park affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Red Cedar River Above Williamston affecting Ingham County
Maple River At Maple Rapids affecting Clinton County
Rogue River Below Rockford affecting Kent County
St Joseph River At Burlington affecting Calhoun County

Wednesday, February 21st

At 944 PM, the Areal Flood Warning was continued for the northern half of the CWA.

Wednesday, February 21st

At 946 PM, the Areal Flood Warning was continued for the southern half of the CWA.

Thursday, February 22nd

At 524 AM, the Areal Flood Warning was continued for the northern half of the CWA.

Thursday, February 22nd

At 527 AM, the Areal Flood Warning was continued for the southern half of the CWA.

Thursday, February 22nd

At 718 AM, a flood warning was issued for the following rivers:

Minor Flooding was forecasted for these forecast points

Battle Creek At Battle Creek affecting Calhoun County

Thursday, February 22nd

At 803 AM, a flood warning was issued for the following rivers.

The forecast category was changed to Moderate Flooding for these forecast points

Kalamazoo River At Comstock affecting Kalamazoo County

This site eventually goes to record crest

Thursday, February 22nd

At 931 AM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County
Grand River At Eaton Rapids affecting Eaton County
Grand River At Lansing affecting Ingham County
Grand River At Portland affecting Ionia County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River At Grand Rapids affecting Kent County
Red Cedar River Above Williamston affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River Near New Richmond affecting Allegan County
Battle Creek At Battle Creek affecting Calhoun County
White River Above Whitehall affecting Muskegon County
Muskegon River Near Croton affecting Newaygo County
Grand River Near Comstock Park affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Rogue River Below Rockford affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County

Thursday, February 22nd

At 928 AM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Chippewa River Below Mt Pleasant affecting Isabella County

Thursday, February 22nd

At 1102 AM, a flood warning was issued for the following rivers.

The forecast category was changed from Moderate to Record Flooding for these forecast points

Kalamazoo River At Comstock affecting Kalamazoo County

This site eventually goes to record crest

Thursday, February 22nd

At 1110 AM, the flood warning was continued for the following rivers:

Kalamazoo River Near New Richmond affecting Allegan County

Battle Creek At Battle Creek affecting Calhoun County

Thursday, February 22nd

At 1235 PM, the areal flood warning was continued for much of Southern Lower Michigan.

It mentioned that a temporary website had been set up at

<http://bit.ly/2onh2ug> to follow river trends and that major flooding was occurring.

Thursday, February 22nd

At 1237 PM, the areal flood warning was continued for much of northern parts of the

forecast area. It mentioned that a temporary website had been set up at

<http://bit.ly/2onh2ug> to follow river trends and that major flooding was occurring.

Thursday, February 22nd

At 100 PM, a flood warning was issued for the following rivers.

The forecast category was changed to Moderate Flooding for these forecast points

Thornapple River Near Caledonia affecting Kent County

Thursday, February 22nd

At 108 PM, the flood warning was continued for the following rivers:

Sycamore Creek At Holt affecting Ingham County

Red Cedar River Above Williamston affecting Ingham County

Red Cedar River At East Lansing affecting Ingham County

Maple River At Maple Rapids affecting Clinton County

Looking Glass River Near Eagle affecting Clinton County

Thursday, February 22nd

At 152 PM, the flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River At Eaton Rapids affecting Eaton County
- Grand River At Lansing affecting Ingham County
- Grand River At Portland affecting Ionia County
- Grand River At Ionia affecting Ionia County
- Grand River At Lowell affecting Kent County
- Grand River At Ada affecting Kent County
- Grand River At Grand Rapids affecting Kent County
- Thornapple River Above Hastings affecting Barry County
- Rogue River Below Rockford affecting Kent County
- Grand River Near Comstock Park affecting Kent County
- Grand River At Robinson Township affecting Ottawa County

Thursday February 22nd

At 200 PM, another webinar was conducted for emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Thursday, February 22nd

At 745 PM, the flood warning was downgraded to and advisory for the following rivers:

