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Service Change Notice 21-24 Updated
National Weather Service Headquarters Silver Spring MD
1040 AM EDT Fri Mar 19 2021

To: Subscribers:
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From: Jeffrey Craven
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 Meteorological Development Laboratory

Subject: Updated: Modifying the NBM's Quantile Mapping and Dressing (QMD) Grand Ensemble Mean (GEM) Deterministic QPF for the CONUS, Alaska and Puerto Rico Domains; and Minor Corrections Made to the NBM QMD QPF, Present Weather, AK Fire Weather, and Text Message Products: Effective March 29, 2021

Updated to reflect the new implementation date of March 29, 2021 due to Critical Weather Day.

Effective on or about Monday, March 29, 2021, beginning with the 1200 Coordinated Universal Time (UTC) model run, the NWS National Centers for Environmental Prediction (NCEP) Central Operations (NCO) will implement an update to the National Blend of Models (NBM) guidance over the contiguous U.S. (CONUS) and outside the CONUS (OCONUS) (Alaska, Hawaii, Puerto Rico) National Digital Forecast Database (NDFD) domains.

In the event that NWS declares the implementation date a Critical Weather Day (CWD) or NWS anticipates significant weather may occur, implementation of this change will occur at 1200 UTC on the next weekday not declared a CWD and when no significant weather is occurring.

Stakeholders including NCEP's Weather Prediction Center (WPC) and River Forecast Centers (RFCs) have expressed concern that routine NBM GEM Quantitative Precipitation Forecasts (QPF) have a high bias, especially on the lighter QPF events. Verification suggests that using a 35 percent weight of the 50th percentile (median) for projections 43-53 hours (along with weights of 40 percent GEM, 5 percent RAP, 5 percent NAM, and 15 percent NAMNest) and an equal 50/50 blend of GEM and median beyond 53 hours would mitigate these bias issues (similar to NBM v3.2 configuration). In light of these recent verification results, the NBM has made these science modifications and intends to update NBM v4.0 with these changes in this forthcoming implementation.

Additional NBM corrections in this forthcoming implementation update include:

(1) Precipitation intensity inside the NBM Predominant Weather grids will

now support all possible intensity ranges and not just the category of "light."

(2) QMD software now correctly calculates the QPF Trimean and Modified Trimean guidance.

(3) NWS is now correctly populating all NBM text bulletin guidance for the site of Lanai, HI, (PHNY). Before this fix, NBM guidance (sans the wave height guidance) for the station Hannagan Meadow, AZ was incorrectly populating PHNY's text bulletin.

(4) The Fire Weather product suite (mixing height, transport wind, etc.) in the Alaska domain is now properly ingesting synoptic-time HRRR run data (0000, 0600, 1200 and 1800 UTC).

Please direct questions, comments or requests regarding this implementation to the contacts below:

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For questions regarding the dataflow for NWS/NCEP services, please contact:

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A webpage describing the NBM can be found at:

http://www.weather.gov/mdl/nbm_home

National Service Change Notices are online at:

<https://www.weather.gov/notification>

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