

MASSACHUSETTS RIVER OVERVIEW



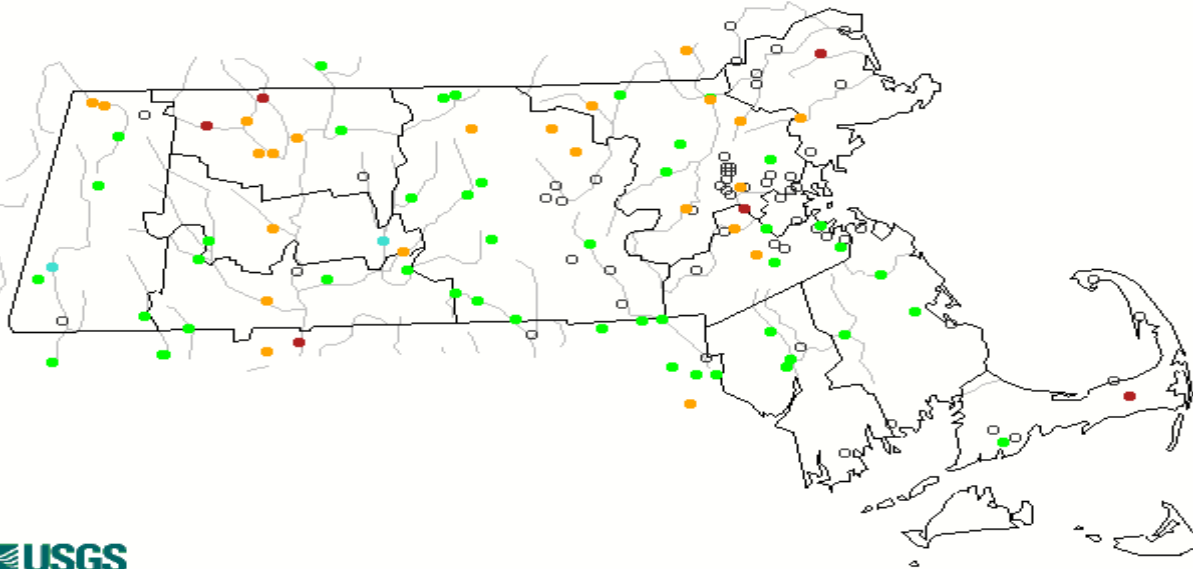
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Forecast Center
MA Drought Management
Task Force
7 December 2022

OUTLINE

- Snapshot of Massachusetts River Flows
- NERFC River Forecast Outlook
- Conclusions

MASSACHUSETTS RIVER FLOWS

Monday, November 07, 2022 11:30ET



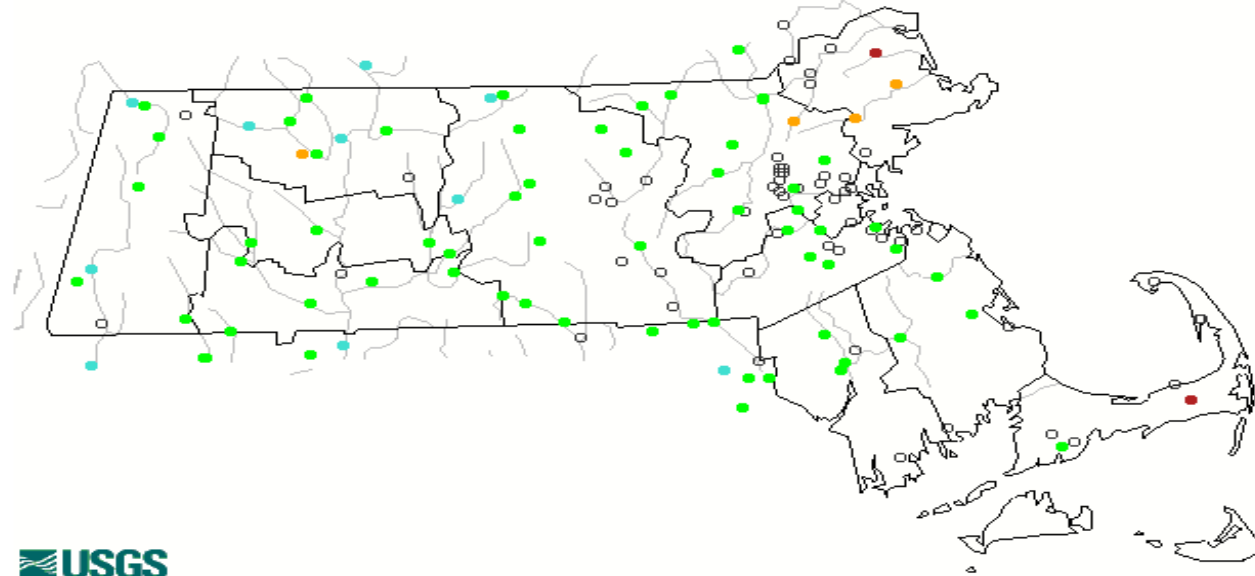
Search USGS streamgage

Choose a data retrieval option and select a location on the map

- List of all stations
 Single station
 Nearest stations
 Peak flow

Explanation - Percentile classes							
●	●	●	●	●	●	●	○
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Tuesday, December 06, 2022 11:30ET



