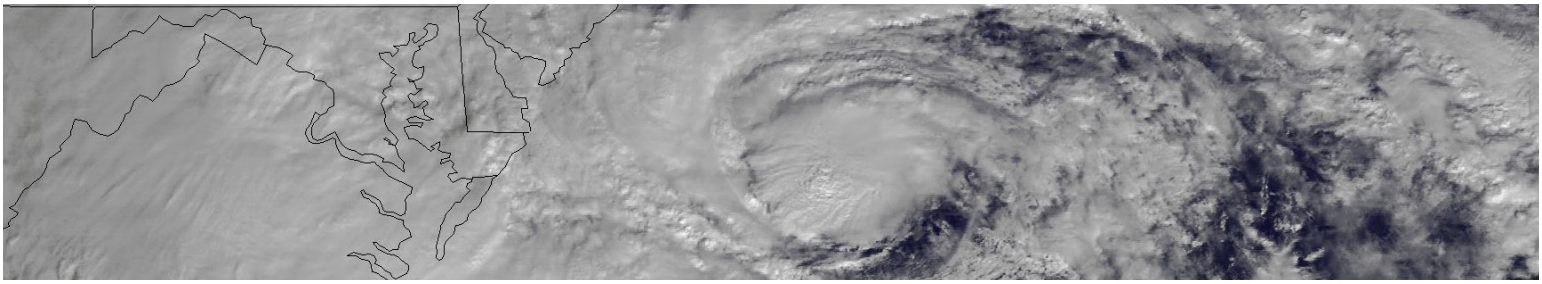


NOAA RESEARCH PROGRAM OVERVIEW

SANDY SUPPLEMENTAL

What is the Sandy Supplemental?


Frank Culasek, NOAA

The Disaster Relief Appropriations Act of 2013 (DRA), commonly referred to as the Sandy Supplemental, provided supplemental appropriations to the National Oceanic and Atmospheric Administration (NOAA) to improve and streamline disaster assistance associated with Post-Tropical Cyclone Sandy, and for other purposes. In addition to recovering and rebuilding infrastructure from the devastation of Sandy, NOAA will conduct a coordinated program of activities to improve NOAA information and services for decision makers, communities, and the public in preparation for, response to, and recovery from other high-impact events. The results of these efforts will contribute to NOAA's vision of resilient ecosystems, communities, and economies.

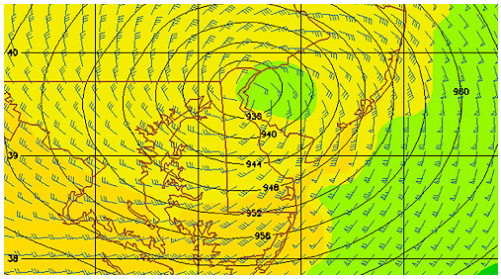
How will OAR apply the funding?

Two portions of the appropriation provided support to OAR. One portion was directed to OAR "laboratories and cooperative institutes research activities associated with sustained observations weather research program, and ocean and coastal research." OAR will focus our efforts on improving prediction and communication of storm hazards. In addition, a portion of DRA appropriations for a weather satellite data gap mitigation reserve fund will be used by OAR to improve and increase high performance computing capacity, to evaluate the potential for the Unmanned Aerial Systems to partially mitigate a potential data gap, and to build and apply a capability to evaluate the contribution to forecasts of future observing systems. To address these two purposes, OAR—working with NOAA partners—has developed a balanced set of activities, investing $74.8M to support work in four areas.


Artist rendering of UAS Global Hawk over hurricane

1. Observing Systems $27.1M

NOAA and its partners will evaluate observing systems to inform approaches for improving storm predictions. The project includes field testing activities and/or analysis of observations, and some activities will include evaluation of impact on numerical models. Researchers will also develop state-of-the-art Observing System Simulation Experiments (OSSE) systems that will evaluate benefits of potential new observing systems. In addition, Unmanned Aircraft Systems (UAS) will be evaluated for targeted observations of high impact events.



Geophysical Fluid Dynamics Laboratory's (GFDL) Superstorm Sandy forecast model showing record-low barometric pressure near Philadelphia, PA

2. Global Modeling $13.3M

NOAA and its partners will develop and evaluate next generation global atmospheric modeling systems to improve the prediction of high-impact weather events, such as hurricanes and outbreaks of severe storms. Improvements will include advanced data assimilation techniques to utilize observations, more sophisticated representations of atmospheric processes, and greater spatial detail in these models.

Inland flooding in the streets of this neighborhood along coastal New Jersey in the aftermath of Sandy. (Frank Csulak, NOAA)

3. Local Storms $9.9M

NOAA and its partners will improve the prediction and communication of storms and associated hazards. This will include improving predictions of storm initiation, extreme rain events and flooding, and the communication of impending high-impact weather and storm hazards to emergency management officials and members of the public. In addition, NOAA will develop probabilistic predictions of the level of hurricane activity for improved seasonal outlooks of the frequency, tracks, number of landfalling hurricanes, and intensity in various important regions.

Provide supercomputing capacity for Sandy Supplemental research and development projects

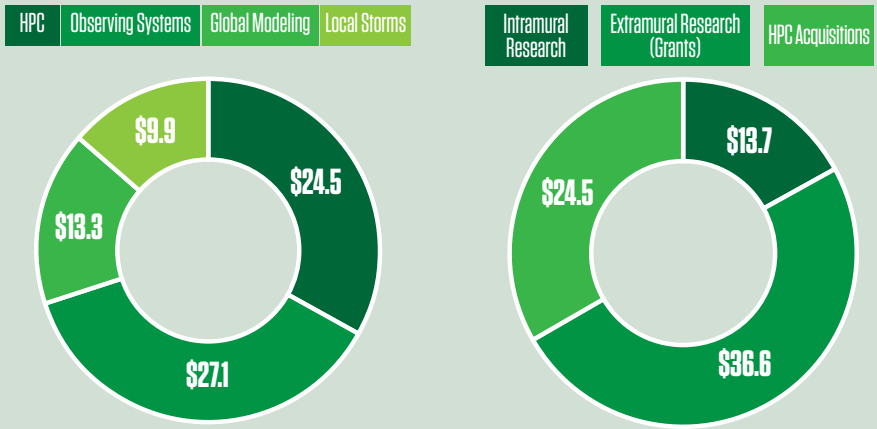
4. High Performance Computing $24.5M

NOAA will obtain high performance computer (HPC) capacity to support OAR and other NOAA Sandy Supplemental research and development projects. For instance, the global modeling project described above will be a large user of the new capacity. This work will evaluate potential future directions for models, data assimilation, and HPC architectures and will produce routine predictions from developmental models.

Frank Culasek, **NOAA**

Research Partnerships

OAR laboratories, the Office of Weather and Air Quality, National Sea Grant College Program, and UAS Program will collaborate with the NWS and NESDIS and work in partnership with a number of NOAA Cooperative Institutes; other universities; the U.S. Integrated Ocean Observing System; and the Global Ocean Observing System. Approximately half of OAR's Sandy Supplemental funding will support extramural investigators.



All graph dollars in millions