



# NOAA, National Weather Service Middle Atlantic River Forecast Center Briefing

**1:00PM February 13, 2016**

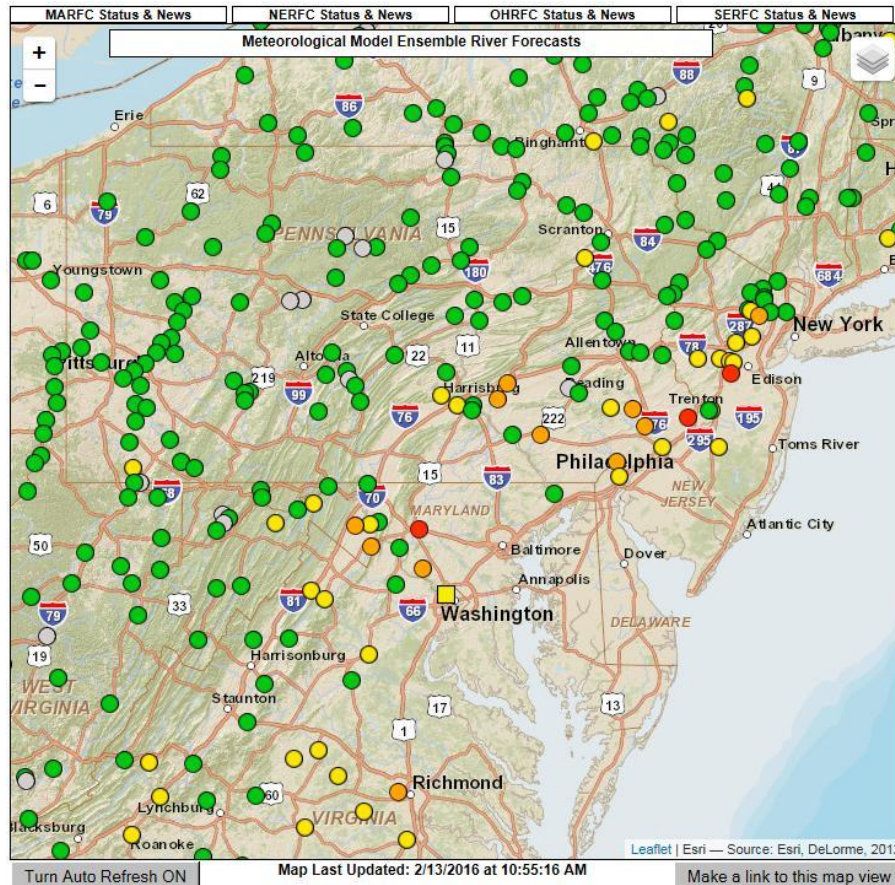
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# Flood Potential Feb 16-18

- **Heads up in case early preparations are needed: Possibility of flooding.**
- **Risk:** Minor Flooding possible across portions of the Mid-Atlantic. Isolated locations could even reach Moderate Flood levels. Too early to name specific river basins that may be impacted
- **Timing:** Best chance for flooding is Tuesday night and Wednesday, but flooding could occur as early as Tuesday afternoon or as late as Thursday.
- **Uncertainty:** High. Number of locations impacted and severity of flooding depends on temperature and locations of heavier rainfall. This depends heavily on the track of the storm. Parts of the region are expected to see mainly snow instead of rain, limiting runoff.
- **Note:** This briefing is for river flooding. There is a slight risk of localized Flash Flooding in some areas beginning Monday night. Poor drainage flooding is also possible during the period.

# Meteorological Model Ensemble River Forecasts (Potential River Levels)



Stay tuned: This map shows potential areas where we may see flooding. Since it is based on a forecasts of temperatures and precipitation 3 to 4 days from now, uncertainty is high and the predicted locations and severity of flooding will likely change over the next few days.

