

NWS FORM E-5 U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE MONTHLY REPORT OF RIVER AND FLOOD CONDITIONS TO: NATIONAL WEATHER SERVICE (W/OH12x1) HYDROMETEOROLOGICAL INFO CENTER 1325 EAST-WEST HIGHWAY, RM 7116 SILVER SPRING, MD 20910	HSA OFFICE: Marquette, MI
	REPORT FOR (MONTH / YEAR): October 2016
	DATE: November 12, 2016
	SIGNATURE: Robin J. Turner, MIC Justin Titus, Meteorologist
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 no flooding occurred within this Hydrologic Service Area.

October Flooding

Major flooding occurred on the Chocolay River from Skandia into Chocolay Township on October 18th, resulting in M-94 getting washed out about 2 miles west of US-41, water in several homes and swift water rescues on Green Garden Road, the closure of US-41 for over 24 hours, and other local road closures. Additionally, some gravel roads were washed out in central Dickinson County. The flooding occurred as a result of 3-5 inches of rain falling in under 6 hours from late on the 17th to early on the 18th. Precipitation has been above normal for the last few months, which increased the surface runoff and exacerbated the flash flood. Flooding was first reported in eastern Marquette County around 3am EDT 10/18. A Small Stream Flood Advisory was issued at 9:01pm 10/17 from central Dickinson through eastern Marquette County. A Civil Emergency Message was issued at 3:02am 10/18 to announce the closure of US-41 and M-94. A Flash Flood Warning was then issued for eastern Marquette County at 5:17am 10/18. At 6:23am 10/18, a Flood Warning was issued for the river forecast point on the Chocolay River east of Harvey, where the river didn't exceed flood stage until late on the 18th. While the most significant flooding occurred in the ungauged headwaters of the Chocolay River, the river forecast point east of Harvey observed the 4th highest crest since records began in the mid 1980s at 10.84 feet.

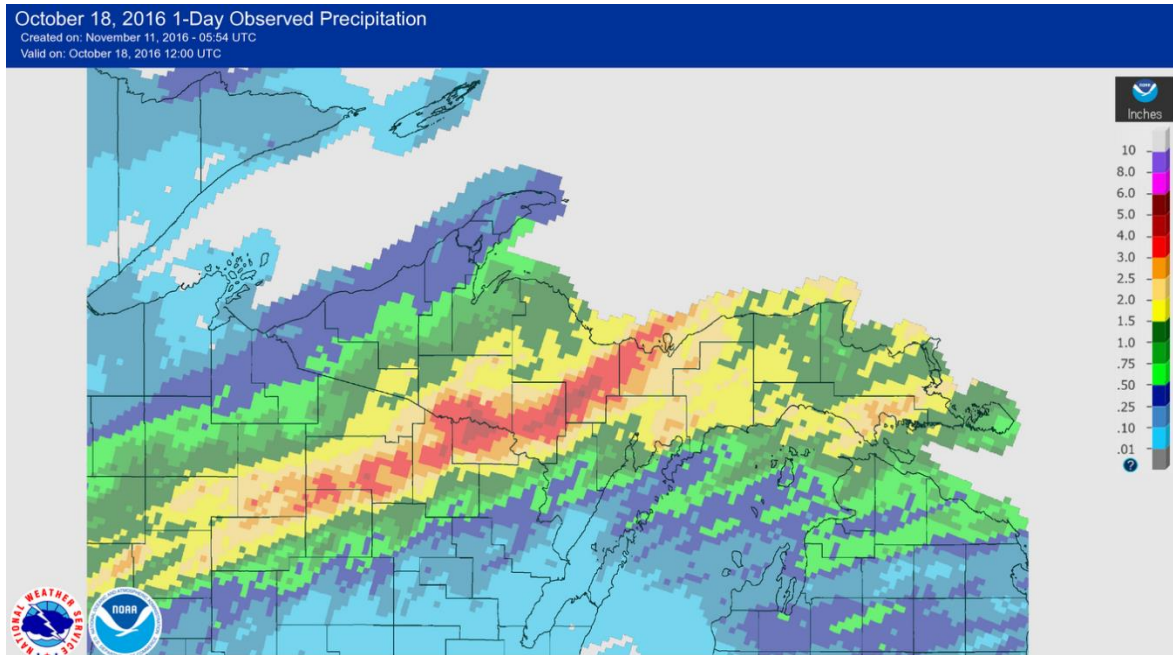


Image: 24 hour precipitation estimates from 8am 10/17/2016 to 8am 10/18/2016. Most of this rain fell in less than 6 hours from late on the 17th to early on the 18th.