Search USGS streamgage

Choose a data retrieval option and select a location on the map

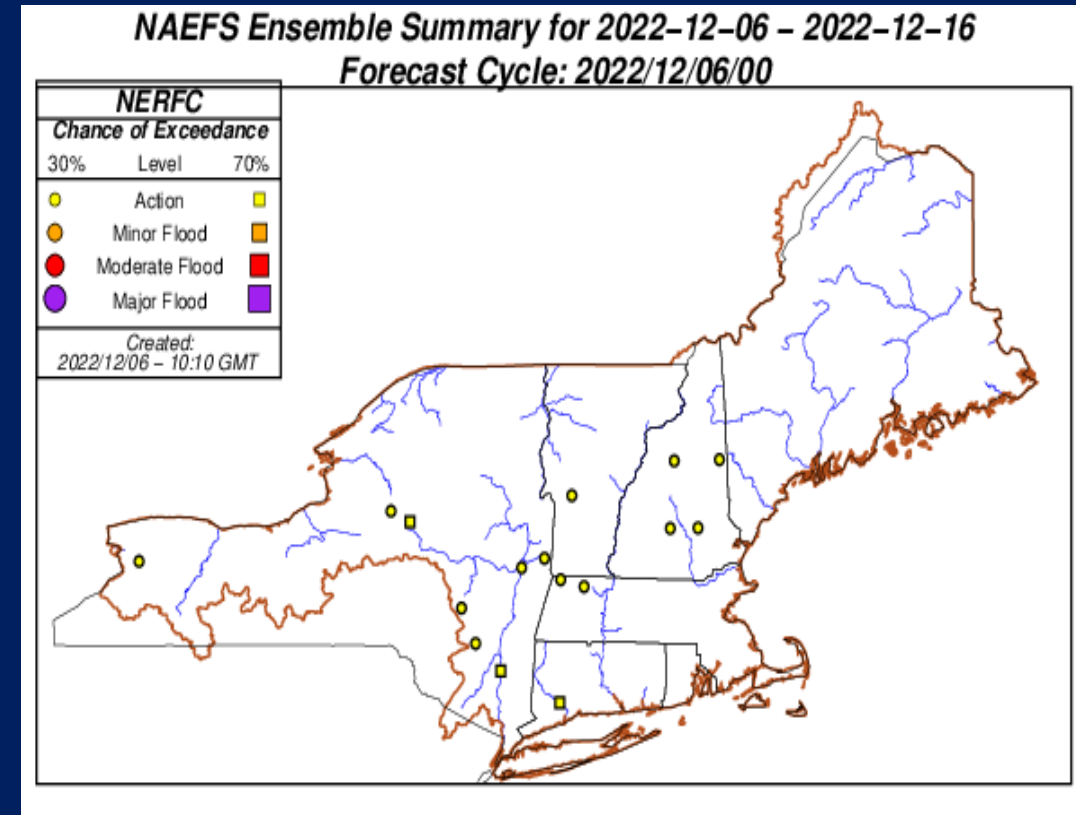
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River flows have improved across the Commonwealth over the last month aided by the loss of evapotranspiration. There are still some low flows in the persistent drought areas of Essex County and the elbow of Cape Cod.

NAEFS ENSEMBLE RIVER FORECAST OUTLOOK

- A 42 member ensemble run for all NERFC forecast points to give us an idea of the possible range of river flows out 10 days.
 - Basically 42 slightly different initial conditions in the weather models lead to 42 different river forecasts based on rainfall and temperature.
- Will show results for...
 - Charles River at Dover (DOVM3)
 - Shawsheen River at Wilmington (WLLM3)
 - North Nashua River at Fitchburg (FBGM3)
 - Hoosic River at Williamstown (WILM3)