- White River Above Whitehall affecting Muskegon County

Thursday, February 22nd

At 952 PM, the flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River At Eaton Rapids affecting Eaton County
- Grand River At Portland affecting Ionia County
- Grand River At Ionia affecting Ionia County
- Grand River At Lowell affecting Kent County
- Grand River At Ada affecting Kent County
- Grand River At Grand Rapids affecting Kent County
- Sycamore Creek At Holt affecting Ingham County
- Looking Glass River Near Eagle affecting Clinton County
- Thornapple River Above Hastings affecting Barry County
- Thornapple River Near Caledonia affecting Kent County
- Rogue River Below Rockford affecting Kent County
- Kalamazoo River At Comstock affecting Kalamazoo County
- Kalamazoo River Near New Richmond affecting Allegan County
- Battle Creek At Battle Creek affecting Calhoun County
- Portage River Near Vicksburg affecting Kalamazoo County
- St Joseph River At Burlington affecting Calhoun County
- Muskegon River Near Croton affecting Newaygo County
- Grand River At Lansing affecting Ingham County
- Grand River Near Comstock Park affecting Kent County
- Grand River At Robinson Township affecting Ottawa County
- Red Cedar River Above Williamston affecting Ingham County
- Red Cedar River At East Lansing affecting Ingham County
- Maple River At Maple Rapids affecting Clinton County

Friday, February 23rd

At 928 AM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Pine River At Alma affecting Gratiot County

Friday, February 23rd

At 928 AM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Muskegon River Near Croton affecting Newaygo County

Friday, February 23rd

At 1259 PM, the flood warning was continued for the following rivers:

Kalamazoo River At Comstock affecting Kalamazoo County

Kalamazoo River Near New Richmond affecting Allegan County

Battle Creek At Battle Creek affecting Calhoun County

St Joseph River At Burlington affecting Calhoun County

Portage River Near Vicksburg affecting Kalamazoo County

Friday, February 23rd

At 124 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County

Grand River At Eaton Rapids affecting Eaton County

Grand River At Lansing affecting Ingham County

Grand River At Ionia affecting Ionia County

Grand River At Lowell affecting Kent County

Grand River At Ada affecting Kent County

Grand River At Grand Rapids affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Thornapple River Above Hastings affecting Barry County

Thornapple River Near Caledonia affecting Kent County

Grand River At Portland affecting Ionia County

Grand River Near Comstock Park affecting Kent County

The Flood Warning had been cancelled and downgraded to a Flood Advisory for the following river:

Rogue River Below Rockford affecting Kent County

Friday, February 23rd

At 128 PM, the flood warning was continued for the following rivers:

Sycamore Creek At Holt affecting Ingham County

Red Cedar River Above Williamston affecting Ingham County

Red Cedar River At East Lansing affecting Ingham County

Maple River At Maple Rapids affecting Clinton County

Looking Glass River Near Eagle affecting Clinton County

Friday February 23rd

At 200 PM, another webinar was conducted for emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Friday, February 23rd

At 1021 PM, the flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River At Eaton Rapids affecting Eaton County
- Grand River At Lansing affecting Ingham County
- Grand River At Portland affecting Ionia County
- Grand River At Ionia affecting Ionia County
- Grand River At Lowell affecting Kent County
- Grand River At Ada affecting Kent County
- Grand River At Grand Rapids affecting Kent County
- Grand River At Robinson Township affecting Ottawa County
- Red Cedar River At East Lansing affecting Ingham County
- Looking Glass River Near Eagle affecting Clinton County
- Maple River At Maple Rapids affecting Clinton County
- Thornapple River Near Caledonia affecting Kent County
- Kalamazoo River At Comstock affecting Kalamazoo County
- Kalamazoo River Near New Richmond affecting Allegan County
- Portage River Near Vicksburg affecting Kalamazoo County
- St Joseph River At Burlington affecting Calhoun County
- Muskegon River Near Croton affecting Newaygo County
- Pine River At Alma affecting Gratiot County
- Grand River Near Comstock Park affecting Kent County
- Sycamore Creek At Holt affecting Ingham County
- Thornapple River Above Hastings affecting Barry County

The Flood Warning had been cancelled and downgraded to a Flood Advisory for the following:

- Red Cedar River Above Williamston affecting Ingham County
- Battle Creek At Battle Creek affecting Calhoun County

Saturday, February 24th

At 926 AM, The Flood Warning had been cancelled and downgraded to a Flood Advisory for the following river:

