



MASSACHUSETTS RIVER OVERVIEW



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MA Drought Management
Task Force

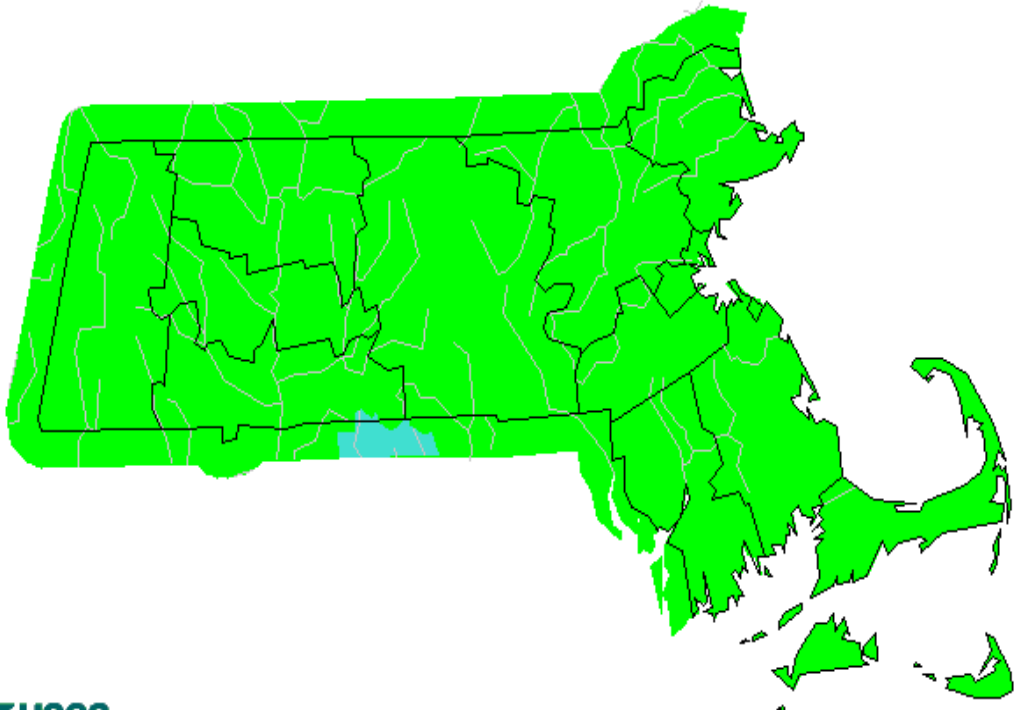
08 October 2024

OUTLINE

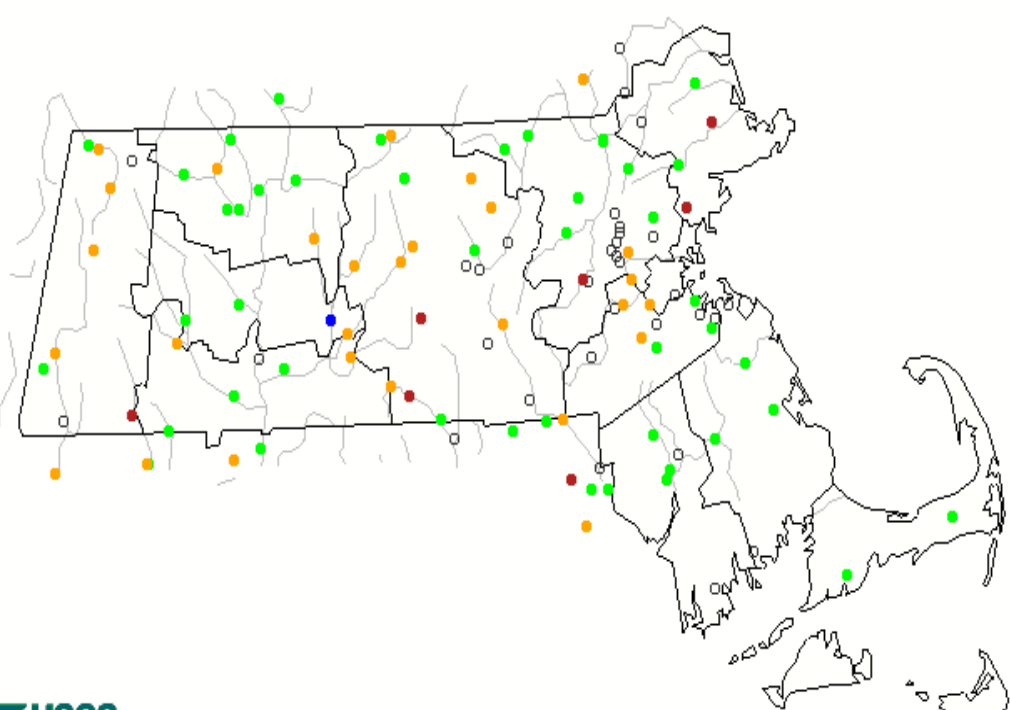
- Snapshot of Massachusetts River Flows
- NERFC River Forecast Outlook Focus – Northeastern Massachusetts.
- Brief look at streamflow locations in Central and Western Massachusetts.
- Conclusions

