

An Introduction to the National Blend of Global Models Project

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Consensus forecasts have long been known to produce a more accurate forecast than any single individual model or forecaster when verified over an extended period of time. National collegiate forecast contests, consensus hurricane forecast tracks, and the mean of ensemble forecasts have shown that this concept works on a consistent basis. NWS Central Region developed a simple consensus mean of raw model output and MOS forecasts, and simple linear regression techniques developed in NWS Western Region helped add value for complex terrain.

Resources provided from the Disaster Relief Appropriations Act of 2013 provide support for the NWS to harness the regional blending efforts to implement a national-scale, centrally-produced, model blending approach within the NWS. Given high expectations to have something implementable by the end of 2015, the scope of this project during the Sandy Supplemental funding period is limited to focus on calibrated forecast guidance from the global models, with an emphasis on the medium range (days 3 – 8) for the weather elements contained in the National Digital Forecast Database (NDFD).

The National Blend of Global Models Project, when successfully completed, will produce a nationally consistent and skillful suite of calibrated forecast guidance from a blend of both NWS and non-NWS models for use in forecasting at the national centers, the local field office, and the private sector. This development will leverage evolving state-of-the-science data assimilation analyses (for calibration and verification), ensemble guidance which enables the estimation of uncertainty in the forecast, and emerging statistical post processing techniques to calibrate and blend model output and make the forecast guidance more useful. The performance of the national model blend will be assessed by objective and subjective approaches. Objective verification will compare the blend to individual model components and the NDFD, both by using an analysis of observations at gridpoints, and at observation locations for the nearest gridpoint. Subjective evaluations will be conducted via forecaster surveys.