- Pine River At Alma affecting Gratiot County

Saturday, February 24th

At 1140 AM, the flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River At Lansing affecting Ingham County
- Grand River At Ionia affecting Ionia County
- Grand River At Lowell affecting Kent County
- Grand River At Ada affecting Kent County
- Grand River Near Comstock Park affecting Kent County
- Grand River At Grand Rapids affecting Kent County
- Grand River At Robinson Township affecting Ottawa County
- Sycamore Creek At Holt affecting Ingham County

Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Thornapple River Near Caledonia affecting Kent County
Grand River At Portland affecting Ionia County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County

The Flood Warning had been cancelled and downgraded to a Flood Advisory for the following rivers:

Grand River At Eaton Rapids affecting Eaton County
Muskegon River Near Croton affecting Newaygo County

Saturday, February 24th

At 1155 AM, the flood warning was continued for the following rivers:

Kalamazoo River At Comstock affecting Kalamazoo County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County
Kalamazoo River Near New Richmond affecting Allegan County

Saturday, February 24th

At 942 PM, the flood warning was continued for the following rivers:

Grand River At Jackson affecting Jackson County
Grand River At Lansing affecting Ingham County
Grand River At Portland affecting Ionia County
Grand River At Ada affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Sycamore Creek At Holt affecting Ingham County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River Near Comstock Park affecting Kent County
Maple River At Maple Rapids affecting Clinton County
Kalamazoo River At Comstock affecting Kalamazoo County

Saturday February 24th

At 200 PM, a briefing slide was sent to emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Sunday, February 25th

At 813 AM the flood warning had been cancelled and downgraded to a flood advisory for the following rivers:

Grand River At Jackson affecting Jackson County

Grand River At Portland affecting Ionia County

Sunday, February 25th

At 813 AM the flood warning was continued for the following rivers:

Kalamazoo River At Comstock affecting Kalamazoo County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County

Sunday, February 25th

At 1127 AM the flood warning has been cancelled and downgraded to a Flood

Advisory for the following

Sycamore Creek At Holt affecting Ingham County

...The flood warning was continued for the following rivers:

Grand River At Lansing affecting Ingham County
Grand River At Ionia affecting Ionia County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Red Cedar River At East Lansing affecting Ingham County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Looking Glass River Near Eagle affecting Clinton County

Sunday February 25th

At 200 PM, a briefing slide was sent to emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Sunday, February 25th

At 903 PM the flood warning was continued for the following rivers:

Grand River At Lansing affecting Ingham County
Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Red Cedar River At East Lansing affecting Ingham County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County

St Joseph River At Burlington affecting Calhoun County

Monday, February 26th

At 1232 PM the flood warning had been cancelled and downgraded to a Flood Advisory for the following river:

Grand River At Lansing affecting Ingham County

The flood warning was continued for the following rivers:

Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Red Cedar River At East Lansing affecting Ingham County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Thornapple River Near Caledonia affecting Kent County
Kalamazoo River At Comstock affecting Kalamazoo County
St Joseph River At Burlington affecting Calhoun County
Looking Glass River Near Eagle affecting Clinton County
Kalamazoo River Near New Richmond affecting Allegan County
Portage River Near Vicksburg affecting Kalamazoo County

Monday February 26th

At 200 PM, a briefing slide was sent to emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event.

Monday, February 26th

At 248 PM the flood warning has been cancelled for the following rivers:

Red Cedar River At East Lansing affecting Ingham County
Thornapple River Near Caledonia affecting Kent County

Monday, February 25th

At 909 PM the flood warning had been cancelled for the following river:

Kalamazoo River Near New Richmond affecting Allegan County

The flood warning was continued for the following rivers

Grand River At Ionia affecting Ionia County
Grand River At Lowell affecting Kent County
Grand River At Ada affecting Kent County
Grand River Near Comstock Park affecting Kent County
Grand River At Grand Rapids affecting Kent County
Grand River At Robinson Township affecting Ottawa County
Looking Glass River Near Eagle affecting Clinton County
Maple River At Maple Rapids affecting Clinton County
Thornapple River Above Hastings affecting Barry County
Kalamazoo River At Comstock affecting Kalamazoo County
Portage River Near Vicksburg affecting Kalamazoo County