Chance of Exceedance		
30%	Level	70%
	Action	
	Minor Flood	
	Moderate Flood	
	Major Flood	
	= less than 30% chance of reaching Action level	
	= no critical levels defined for this point	

[www.weather.gov/erh/mmefc](http://www.weather.gov/erh/mmefc)

(above map based on 02/13/2016 00UTC NAEFS model)

# High Uncertainty

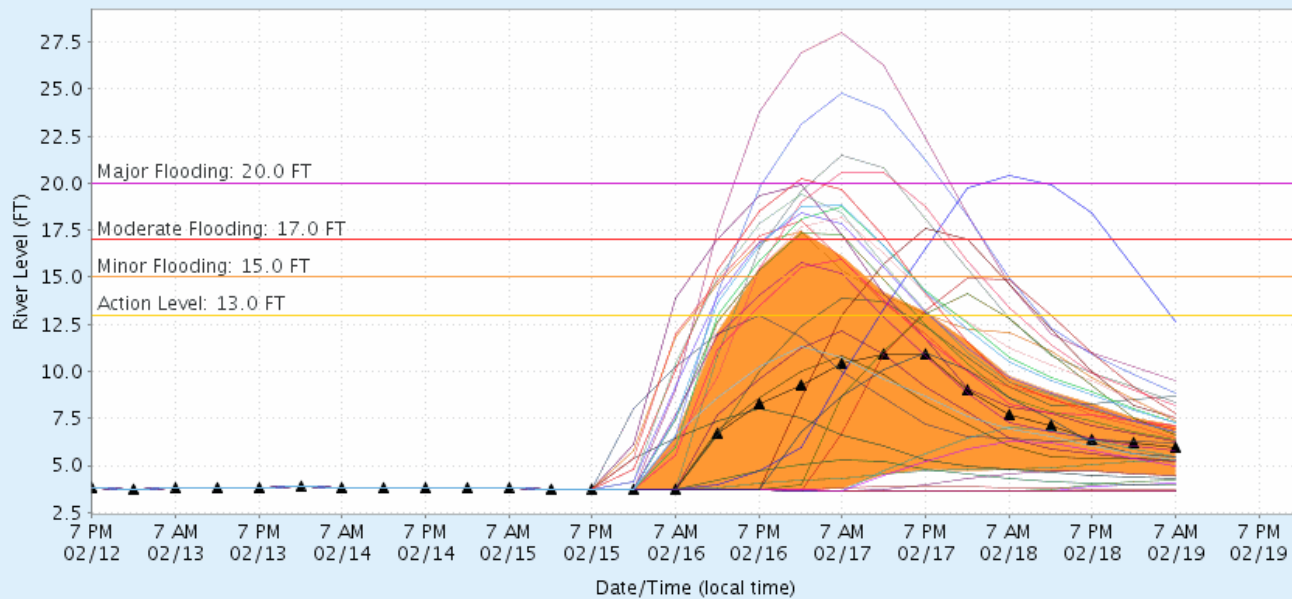


## 7 Day NAEFS River Level Simulations

Used to Estimate the Chance of Flooding and the Range of Possible River Levels  
Each Line Shows an Individual Model Simulation (42 Total)