NAEFS PCPN – DOVM3

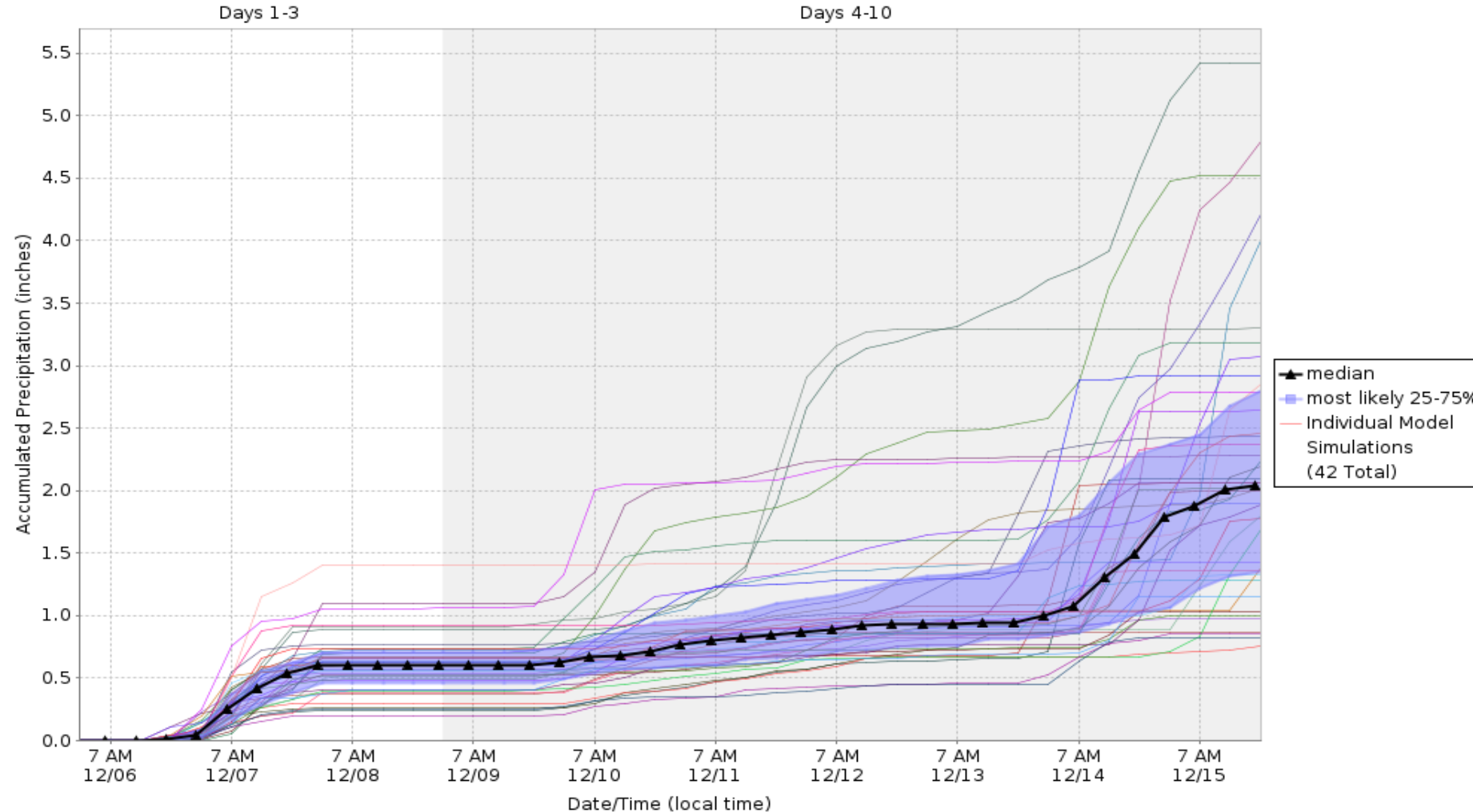
NAEFS - 10 Day Accumulated Precipitation Probabilities

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels



Dec 06 - Dec 16, 2022

Charles River at Dover, MA (DOVM3)



Moderate amounts of rainfall expected through tonight (+/- 0.50").

A more significant storm is possible next week.