St Joseph River At Burlington affecting Calhoun County

Tuesday, February 27th

At 433 AM the flood warning has been cancelled for the following river:

Thornapple River Above Hastings affecting Barry County

Tuesday, February 27th

At 1109 AM the flood warning has been cancelled for the following rivers:

Grand River At Ionia affecting Ionia County

Kalamazoo River At Comstock affecting Kalamazoo County

Portage River Near Vicksburg affecting Kalamazoo County

The flood warning continues for the following rivers:

Grand River At Lowell affecting Kent County

Grand River At Ada affecting Kent County

Grand River Near Comstock Park affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Maple River At Maple Rapids affecting Clinton County

St Joseph River At Burlington affecting Calhoun County

Grand River At Grand Rapids affecting Kent County

Looking Glass River Near Eagle affecting Clinton County

Tuesday February 27th

At 100 PM, a briefing slide was sent to emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event and the potential impacts of additional forecasted precipitation.

Tuesday, February 20th

At 915 PM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Portage River Near Vicksburg affecting Kalamazoo County

Tuesday, February 27th

At 923 PM The Flood Warning had been cancelled for the following river:

Grand River At Lowell affecting Kent County

Grand River At Ada affecting Kent County

The flood warning was continued for the following rivers:

Maple River At Maple Rapids affecting Clinton County

St Joseph River At Burlington affecting Calhoun County

Grand River Near Comstock Park affecting Kent County

Grand River At Grand Rapids affecting Kent County

Grand River At Robinson Township affecting Ottawa County

Looking Glass River Near Eagle affecting Clinton County

Tuesday, February 20th

At 1140 AM, a flood warning was issued for the following rivers.

Minor Flooding was forecasted for these forecast points

Grand River At Jackson affecting Jackson County

Wednesday, February 28th

At 1145 AM the flood warning was continued for the following rivers:

- Grand River At Robinson Township affecting Ottawa County
- Looking Glass River Near Eagle affecting Clinton County
- Maple River At Maple Rapids affecting Clinton County
- Portage River Near Vicksburg affecting Kalamazoo County
- St Joseph River At Burlington affecting Calhoun County
- Grand River Near Comstock Park affecting Kent County

Wednesday, February 28th

At 1155 AM the flood warning had been cancelled for the following river:

- Grand River At Grand Rapids affecting Kent County

The flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River Near Comstock Park affecting Kent County
- Grand River At Robinson Township affecting Ottawa County
- Looking Glass River Near Eagle affecting Clinton County
- Maple River At Maple Rapids affecting Clinton County
- Portage River Near Vicksburg affecting Kalamazoo County
- St Joseph River At Burlington affecting Calhoun County

Wednesday February 28th

At 100 PM, a briefing slide was sent to emergency managers, media and other high end users providing updates and expectations on the ongoing flooding event and the potential impacts of additional forecasted precipitation

Wednesday, February 28th

At 840 PM the flood warning was continued for the following rivers:

- Grand River At Jackson affecting Jackson County
- Grand River At Robinson Township affecting Ottawa County
- Maple River At Maple Rapids affecting Clinton County
- Grand River Near Comstock Park affecting Kent County
- Looking Glass River Near Eagle affecting Clinton County
- Portage River Near Vicksburg affecting Kalamazoo County
- St Joseph River At Burlington affecting Calhoun County

The following rivers exceeded bankfull during the month of February 2018:

- Pere Marquette River near Scottville, Michigan (6 days above bankfull)
- White River near Whitehall, Michigan (4 days above bankfull)
- Muskegon River near Evart, Michigan (7 days above bankfull)
- Muskegon River near Croton, Michigan (8 days above bankfull)
- Little Muskegon River near Morely, Michigan (3 days above bankfull)