### Monocacy River near Frederick, MD (FDKM2)

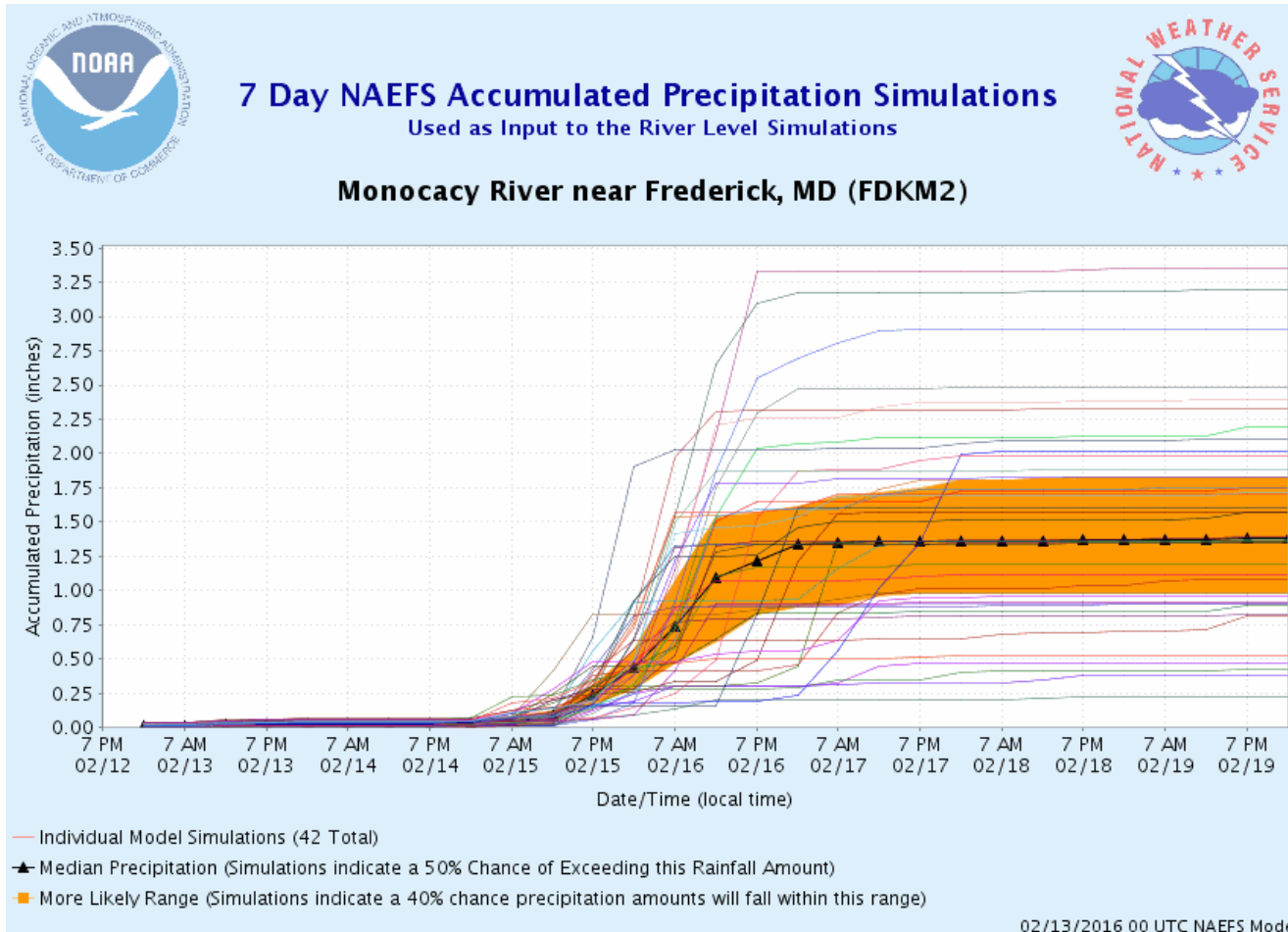


- Individual Model Simulations (42 Total)
- ▲ Median River Level (Simulations indicate a 50% Chance of Exceeding this Level)
- More Likely Range (Simulations indicate a 40% chance river levels will fall within this range)