NAEFS – DOVM3

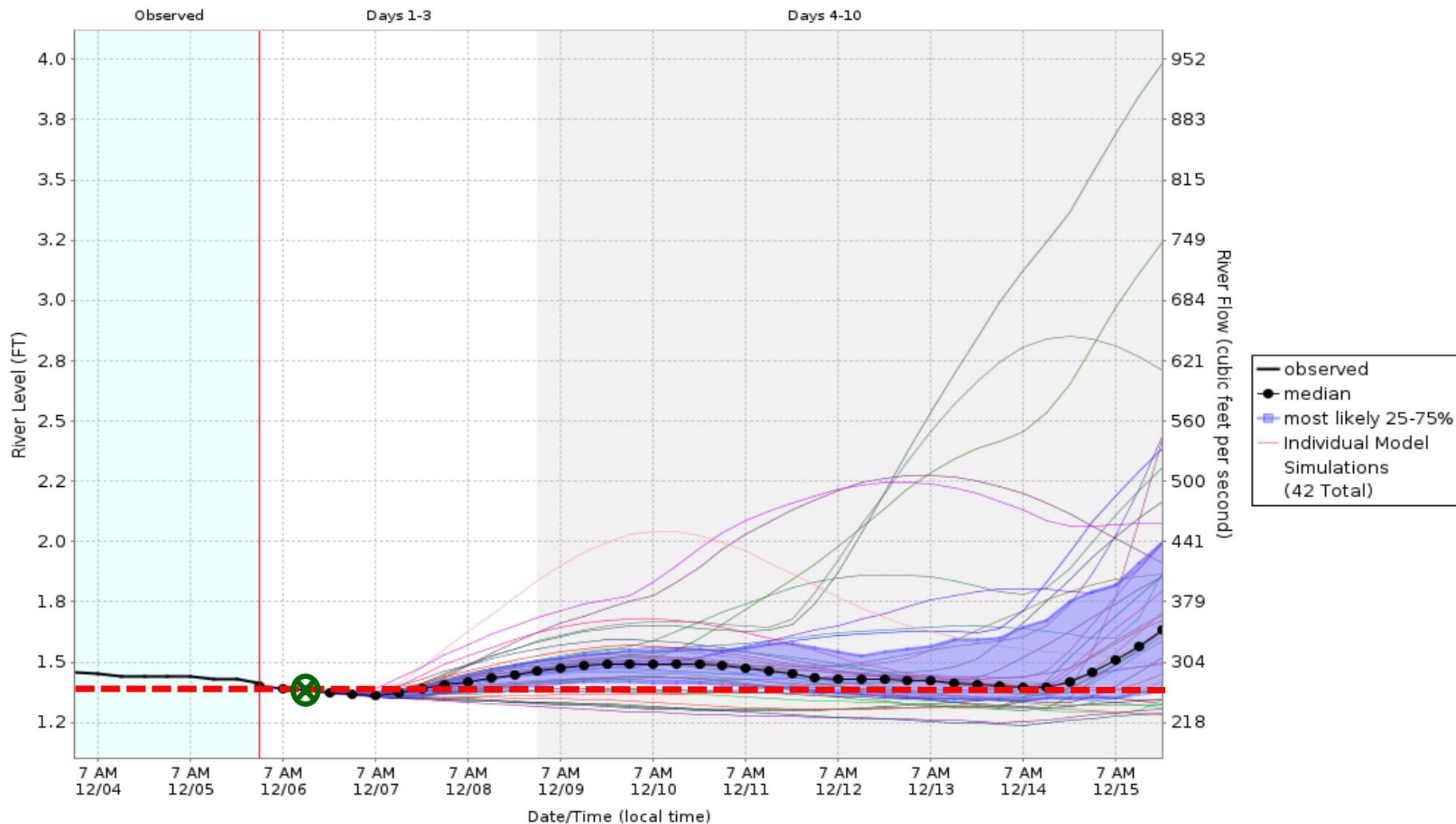
NAEFS - 10 Day River Level Probabilities

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels



Dec 06 - Dec 16, 2022

Charles River at Dover, MA (DOVM3)



Flows will likely stay at or above median levels (dashed red line) through the period.