- Maple River at Maple Rapids, Michigan (9 days above bankfull)
- Chippewa River at Mt Pleasant, Michigan (8 days above bankfull)
- Pine River near Alma, Michigan (4 days above bankfull)
- Looking Glass River near Eagle, Michigan (22 days above bankfull)
- Flat River at Smyrna, Michigan (8 days above bankfull)
- Rogue River below Rockford, Michigan (4 days above bankfull)
- Thornapple River above Hastings, Michigan (9 days above bankfull)
- Thornapple River near Caledonia, Michigan (8 days above bankfull)
- Red Cedar River above Williamston, Michigan (8 days above bankfull)
- Red Cedar River at East Lansing, Michigan (8 days above bankfull)
- Sycamore Creek near Holt, Michigan (9 days above bankfull)
- Grand River at Ionia, Michigan (10 days above bankfull)
- Grand River at Jackson, Michigan (9 days above bankfull)
- Grand River at Eaton Rapids, Michigan (5 days above bankfull)
- Grand River at Portland, Michigan (6 days above bankfull)
- Grand River at Lansing, Michigan (8 days above bankfull)
- Grand River at Lowell, Michigan (8 days above bankfull)
- Grand River at Ada, Michigan (8 days above bankfull)
- Grand River near Comstock Park, Michigan (8 days above bankfull)
- Grand River at Grand Rapids, Michigan (8 days above bankfull)
- Grand River at Robinson Township, Michigan (8 days above bankfull)
- Kalamazoo River near New Richmond, Michigan (8 days above bankfull)
- Kalamazoo River near Battle Creek, Michigan (5 days above bankfull)
- Kalamazoo River at Comstock, Michigan (9 days above bankfull)
- Kalamazoo River at Marshall, Michigan (9 days above bankfull)
- Battle Creek near Battle Creek, Michigan (6 days above bankfull)
- Portage River near Vicksburg, Michigan (9 days above bankfull)
- St. Joseph River at Burlington, Michigan (8 days above bankfull)

Twenty four forecast points exceeded flood stage in our HSA during the month of February 2018. A NWS Form E-3 “Flood Stage Report” was issued.

River Conditions

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

<u>Location</u>	<u>River</u>	<u>% of Normal</u>
Scottville	Pere Marquette	200
Whitehall	White	198
Evert	Muskegon	300
Mt. Pleasant	Chippewa	287
Lansing	Grand	380
Grand Rapids	Grand	490
East Lansing	Red Cedar	1010
Hastings	Thornapple	455
Battle Creek	Battle Creek	921
Battle Creek	Kalamazoo	300