02/13/2016 00 UTC NAEFS Model

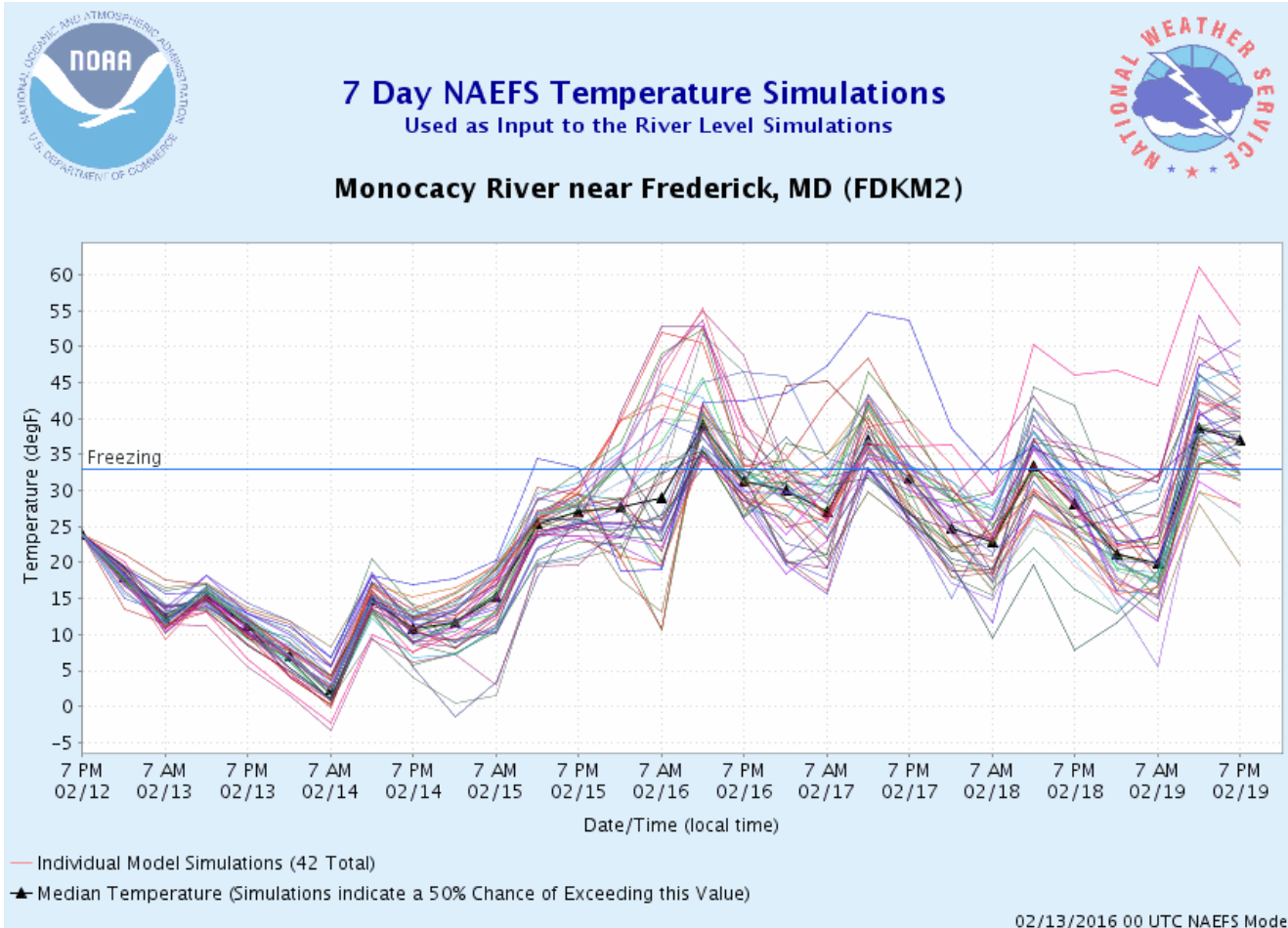
As an example, here is the forecast for the Monocacy river near Frederick, MD. Each trace represents a possible river level simulation. You see the river may not rise at all or may experience minor flooding. Some of the simulations even indicate moderate or major flooding but river levels that high are less likely. See next slides for an explanation of why the uncertainty is so high.

# Why is Uncertainty High?



First, we know that heavy rain is likely somewhere in the Mid-Atlantic, but we don't know exactly where. As an example, at Frederick MD, the precipitation could range anywhere from 0.25 inches to several inches.