MASSACHUSETTS RIVER FLOWS

Sunday, September 01, 2024



Monday, September 30, 2024



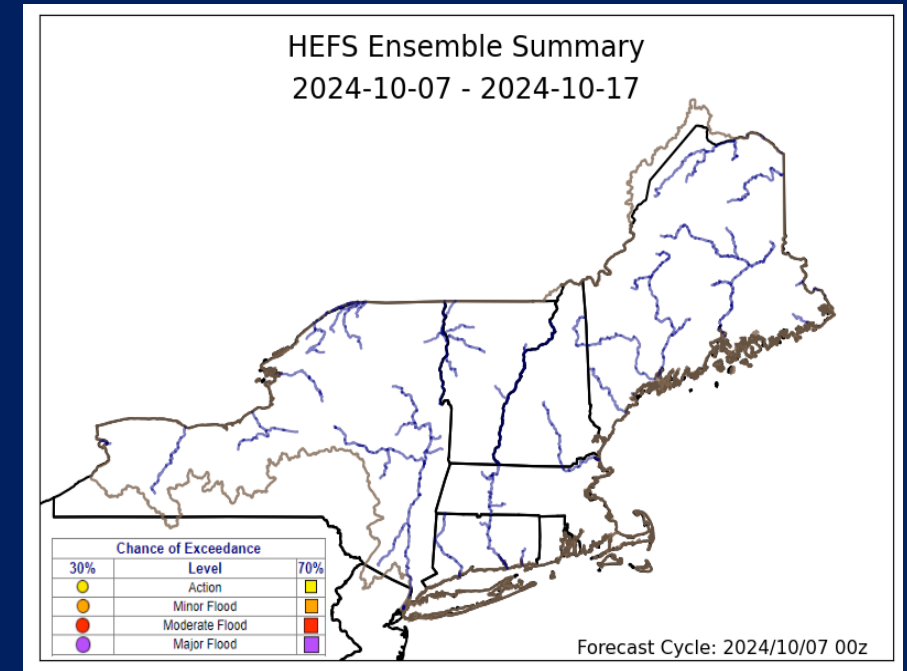
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

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During September 2024...flows relative to normal have decreased across the state especially in western and central portions where September precipitation departures were generally 3 to 4 inches below normal.

HEFS ENSEMBLE RIVER FORECAST OUTLOOK

- A multimember ensemble run for all NERFC forecast points to give us an idea of the possible range of river flows out 10 days.
 - Basically slightly different initial conditions in the weather models lead to different river forecasts based on rainfall and temperature.
- Will show results for...
 - Shawsheen River at Andover (ANDM3)
 - Sudbury River at Saxonville (SAXM3)
 - North Nashua River at Fitchburg (FBGM3)
 - Housatonic River at Great Barrington (GTBM3)



HEFS RAINFALL – SAXM3

HEFS - 10 Day Accumulated Precipitation Probabilities

Based on Hydrologic Ensemble Forecast Service Model Simulations
Used to Estimate the Range of Possible River Levels

