

Congress of the United States House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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MEMORANDUM

TO: Committee on Science, Space, and Technology Subcommittee on Environment
Members and Staff
FROM: Science, Space, and Technology Committee Staff
DATE: July 9, 2013
RE: Subcommittee on Environment Markup

The Committee on Science, Space, and Technology Subcommittee on Environment will meet on **Tuesday, July 9th at 10:00 a.m.** in Room 2318 of the Rayburn House Office Building to consider the following:

- **H.R. 2413, *The Weather Forecasting Improvement Act of 2013***

Background and Need

Recent severe weather events in the United States have underscored the need for timely, accurate, and reliable weather forecasts. Within NOAA, the National Weather Service (NWS), the Office of Oceanic and Atmospheric Research (OAR), and the National Environmental Satellite, Data, and Information Service (NESDIS) play important roles in developing and deploying U.S. weather forecasting capabilities.¹ NOAA is joined in this effort by an ever-evolving private sector weather enterprise. The National Academy of Sciences recently emphasized the importance of this partnership, noting that “[p]rivate sector and other organizations provide sensor data, weather forecasts, and end-user services to a broad set of customers.”²

¹ For more information on these responsibilities, see: “To Observe and Protect: How NOAA Procures Data for Weather Forecasting,” March 28, 2012, <http://science.house.gov/hearing/subcommittee-energy-and-environment-hearing-how-noaa-procures-data-weather-forecasting>.

² <http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/Weather-Services-Report-Brief.pdf>.

Rapid technological advances in computing and other areas such as remote sensing and advanced radar hold great promise to improve severe weather prediction, but have yet to be fully exploited. In a 2012 report on the National Weather Service, the National Academy of Sciences stated that “[a]s an outgrowth of public and private sector investment in weather, climate, and hydrological research, new observational, data assimilation, prediction, and other technology advancements are exceeding the capacity of the NWS to optimally acquire, integrate, and communicate critical forecast and warning information based on these technological achievements.”³

The Weather Forecasting Improvement Act of 2013 (H.R. 2413) introduced by Environment Subcommittee Vice Chairman Jim Bridenstine will prioritize the mission of NOAA to include the protection of lives and property, and make funds available to improve weather-related research, operations, and computing resources. The bill directs NOAA to undertake quantitative, cost-benefit assessments used in obtaining data for forecasts. It also directs NOAA to prepare a report outlining the options of commercial opportunities for obtaining space-based weather observations.

Major Provisions

- Public Safety Prioritization. The bill directs the Administrator of the National Oceanic and Atmospheric Administration (NOAA)—which is responsible for everything from weather forecasting to climate and ocean research—to make weather-related activities the top management and planning priority of the agency for the protection of lives and property.
- Weather Research Prioritization. The bill codifies and expands NOAA weather research activities, directing the agency to place “priority emphasis on development of more accurate and timely warnings and forecasts of high impact weather events that endanger life and property.” The bill also codifies an existing technology transfer initiative carried out jointly between the Office of Oceanic and Atmospheric Research and the National Weather Service aimed at ensuring “continuous development and transition of the latest scientific and technological advances into NWS operations.”

³ http://www.nap.edu/catalog.php?record_id=13429

- Weather Research Planning. The bill directs NOAA's Office of Atmospheric Research, National Weather Service, and National Environmental Satellite Data and Information Service to jointly develop a prioritized weather research plan to restore U.S. world leadership in weather modeling, prediction, and forecasting.
- Tornado Warning Extension Program. The bill creates a Tornado Warning Extension Program, the goal of which shall be to "develop and extend accurate tornado forecasts and warnings beyond one hour in order to reduce loss of life, injury, and damage to the economy." It also requires NOAA to prepare a program plan detailing the research and development activities and the associated budget resources necessary to successfully realize the tornado forecasting improvements.
- Improved Observing System Planning. The bill directs NOAA to systematically evaluate the combination of observing systems necessary to meet weather forecasting data requirements, and develop a range of options to address potential data gaps. The bill further specifies that one component of this planning effort shall include Observing System Simulation Experiments (OSSEs) to quantitatively assess the relative value and benefits of potential observing capabilities and systems.
- Encouragement of Private Sector Weather Forecasting Solutions. The bill clarifies that NOAA is not prohibited from obtaining weather data through contracts with commercial providers, and directs NOAA to prepare a report assessing the range of commercial opportunities for obtaining cost-effective space-based weather observations.

Legislative History

In the 112th Congress, the subcommittee on Energy & Environment held a hearing entitled, *To Observe and Protect: How NOAA Procures Data for Weather Forecasting*. The purpose of the hearing was to examine how NOAA develops, evaluates, and executes plans to deliver the best and most cost effective data necessary to meet requirements for severe weather prediction and other observational needs. The Committee also held two hearings in the 112th Congress regarding NOAA's Fiscal Year 2012 Budget Request and NOAA's Fiscal Year 2013 budget request. These hearings helped inform the committee of agency weather forecasting challenges and opportunities related to programmatic management, research prioritization, and commercial data acquisition.

In the 113th Congress, the Subcommittee on Environment held two hearings on H.R. 2413. On May 23rd the Subcommittee held a hearing entitled, *Restoring U.S. Leadership in Weather Forecasting*, and on June 26th Part 2 of that hearing was held, which included testimony by the NOAA Acting Administrator Kathleen Sullivan. The Subcommittee also received testimony from other expert witnesses, which informed the committee on the need for improved weather forecasting and the potential for improved research and technology transition efforts to address this need.

Authorization

H.R. 2413 authorizes appropriations out of funds made available for Operations, Research, and Facilities in the Office of Oceanic and Atmospheric Research:

- \$100,000,000 to carry out Weather Research and Forecasting Innovation, of which
 - \$80,000,000 is authorized for weather laboratories and cooperative institutes
 - \$20,000,000 is authorized for weather and air chemistry research programs
- \$20,000,000 for a joint technology transfer initiative (described in section 3)