# Why is Uncertainty High?



Second, at the time the precipitation is falling, mainly between 2/15 7PM and 2/16 7PM, we don't know how long temperatures will be below or above freezing. If the storm track is further west, more locations will see a longer period of warmer temperatures and rain. If the track is further east, more places will see a longer period of colder temperatures and snow.

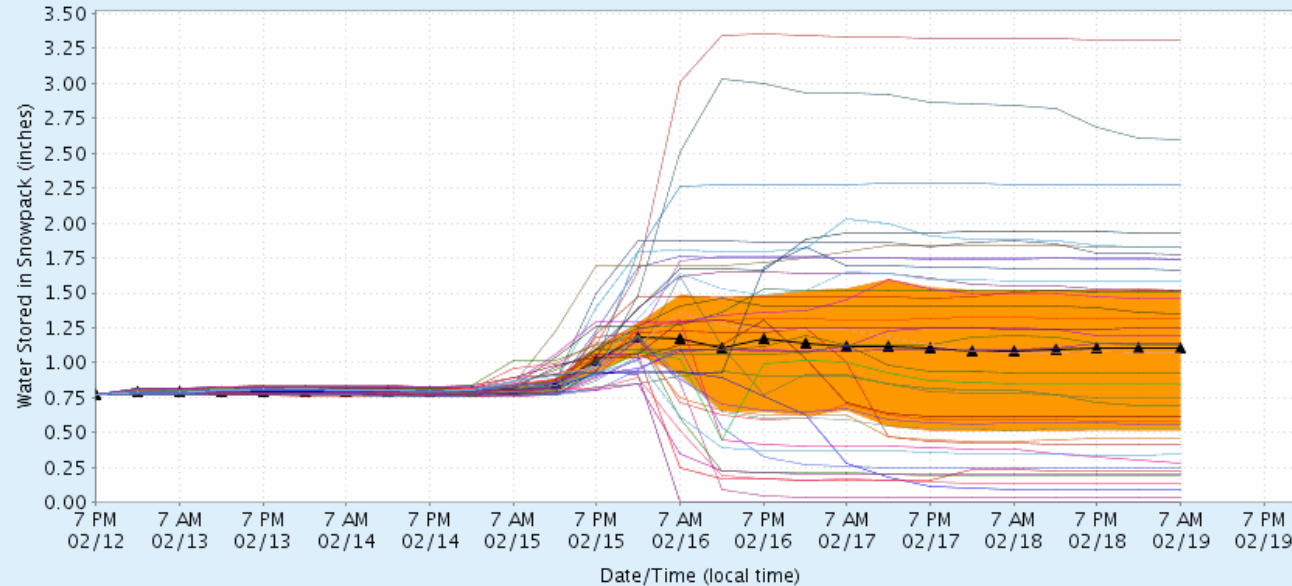
# Why is Uncertainty High?