General Hydrologic Information

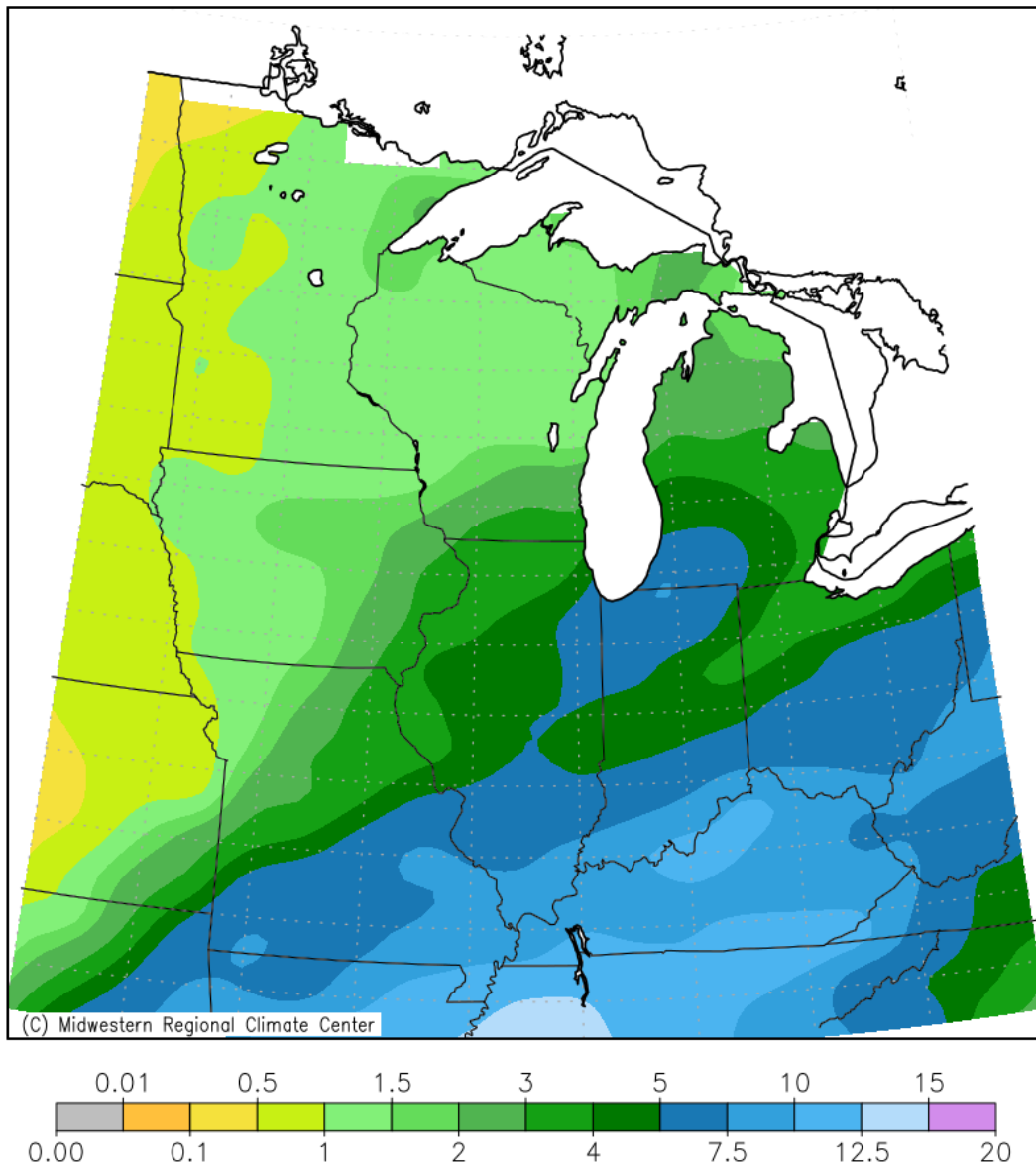
The month of February featured well above normal precipitation and temperatures. The greatest precipitation departures were along the Kalamazoo basin, exceeding 300 percent of normal values. A major rainstorm combined with snowmelt and frozen ground to generate major flooding for the end of the month with one site reaching record levels.

February precipitation for Grand Rapids, Lansing, and Muskegon, Michigan, was 4.93, 4.63, and 4.02 inches, respectively (Figure 1). Monthly departures were 3.14, 3.16 and 2.19 inches respectively. Yearly departures were 3.7, 3.49, and 3.08 inches for Grand Rapids, Lansing and Muskegon respectively. Percent of mean precipitation for February 2018 is shown in Figure 2.

Snowfall was above normal for the month of February at Grand Rapids, Lansing, and Muskegon, Michigan with 20.7 of an inch (5.9 inches above normal), 15.3 of an inch (3.7 inches above normal), and 21.0 (1.7 inches above normal), respectively.

Temperatures for the month of February were above normal at Grand Rapids, Lansing and Muskegon. The average monthly temperature departures for these sites were 3.0, 3.1 and 1.9 degrees Fahrenheit respectively.