NAEFS – WLMM3

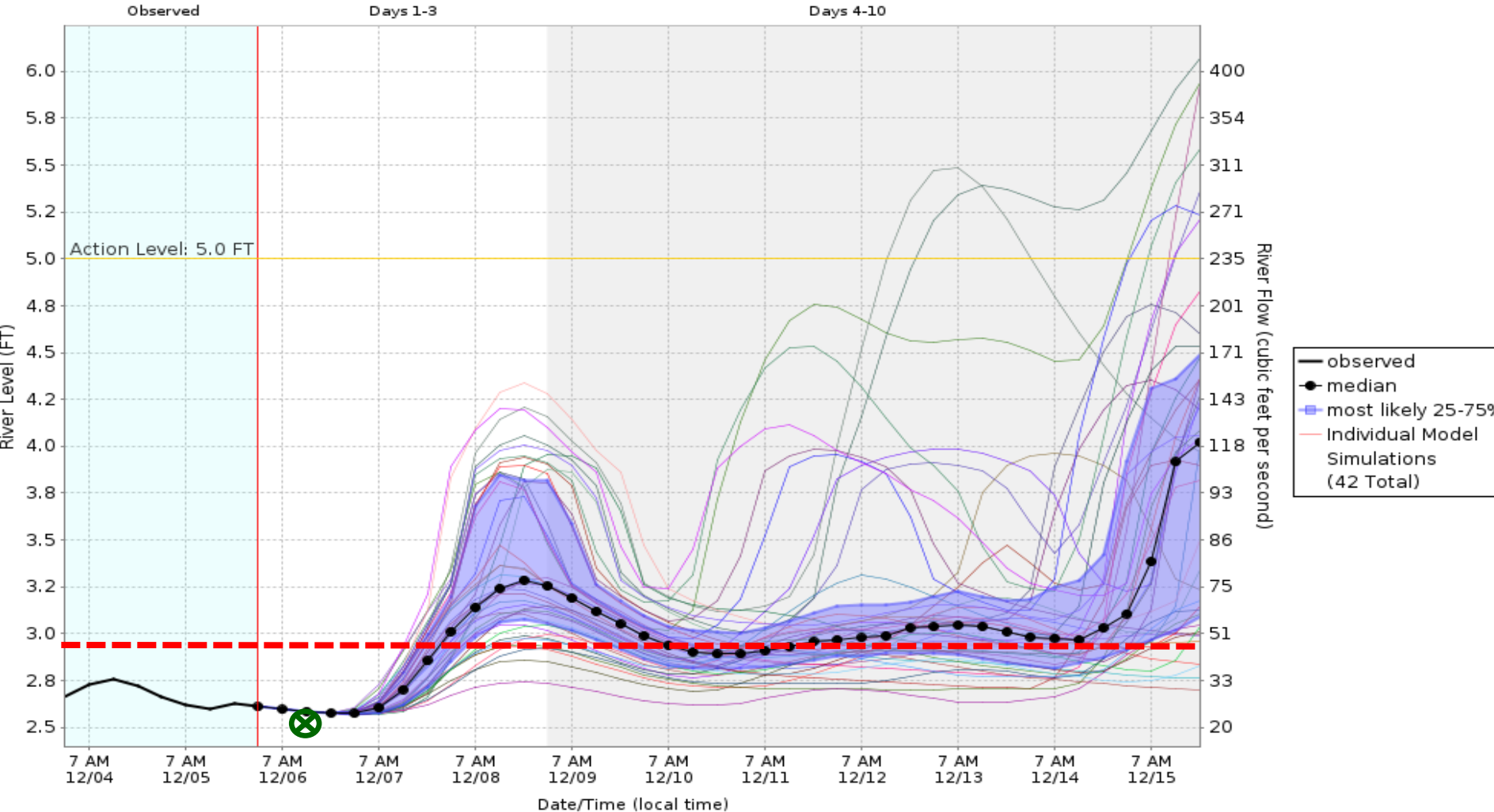


NAEFS - 10 Day River Level Probabilities

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Dec 06 - Dec 16, 2022

Shawsheen River at Wilmington, MA (WLMM3)



- Below normal flows will likely be replenished through next week.
- Significant rises possible mid-month