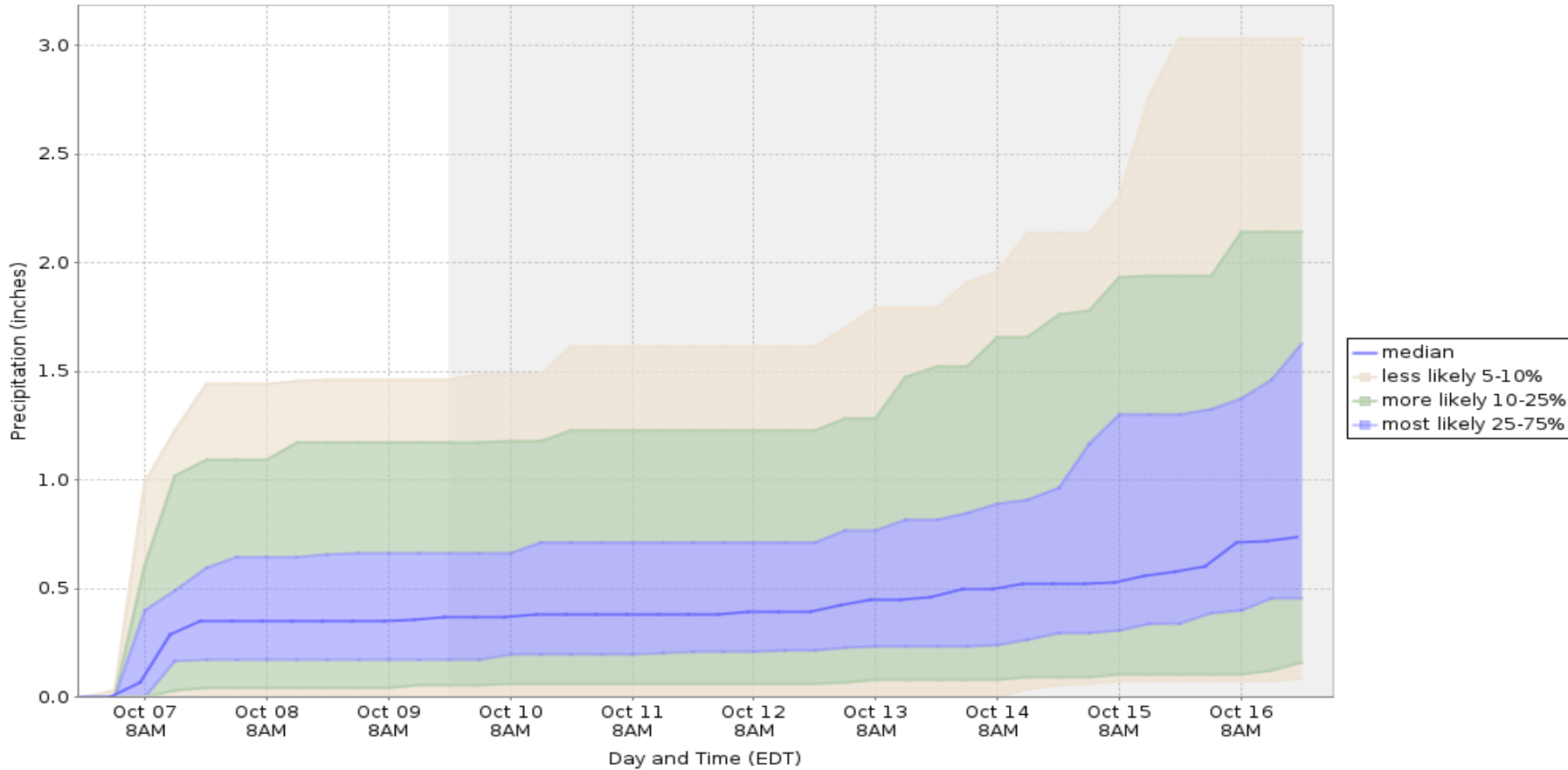


Oct 07 - Oct 17, 2024

Sudbury River at Saxonville, MA (SAXM3)

Days 1-3

Days 4-10



Model runtime: 08:00 PM EDT Oct 06 2024
Northeast River Forecast Center

Over the next 10 days...median forecast rainfall is low (0.4 inch).

There is spread noted in the ensemble precipitation heading into next week.

