



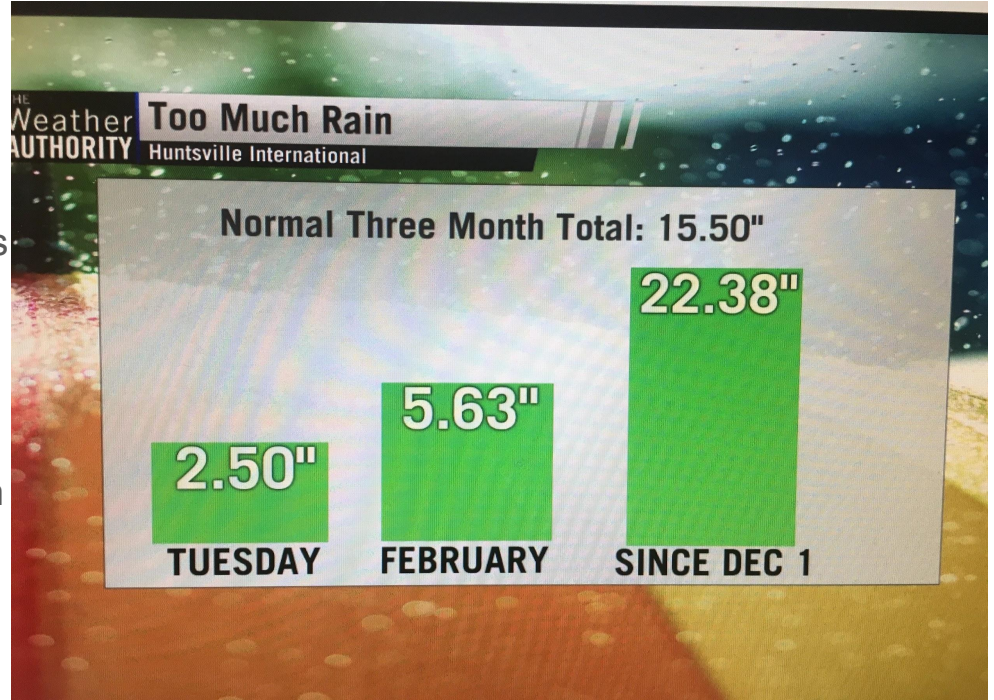
North Alabama Flooding February 2019

Preceding Rainfall

North Alabama was already nearly 7 inches above a normal three month total prior to the rainfall beginning on February 20.

For us here in the Shoals it meant that all ponds sinkholes, and the river were already storing more than the normal amount of water for the year.

TVA indicated that 2018 was the wettest year in 129 years of record keeping with 67 inches of rainfall. Now January and February have both also been above average for 2019.



How much rain did we get?

Between Wednesday February 20 and the end of the day on Saturday February 23 the Shoals received somewhere between 12 and 16 inches of rain depending on your location. With some reports of more than 18 inches.

Approximately 6-8 inches fell on Wednesday through Thursday and then an additional 6-8 inches fell late Friday and Saturday. Saturday's rainfall was split between early morning and Saturday night with about 3 inches coming early Saturday morning and another 0.5" to 1" coming Saturday night.

In the City of Muscle Shoals alone the system dropped over **74 Billion** gallons of water.

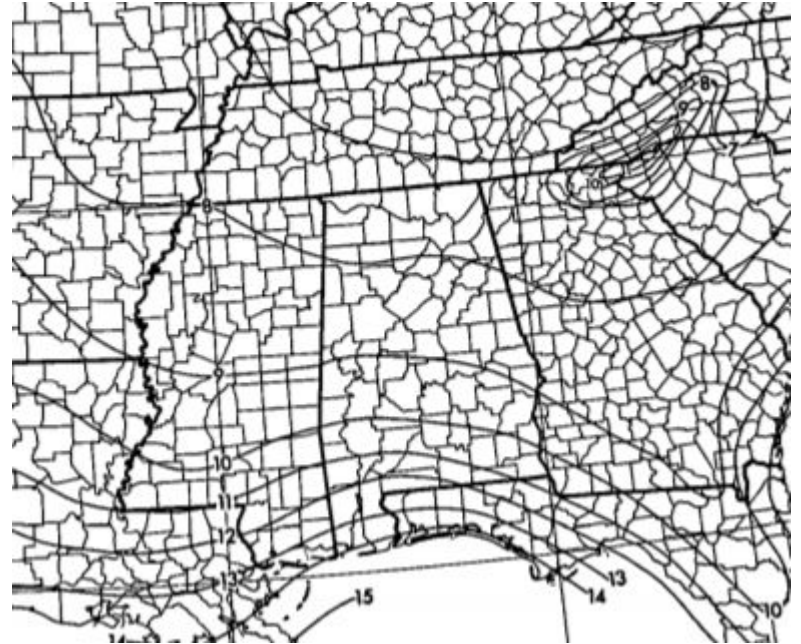


What does that amount of rainfall mean?

A 100 year flood is a flood that is statistically expected to occur one in 100 years.

In this area of the United States a 100 year 24 hour rainfall is defined as approximately 7.5 inches of rainfall in a 24 hour period.

That means that the Shoals over a four day period received more than 1.5 to 2.0 times the amount of rainfall for a 24 hour 100 year storm event.



Were we the only ones?

The entire Tennessee Valley has been affected by these rainfall events. However, northwest Alabama was hit particularly hard and received more rain than areas further east.

Governor Kay Ivey has issued a State of Emergency for 19 north Alabama counties due to flooding issues.



Why didn't the usual places flood (i.e. the mall)?

Since this event occurred over the span of several days it mainly affected low lying areas where the City has retention ponds. Areas like the mall flood more frequently in flash flood events where rainfall is more intense but for a shorter duration. This recent flooding was generally due to the volume of rainfall runoff due to the large rainfalls and excessively wet soil conditions.



Were the pumps running?

Yes the pumps were running in all of the city facilities that have pumping capacity. There were no delayed starts or failures to any of the City maintained pumping facilities.

However, the pumps in these facilities are not capable of pumping at the same rate as water enters the basins during flood events. The pumps are in place to empty the retention facilities in between rainfall events so that the full storage capacity is available when the next rainfall event occurs.



What if my house or business was flooded?

The City of Muscle Shoals website (www.cityofmuscleshoals.com) has information available for issues regarding safety during cleanup.

The website also contains damage assessment forms that will be needed by the county in order to provide information to the AEMA and FEMA regarding damages.



What do we do next? (pray for sunshine)

We will use this event to look at our existing drainage strategies in the City as well as our stormwater requirements for future development.

Since none of our facilities are designed to contain runoff from storms greater than a 100 year frequency it is not surprising that many of our facilities were pushed to their limit or beyond.

We will look at locations where serious flooding of structures occurred and try to determine if any improvements are needed or warranted in those areas.