## 7 Day NAEFS Simulated Stored Water in Snowpack Used as Input to the River Level Simulations



### Monocacy River near Frederick, MD (FDKM2)

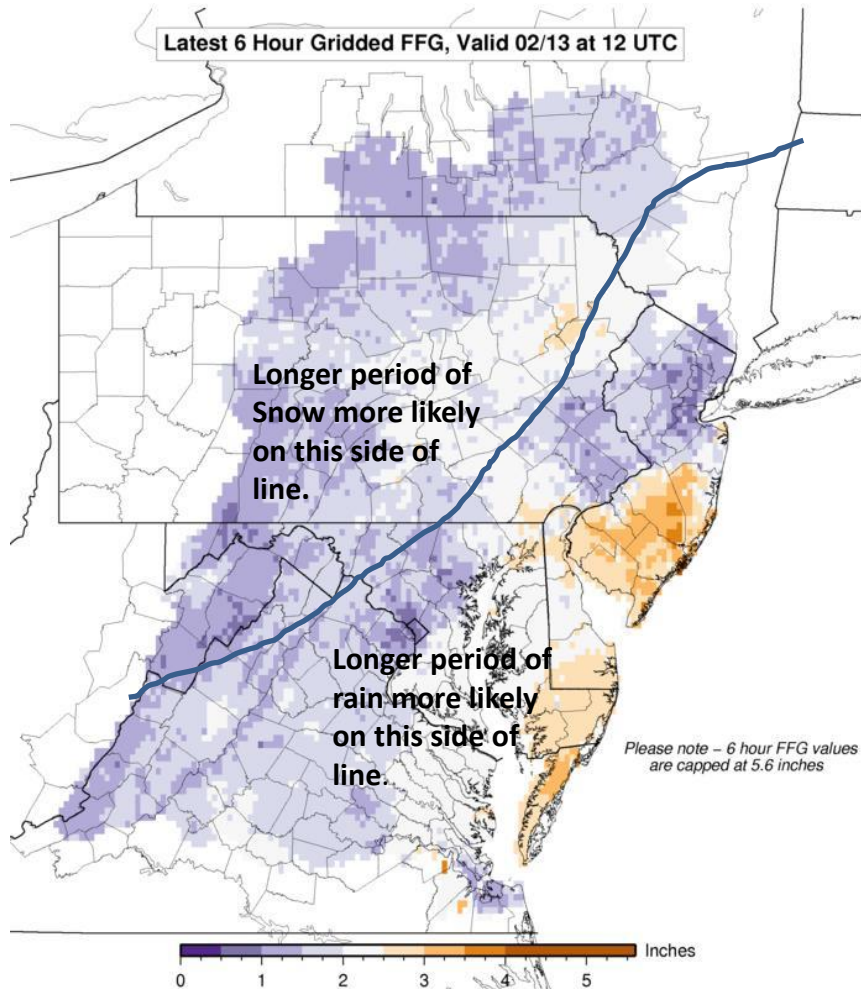


- Individual Model Simulations (42 Total)
- ▲ Median Estimate of Water Stored in Snowpack (Simulations indicate a 50% Chance of Exceeding this Value)
- More Likely Range (Simulations indicate a 40% chance Water Stored in Snowpack will fall within this range)

02/13/2016 00 UTC NAEFS Model

This graph shows simulations of the water in the snowpack. As you can see, some simulations indicate the precipitation falling more as snow (increases in water in snowpack) while others show the precipitation falling more as rain (decreases in the water in snowpack). This is tied closely to the track of the storm.

# Small Streams and Low Lying Areas



In more urbanized areas and areas with relatively wet soils (shades of purple on map), localized small stream and poor drainage flooding is possible. In some areas, as little as 0.5 inches of rain in six hours will be enough to cause some rapid rises and small stream flooding. Poor drainage flooding is also likely in areas that get heavy rain in a short amount of time.

However, uncertainty remains high, since most areas will see precipitation begin as snow and the timing of when and where rain begins depends highly on the track of the storm.



# Stay Tuned....

- To see plots showing the river flood potential for other locations:  
[www.weather.gov/erh/mmefs](http://www.weather.gov/erh/mmefs)
- To see the latest MARFC river forecasts and other hydrologic information:
- [www.weather.gov/marfc](http://www.weather.gov/marfc)

# Need more info?

- Contact your local NWS Weather Forecast Office
  - Binghamton, NY <http://weather.gov/bgm>
  - Blacksburg, VA <http://weather.gov/rnk>
  - Mt Holly, NJ <http://weather.gov/phi>
  - State College, PA <http://weather.gov/ctp>
  - New York City, NY <http://weather.gov/okx>
  - Sterling, VA <http://weather.gov/lwx>
  - Wakefield, VA <http://weather.gov/akq>
- Email: [peter.ahnert@noaa.gov](mailto:peter.ahnert@noaa.gov)

# Find MARFC Online at:

- Homepage: <http://weather.gov/marfc>
- Facebook: <https://www.facebook.com/US.NationalWeatherService.MARFC.gov>
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# Next MARFC Briefing

- **The next MARFC briefing will be issued Sunday around 1pm.**