HEFS – SAXM3

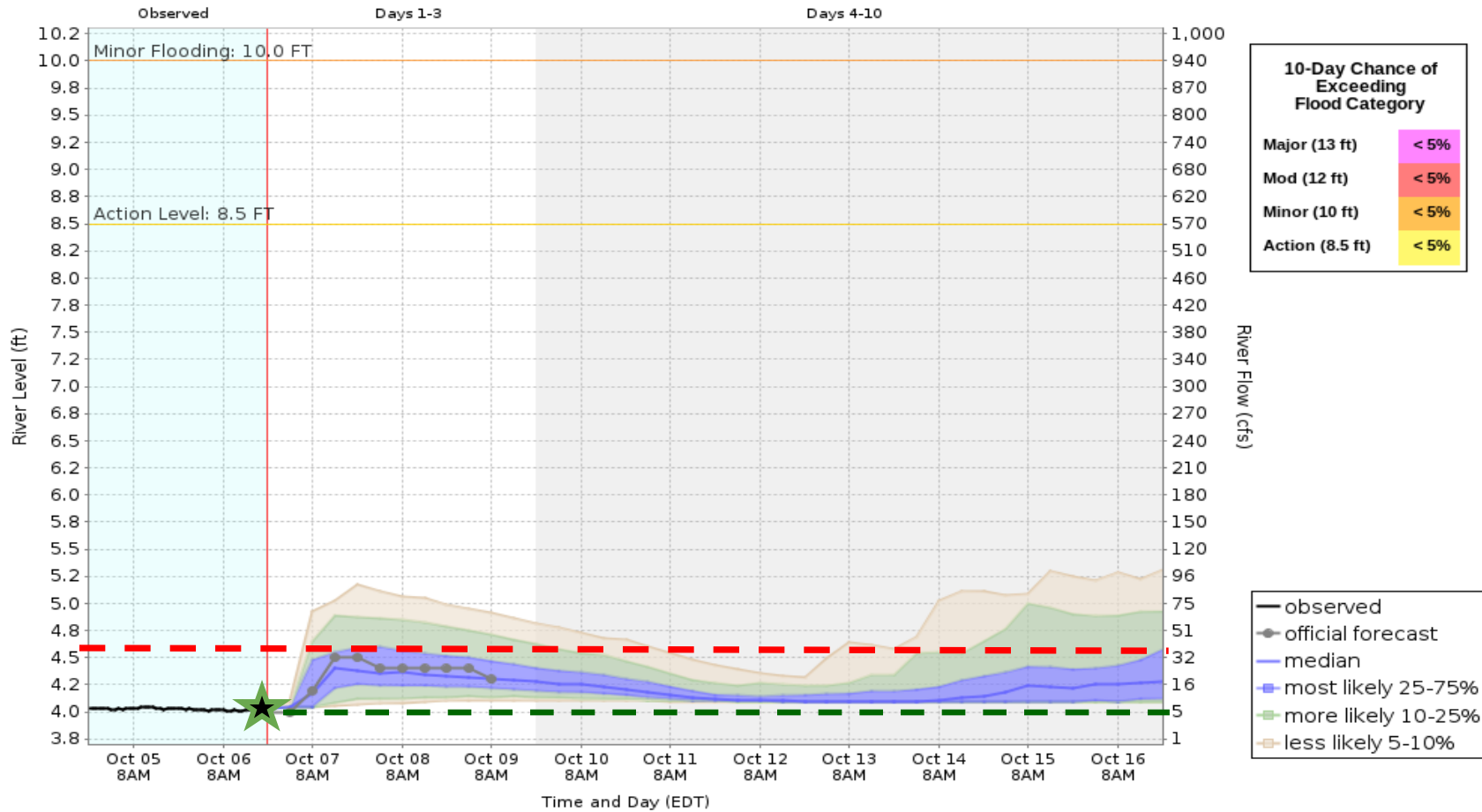
HEFS - 10 Day River Level Probabilities

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Oct 07 - Oct 17, 2024

Sudbury River at Saxonville, MA (SAXM3)



Model runtime: 08:00 PM EDT Oct 06 2024
Northeast River Forecast Center

> River flows are forecast to generally remain below median mid October levels (red dashed line). Some of the ensemble members show increases next week.

> Ensemble members maintain river flows slightly above minimum mid October levels (green dashed line) over the next 10 days.

HEFS RAINFALL – ANDM3

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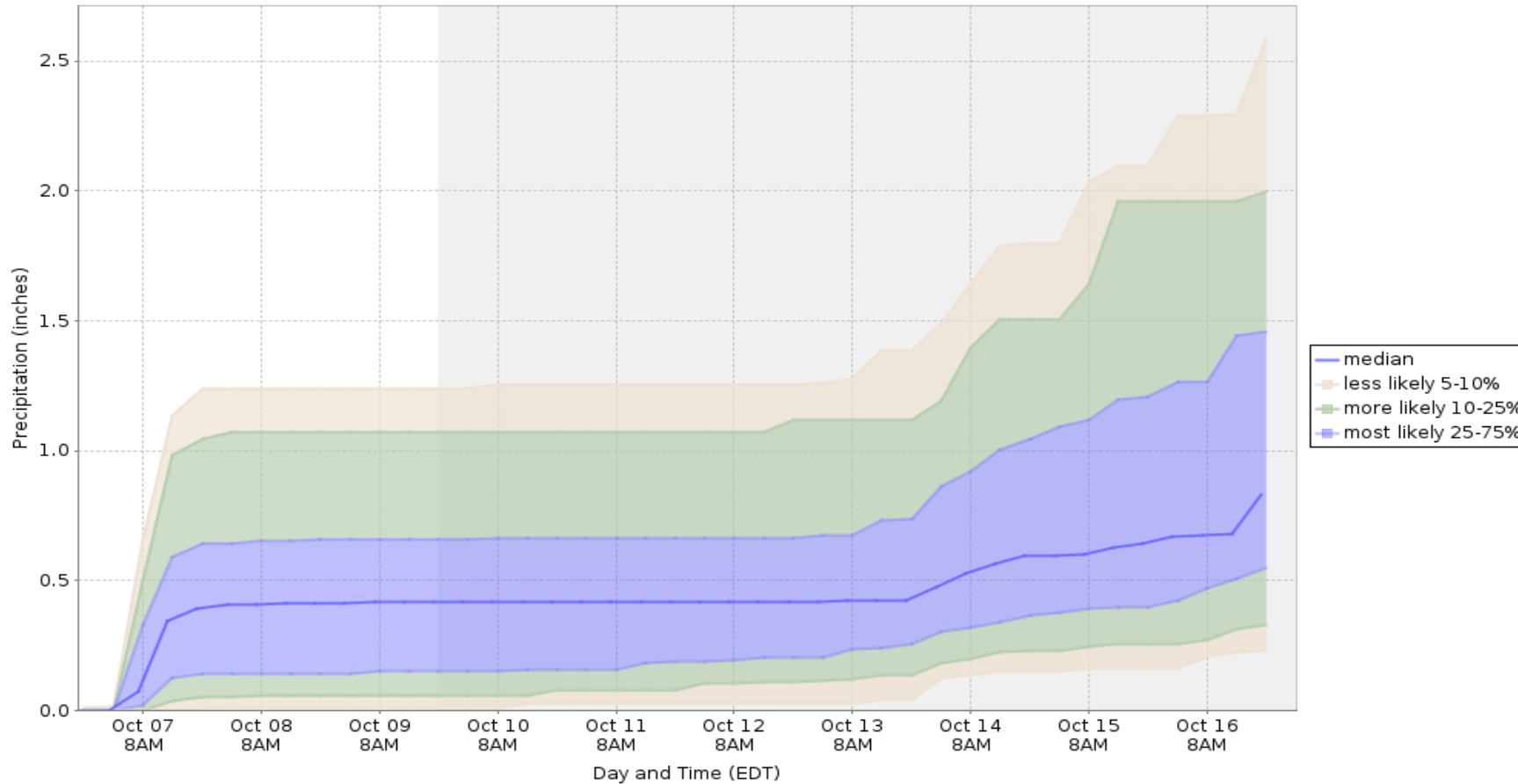


Oct 07 - Oct 17, 2024

Shawsheen River at Andover, MA (ANDM3)

Days 1-3

Days 4-10



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Northeast River Forecast Center