October Precipitation

October precipitation was above to well above normal generally from Iron Mountain to Marquette and Munising. Elsewhere, precipitation was near to below normal.

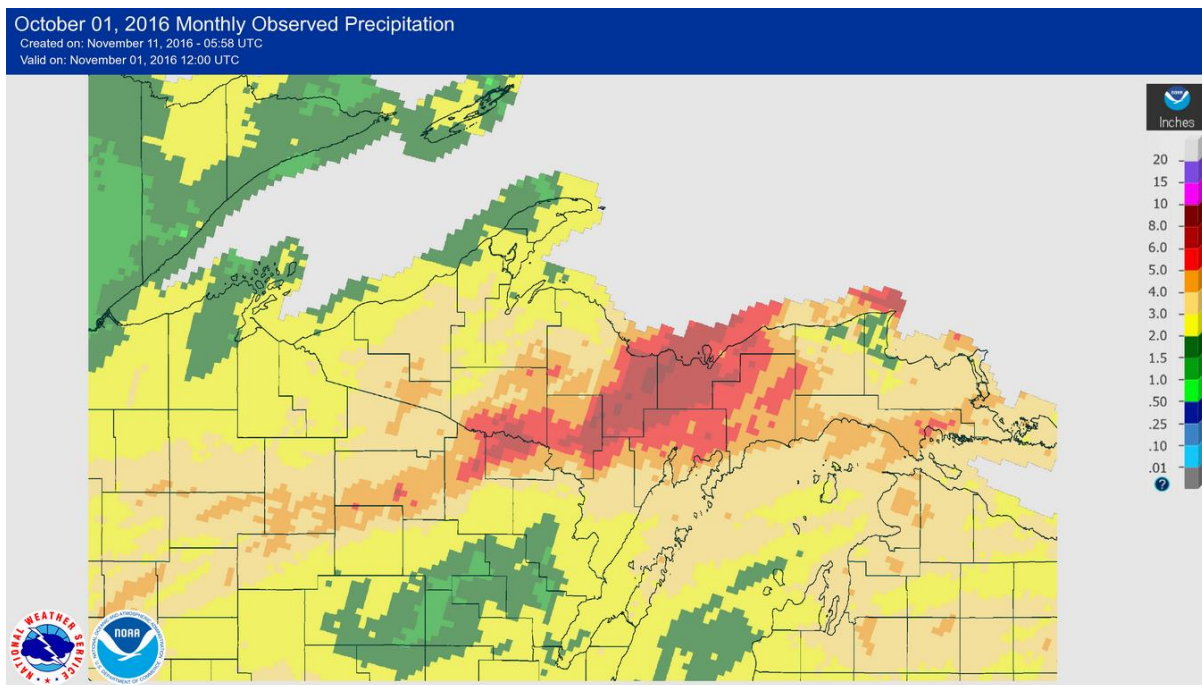


Image: October precipitation estimates.

Below is a chart of some of the larger cities in the Upper Peninsula, with monthly precipitation in inches, the amount of inches above or below normal for the month and any applicable record high or low rank.

Location	Precipitation	Above/Below	Rank
WFO Marquette	2.83	-1.01	
Marquette City	4.00	0.87	
Houghton Airport	2.39	-0.60	
Ironwood	2.69	-1.29	
Iron Mountain	4.22	1.08	
Manistique	3.79	0.31	
Munising	7.02	2.79	7 th
Newberry	3.86	No Data	

Drought Discussion

The November 1, 2016 release of the U.S. Drought Monitor did not indicate drought conditions across Upper Michigan. For the latest drought status, please go to <http://www.drought.gov>.

October River Levels

According to the United States Geological Survey, Upper Michigan October average streamflow generally ranged from normal (25-75 percentile) in some of the western river to much above normal (>90 percentile) in the Central U.P.

October Products Issued

31 – Hydrologic Summary
7 – Flood Statement
4 – Flood Advisory
1 – Flash Flood Warning
1 – Flood Warning
1 – Hydrologic Outlook