NAEFS – FBGM3

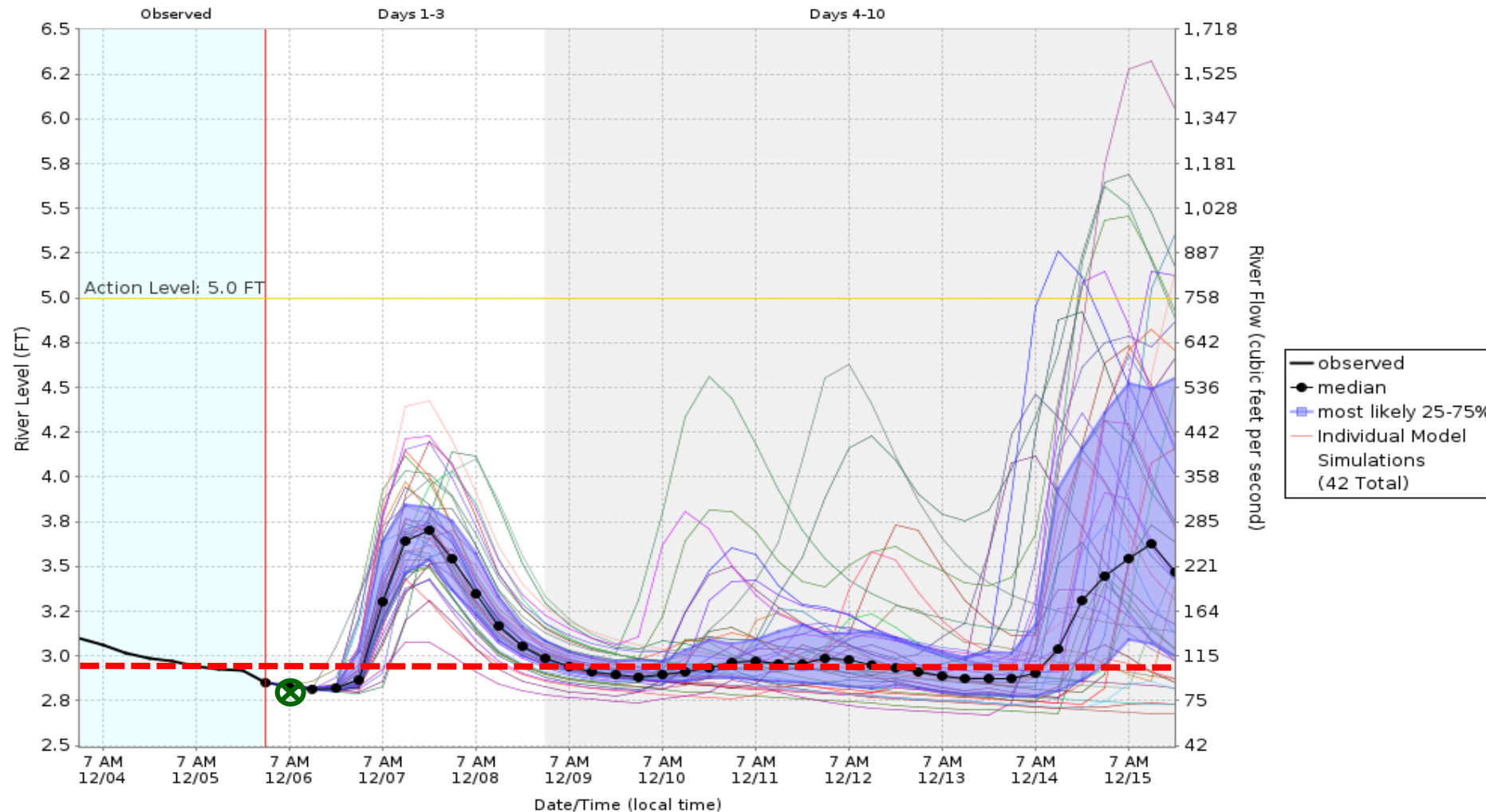


NAEFS - 10 Day River Level Probabilities

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Dec 06 - Dec 16, 2022

North Nashua River at Fitchburg, MA (FBGM3)



Nice agreement on the modest rise into tomorrow. A significant event could occur mid-month.