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HEFS – ANDM3

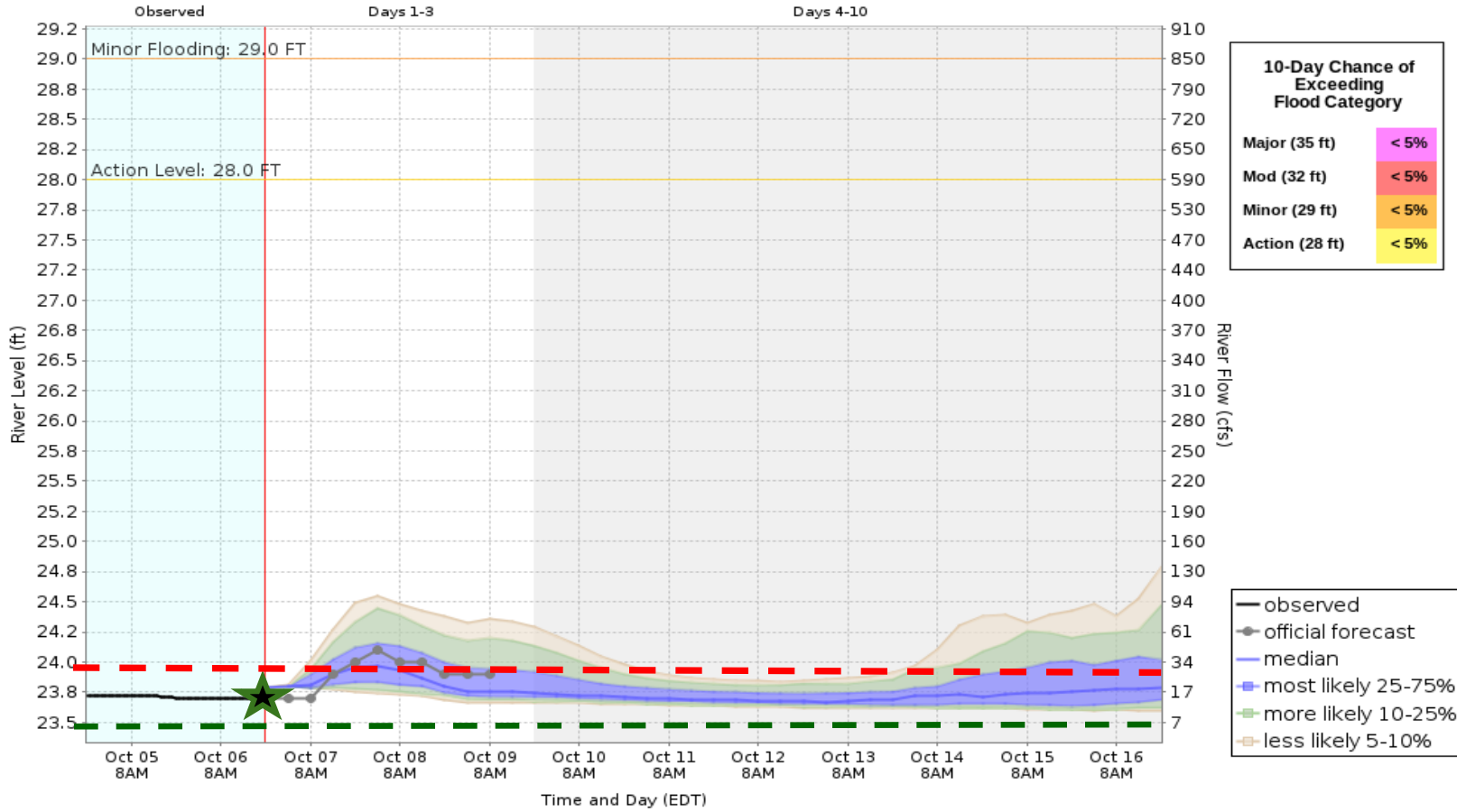
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> Ensemble members maintain river flows just above minimum mid October levels (green dashed line) over the next 10 days.

