

Key Elements of the NOAA Water Initiative

Centralized Water Forecasting Demonstration (FY15):

National Water Model (NWM) Development and Demonstration

- Implement and enhance first-ever NWM
- Increase from current 4000 forecast locations to 2.7 million stream reaches across contiguous U.S.
- Simultaneous, contiguous U.S. scale modeling of the nation's entire river network¹
- Forecast all hydrologic parameters which define the water budget, from summit-to-sea (not just flow/stage)

Centralized Water Resources Data Services

- Internal and external provision of enhanced water forecasts and information to core partners and stakeholders

Water Resources Test and Evaluation Service

- Comprehensive objective verification and validation of the skill and utility of the NWM
- Inter-comparison of skill between current operational forecast paradigm and new NWM

¹ National implementation pending availability of National Hydrography Dataset Plus for Alaska

Enhanced Water Prediction Capability (FY16):

Hyper-Resolution Modeling

- Enhance NWM with nested hyper-resolution zoom capability to capture urban and other fine-scale hydrologic processes
- Heighten focus on regions of interest (e.g. follow storms/issue of the day)

Real-Time Flood Forecast Inundation Mapping

- Develop, demonstrate and implement real-time street-level flood inundation forecasts
- Provide critical information on areal extent, depth and timing of flood waters

Enhance Impact-Based Water Resources Decision Support Services

- Evolve NWM-based guidance to NWS field offices to improve consistency and services for flash floods
- Forecasts linked to geospatial information to assess impacts/risks
- NWC and NWS field offices generate actionable water intelligence to provide enhanced IDSS at appropriate scales

Integrated Water Prediction (FY17 Proposed):

New and improved water prediction services

- Stand up the National Water Center Operations Center to coordinate Federal water prediction activities and provide water intelligence to national level stakeholders
- Generate total water predictions in the coastal zone accounting for the combined impacts of surge, tide, wave and freshwater contributions

New service delivery model for coastal and inland communities

- Engage technical experts from multiple disciplines to provide integrated, high fidelity water resource information and services needed by a spectrum of stakeholders
- Routine engagement with stakeholders to strengthen partnerships, deliver and continually enhance actionable water intelligence

Model integration and forecast assessment

- Link state-of-the science terrestrial freshwater and coastal estuary models to create fully coupled "summit-to-sea" IWP modeling system
- Begin development of the next generation integrated Earth System model for IWP
- Secure the high performance computing, storage and networking necessary to evolve the NWM