NAEFS PCPN – WILM3

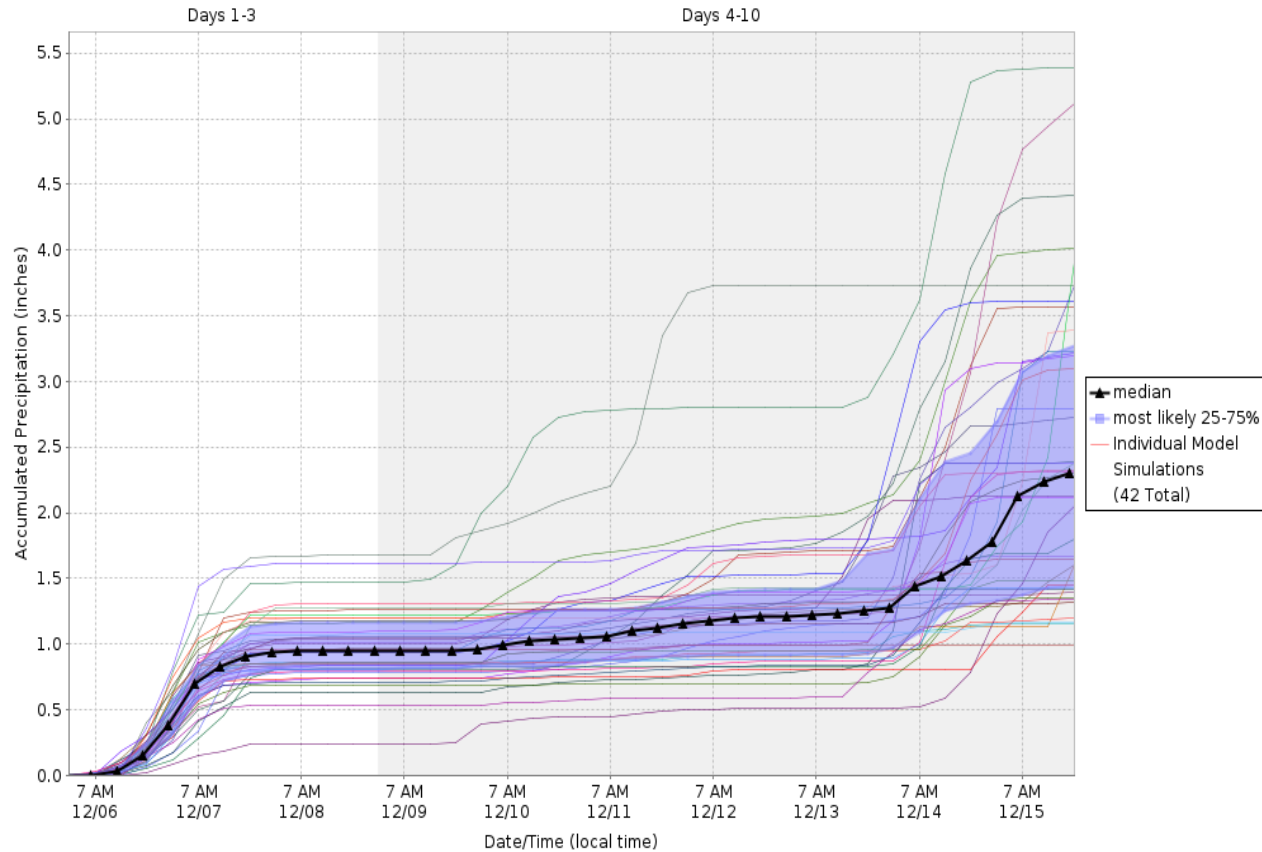


NAEFS - 10 Day Accumulated Precipitation Probabilities

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Dec 06 - Dec 16, 2022

Hoosic River at Williamstown, MA (WILM3)

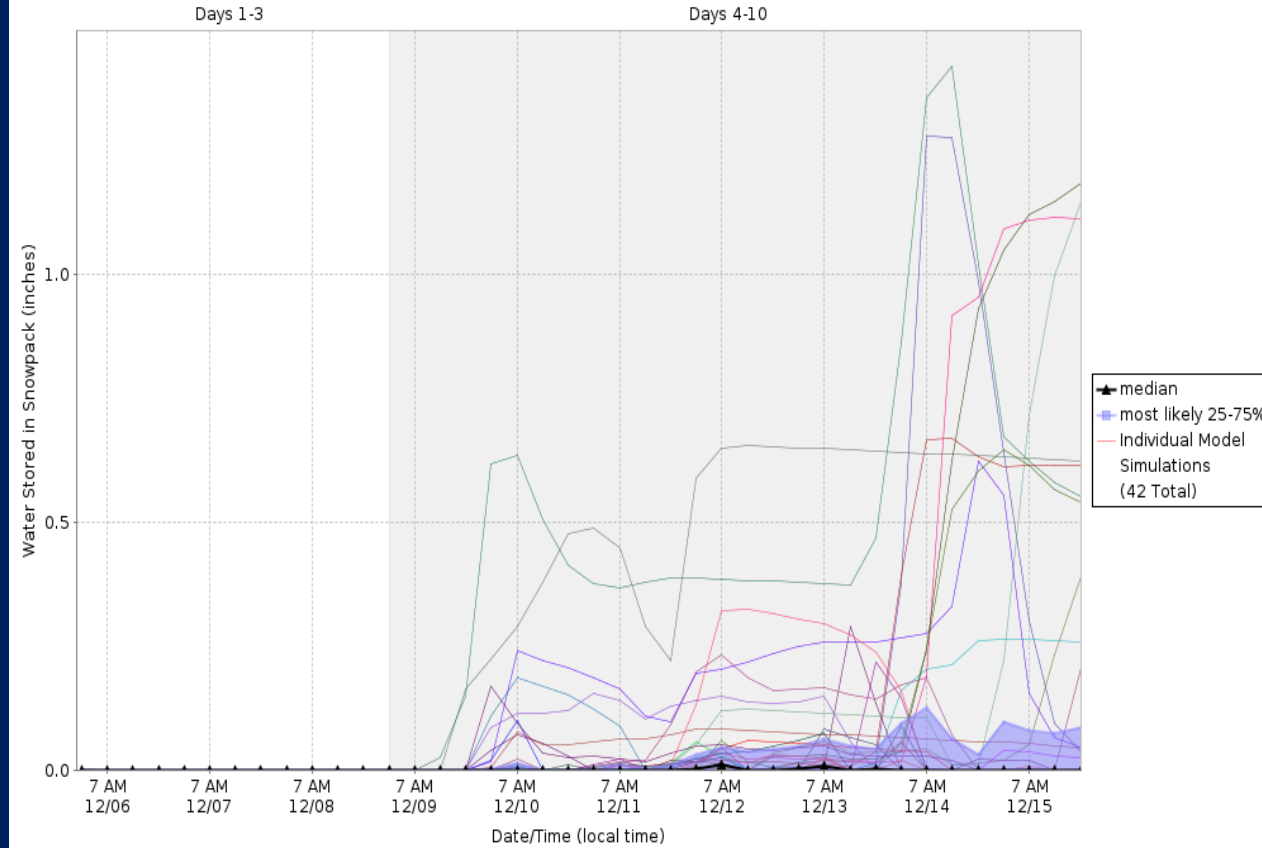


NAEFS 10 Day Simulated Stored Water in Snowpack

Based on North American Ensemble Forecast System Model Simulations
Used to Estimate the Range of Possible River Levels

Dec 06 - Dec 16, 2022

Hoosic River at Williamstown, MA (WILM3)



Good agreement on near or just under an inch of rainfall into tonight. Then a potential large storm mid-month (some ensembles 1-3") that has the potential to be rain or accumulating snow (image to right).