HEFS RAINFALL – FBGM3

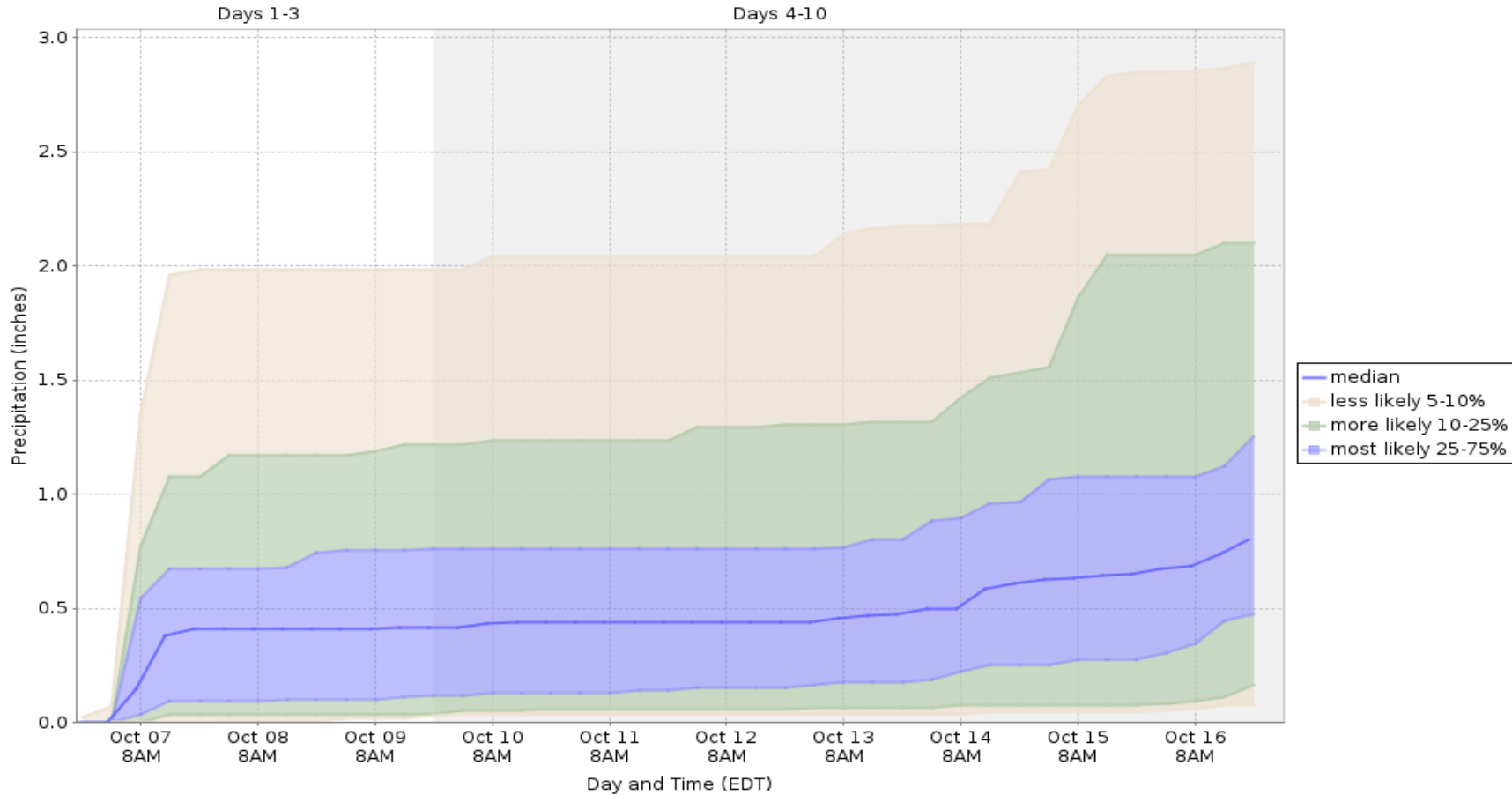
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Oct 07 - Oct 17, 2024

North Nashua River at Fitchburg, MA (FBGM3)



Model runtime: 08:00 PM EDT Oct 06 2024
Northeast River Forecast Center

Over the next 10 days...median forecast rainfall is low (0.4 inch).