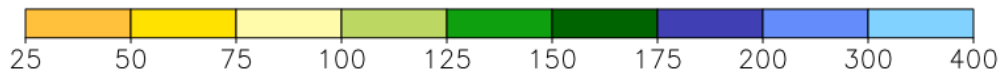
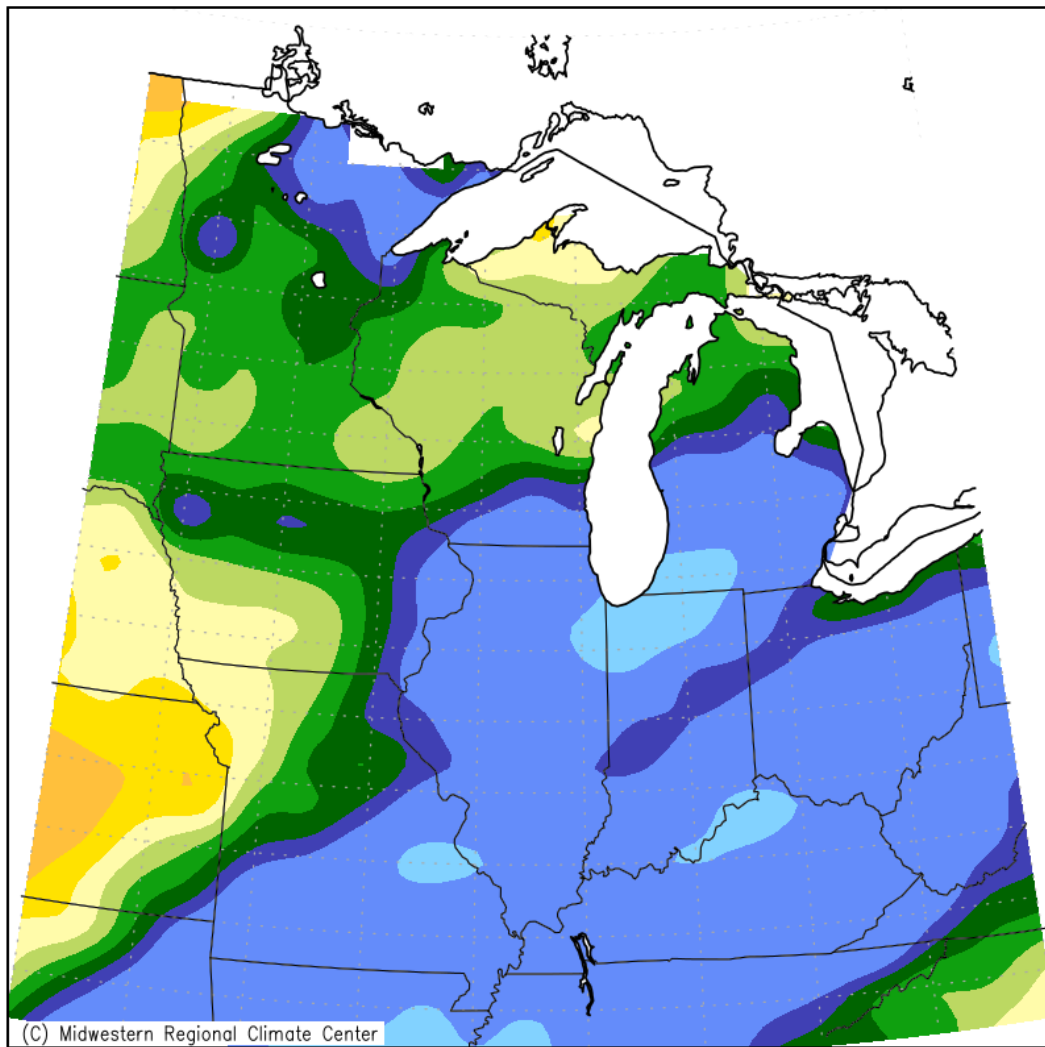
Accumulated Precipitation (in)
February 1, 2018 to February 28, 2018



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana-Champaign

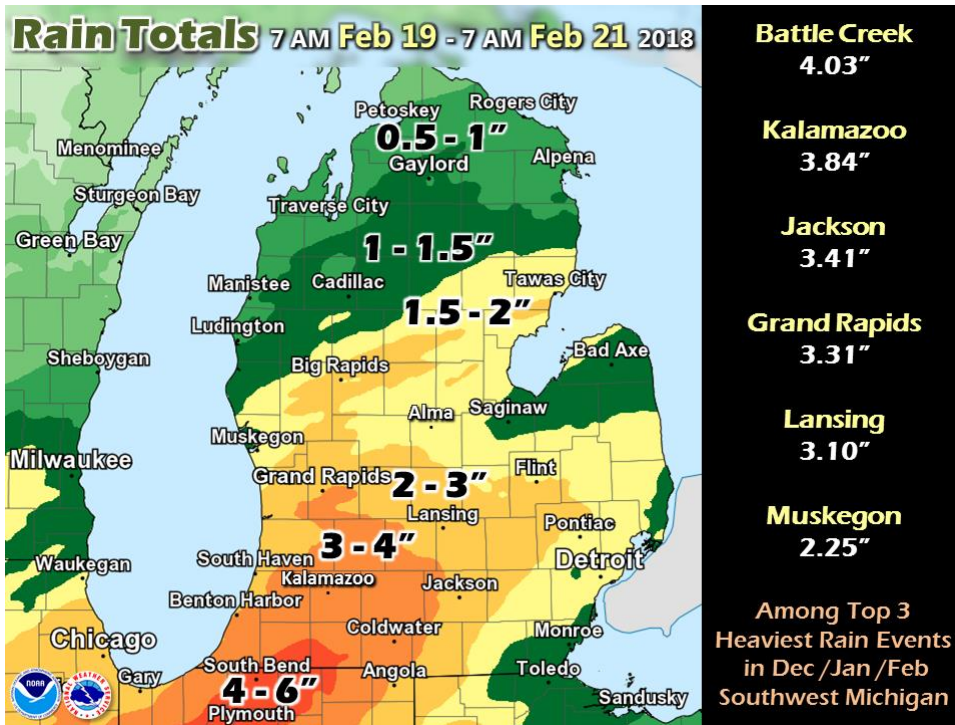
Figure 1. February 2018 Monthly Precipitation Totals