NAEFS – WILM3

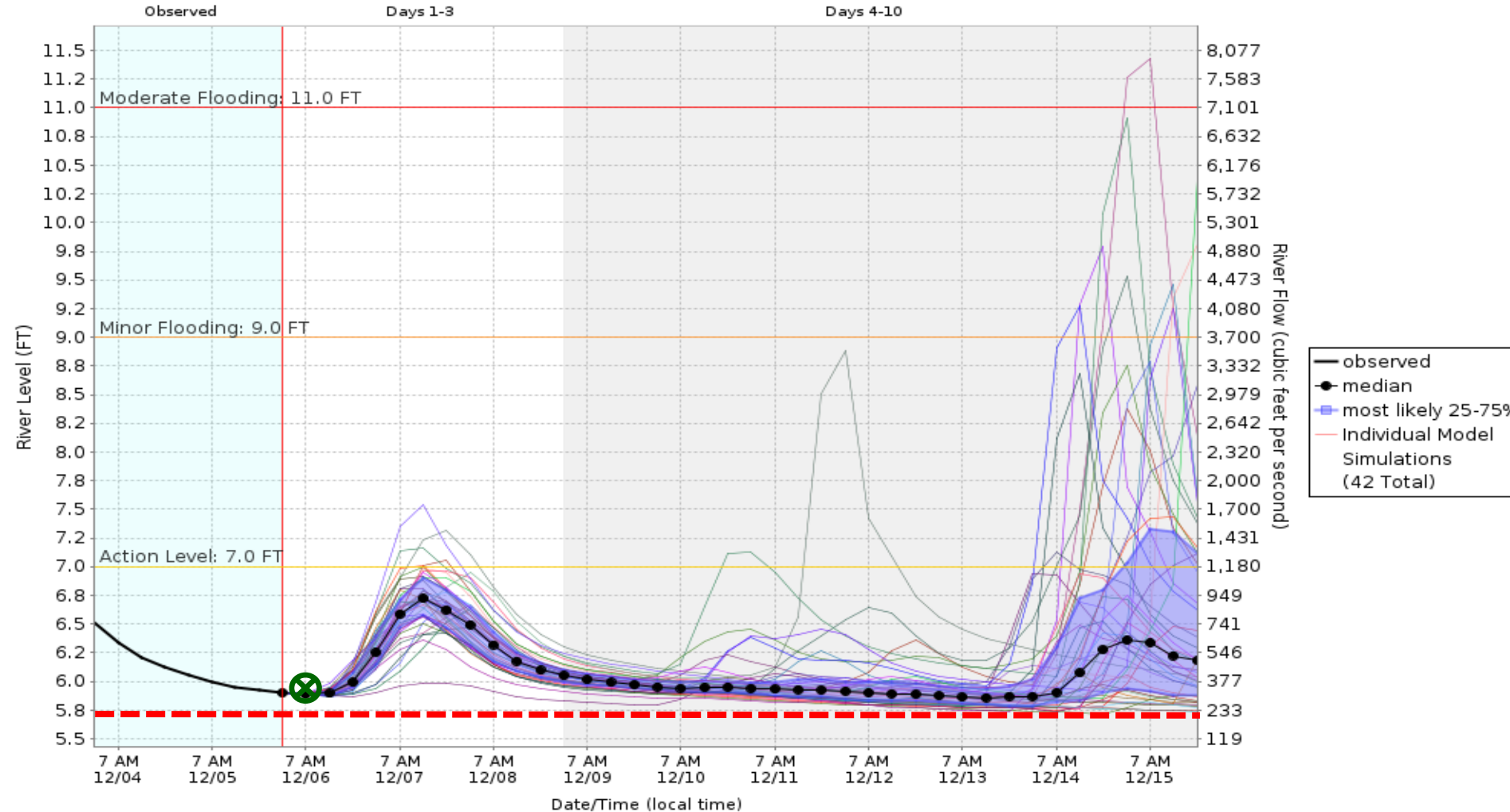
NAEFS - 10 Day River Level Probabilities

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Dec 06 - Dec 16, 2022

Hoosic River at Williamstown, MA (WILM3)



- If the significant event mid-month is all rain...almost 25 percent of the ensembles signal flooding

CONCLUSIONS

- River flows have improved over the last month across the Commonwealth with most watersheds now experiencing near to above normal flows.
- There are still some below normal flows in the persistent drought areas of Essex County and the elbow of Cape Cod.
- Modest rainfall will increase flows a bit this week. There is a possibility for significant rises during mid-December but a portion of that storm could end up being snow depending on its eventual track.

[weather.gov/nerfc](https://www.weather.gov/nerfc)