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HEFS – FBGM3

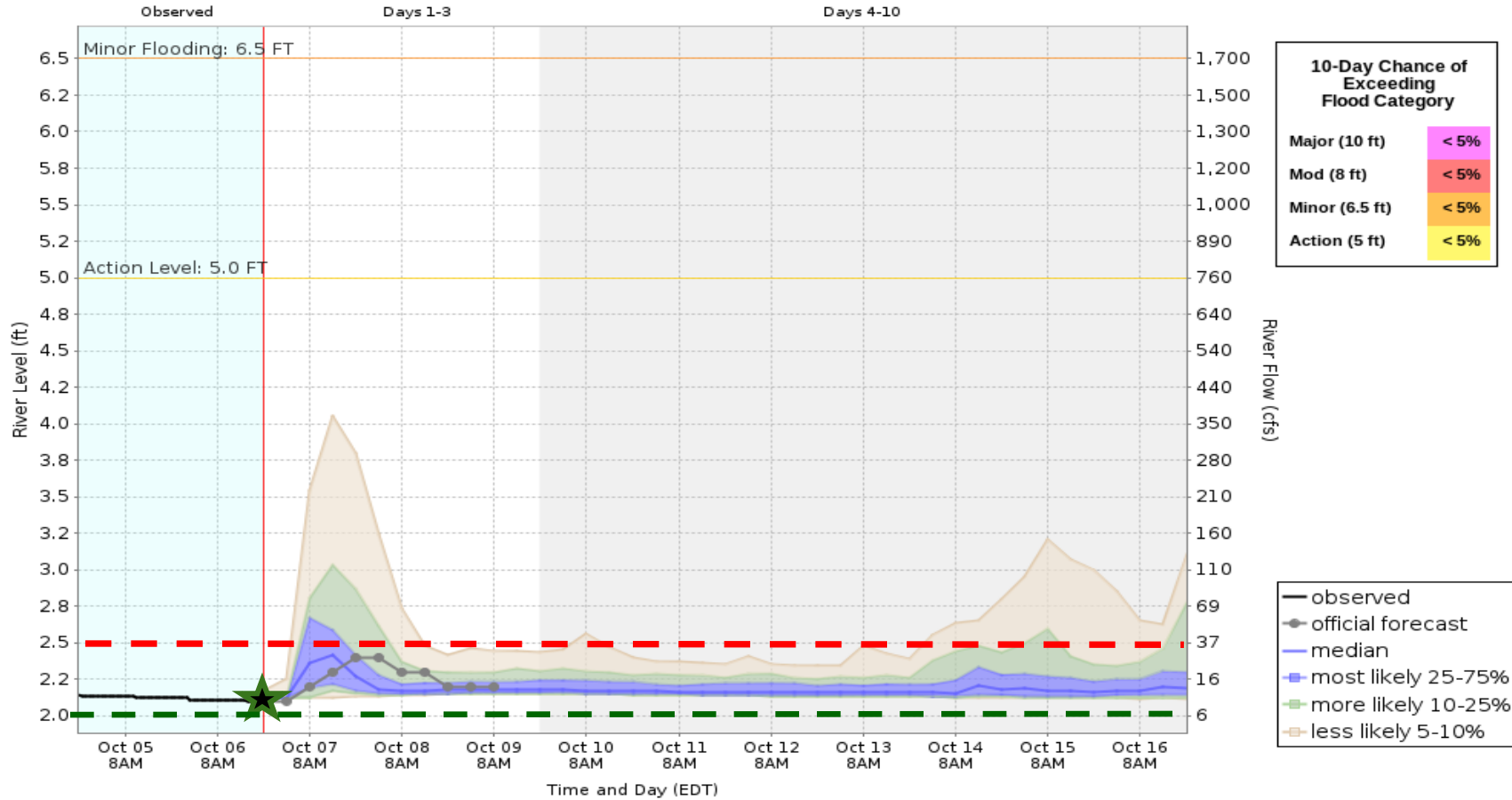
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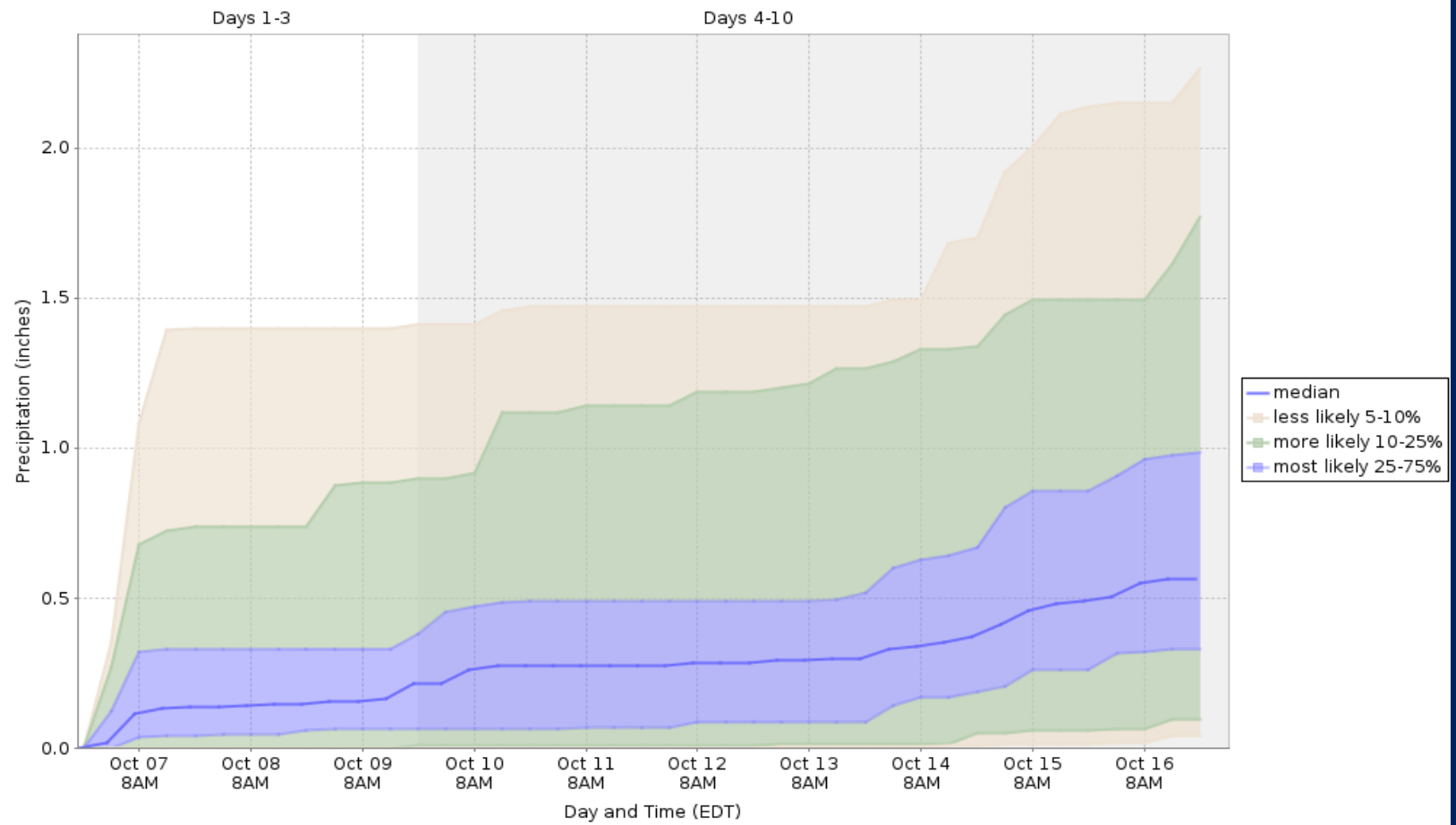
HEFS – GTBM3



