

NOUS41 KWBC 261750
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Public Information Statement 20-48
National Weather Service Headquarters Silver Spring MD
150 PM EDT Fri Jun 26 2020

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From: Dr.Thomas Graziano
 Director, NWS Office of Water Prediction

Subject: Soliciting comments on the upgrade of the
 National Water Model to Version 2.1 through
 August 5, 2020

The NWS Office of Water Prediction (OWP) is proposing to upgrade the National Water Model (NWM) to Version 2.1 this winter. The NWS is seeking comments on this proposed upgrade through August 5, 2020. If approved, a Service Change Notice (SCN) will be issued at least 30 days before implementation of NWM V2.1 with more detailed information.

NWM V2.1 represents a major upgrade over V2.0, implemented in 2019. V2.1 contains several significant enhancements furthering model performance and coverage. Highlights include:

-First ever operational hydrologic model forecast coverage for Puerto Rico and the United States (US) Virgin Islands

-Expansion of streamflow modeling coverage to the Great Lakes Basin, allowing for a full accounting of inflow into the Great Lakes

-Enhanced treatment of reservoirs, with use of U.S. Geological Survey (USGS) and U.S. Army Corps of Engineers (USACE) data via a persistence methodology, and ingest of River Forecast Center (RFC)-supplied reservoir outflow

forecast data.

-New open-loop (non-data assimilation) model configurations to support interpretation and use of model forecasts

-Forcing improvements, including use of Multi-Radar Multi-Sensor version 12 (MRMS) Quantitative Precipitation Estimate (QPE) data over Hawaii and improved bias correction and downscaling of meteorological forcing over the Continental United States.

-Improvements to snow melt physics, model calibration, and code modularity

Publicly accessible NWM NetCDF files can be downloaded at:

<https://para.nomads.ncep.noaa.gov/pub/data/nccf/com/nwm/para/>

Adding to the details above, major alterations in the NWM output posted to PARA NOMADS include:

1) New NWM Configurations:

a) Puerto Rico and the US Virgin Islands

- i) Analysis
- ii) Analysis Forcing
- iii) Short-Range Forecast
- iv) Short-Range Forecast Forcing
- v) Open Loop Analysis
- vi) Open Loop Short-Range Forecast

b) Hawaii

- i) Open Loop Analysis
- ii) Open Loop Short-Range Forecast

c) Continental United States (CONUS)

- i) Open Loop Analysis
- ii) Open Loop Extended Analysis
- iii) Open Loop Long-Range Analysis
- iv) Open Loop Medium-Range Forecast

2) Expanded coverage within existing NWM streamflow and reservoir output files to include hydrologic guidance for the Great Lakes Drainage Basin

- 3) An increase in the output frequency of Medium-Range forecast streamflow from 3-hourly to hourly
- 4) An elimination of the 06Z and 18Z Hawaii Short-Range forecast cycles and reduction of forecast length from 60 to 48 hours (due to alterations in forcing data)
- 5) An increase in the frequency of Hawaii output from hourly to every 15 minutes

The NWS will evaluate all comments on NWM V2.1 to determine whether to proceed with this upgrade. Any questions, comments or requests regarding this implementation should be directed to the contact below.

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A web page describing the NWM can be found at:

<https://water.noaa.gov/about/nwm>

NWS National Public Information Statements are online at:

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

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