Accumulated Precipitation: Percent of Mean
February 1, 2018 to February 28, 2018



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Figure 2. February 2018 Percent of Mean of Accumulated Precipitation



Hydrologic Products issued this month:

- 28 Hydrologic Summaries (ARBRVAGRR)
 - 1 Probabilistic Hydrologic Outlook (ARBESFGRR)
 - 1 Hydrologic Outlook (ARBESFGRR)
- 18 River Flood Warning (ARBFLWGRR)
 - 6 Areal Flood Warning (ARBFLWGRR)
 - 8 River Flood Watch Statements (ARBFFAGRR)
- 15 Hydrologic Statements (ARBRVSGRR)
- 76 River Flood Advisory Statements (ARBFLSGRR)
- 34 River Flood Warning Statements (ARBFLSGRR)
- 13 Areal Flood Warning Statements (ARBFLSGRR)

- 13 Daily Briefing slides sent to emergency managers, media and other high end users before, during and after the flood
 - 5 Live webinars hosted for partners leading up to and during the worst of the flooding
 - Kalamazoo EOC was staffed by WCM at times during the record flooding
 - Multiple briefings to EM's hit hardest by the flooding

News Articles and Related Documentation



Kalamazoo Gazette

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Brian Meehling and Zhizhen Liu, with MDOT, survey the M-96 bridge over the Kalamazoo River. It's a concern when the water reaches the beam, Meehling said. "It's a pressure flow," said MDOT engineer Zhizhen Liu. "It adds a lot of force."



Cory Morse | MLive.com

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Flood water rises to windows at the Riverfront Plaza Condominium building as the Grand River swells through downtown Grand Rapids on Friday, Feb. 23, 2018.



A submerged car can be seen from a Kalamazoo street that was affected by the flooding of the Kalamazoo River (Photo: Submitted to the Free Press)

Disasters declared for Michigan counties, cities hit by flooding

POSTED 4:17 PM, MARCH 12, 2018, BY FOX 17 NEWS, UPDATED AT 06:17PM, MARCH 12, 2018

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LANSING, Mich. — Gov. Rick Snyder has declared a state of disaster for several areas in Michigan affected by late February flooding.

Snyder's announcement Monday impacts 17 counties as well as the cities of Grand Rapids and Lansing. The disaster declaration allows local governments to have access to state emergency resources, including grants of up to \$100,000 for reimbursement of local response costs.



Kalamazoo

The flooding caused by heavy rain and melting snow from Feb. 19 to Feb. 21 prompted states of emergency and road closures across West Michigan. Widespread damage was reported in places like Hastings and Lowell, and the city of Kalamazoo saw the [worst flooding in its history](#).

The counties affected by Snyder's disaster declaration are: Allegan, Arenac, Barry, Berrien, Cass, Clare, Eaton, Ingham, Ionia, Kalamazoo, Kent, Mecosta, Newaygo, Ogemaw, Oscoda, Ottawa and St Joseph.

The state police Emergency Management and Homeland Security Division is coordinating damage recovery efforts and working with local emergency management agencies in the areas affected by the flooding.

The governor's office says in a release that the state of disaster announcement follows damage assessments performed by the impacted communities after the flooding.

The Associated Press contributed to this report