HEFS - 10 Day Accumulated Precipitation Probabilities

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Oct 07 - Oct 17, 2024
Housatonic River at Great Barrington, MA (GTBM3)



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Northeast River Forecast Center

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HEFS – GTBM3

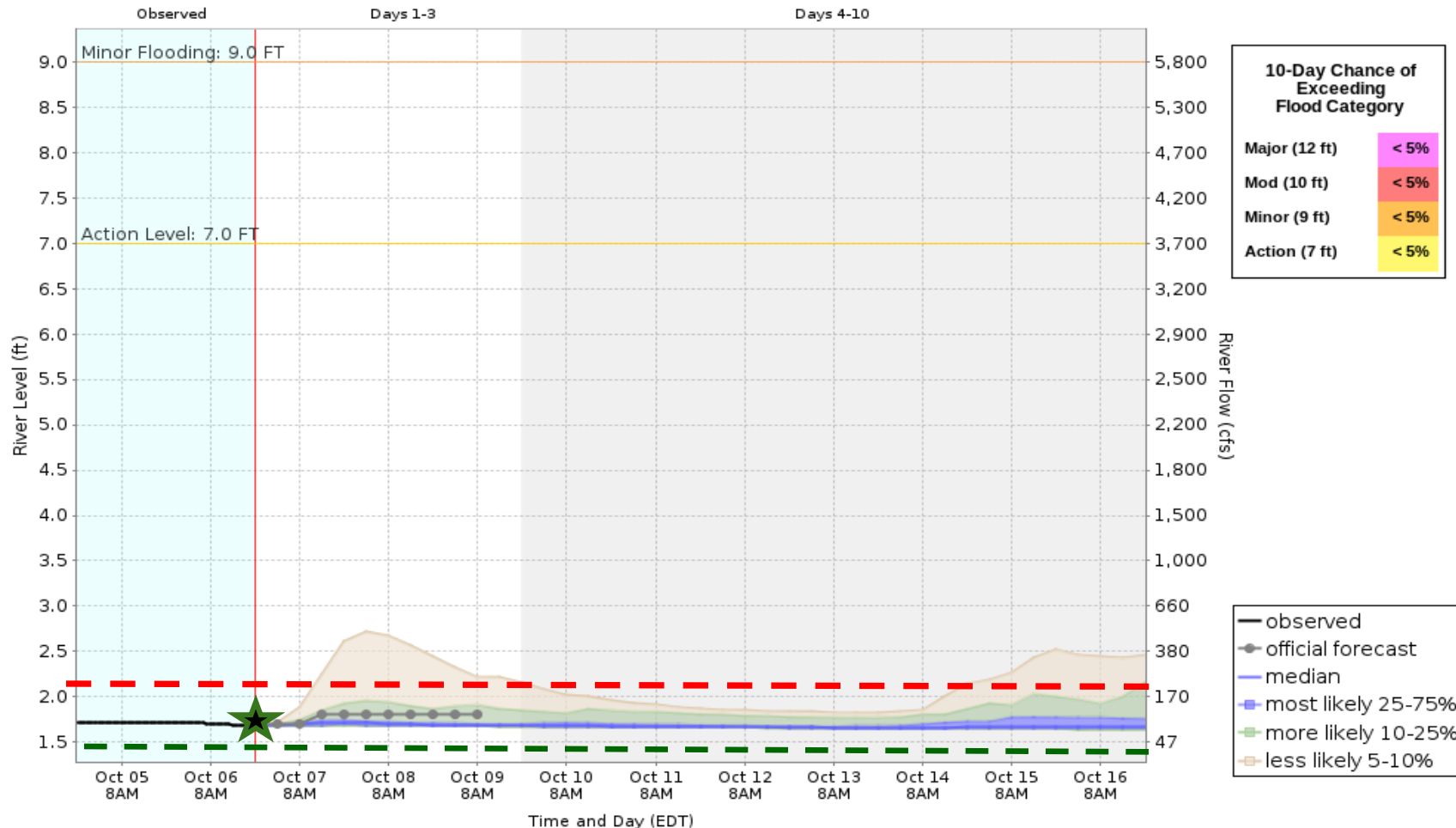
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CONCLUSIONS

- During September...river flows across most of the Commonwealth have decreased. Below normal to some near normal stream flows are observed across the state. Pockets of well below normal flows less than 10 percent of normal for late September were observed.
- The lowest stream flows were found over portions of Essex...Middlesex and Norfolk counties in Eastern Massachusetts...portions of Worcester County in Central Massachusetts and portions of Western Massachusetts especially Berkshire County.
- The weather pattern looks generally quiet over the next several days. Ensemble data indicates the possibility for some rainfall mainly next week but with some significant spread. As a result...the NERFC river forecast ensembles call for some brief rises but with the general trend for nearly steady or receding rivers and streams over the next 10 days.

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