



UNITED STATES DEPARTMENT OF COMMERCE
Chief Financial Officer and
Assistant Secretary for Administration
Washington, D.C. 20230

JUL 02 2014

The Honorable Frank R. Wolf
Chairman
Subcommittee on Commerce, Justice,
Science, and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Enclosed is a Report to Congress on the status of the implementation of the National Oceanic and Atmospheric Administration (NOAA) requirements under the Consumer Option for an Alternative System to Allocate Losses (COASTAL) Act of 2012. This Report is being provided in response to Senate Report 113-78, which states: "Within 90 days of enactment of [the FY 2014 Appropriations Act], NOAA shall report to the Committees on Appropriations on the status of COASTAL Act implementation."

NOAA has made significant progress toward establishing the policy framework needed to execute the Act once necessary resources are available. This includes the completion of an observation system inventory and a general data collection plan, the establishment of the Coastal Wind and Water Event Database (CWWED) prototype, and the establishment of an interagency data collection protocol, all of which were completed on schedule. Given the focus of existing resources on operational weather forecast and warning delivery, further technical development of the Named Storm Event Model, CWWED are on hold.

Please contact me at (202) 482-4951 if you have questions. Thank you for the continued support of the Department of Commerce and its programs.

Sincerely,

A handwritten signature in blue ink that reads "Ellen Herbst".

Ellen Herbst
Chief Financial Officer and
Assistant Secretary for Administration

Enclosures

Report to Congress
**Status of the National Oceanic and Atmospheric Administration's Implementation of the
Consumer Option for an Alternative System to Allocate Losses Act of 2012**

**For the Committees on Appropriations as Requested in 2014 Commerce, Justice, Science,
and Related Agencies Appropriations Bill, 2014**

INTRODUCTION

The conference report language for the Consolidated Appropriations Act, 2014 (Public Law 113-76 (Jan. 17, 2014)) required the National Oceanic and Atmospheric Administration (NOAA), specifically the National Weather Service (NWS), to provide Congress with an update on the status of NOAA's efforts to implement the Consumer Option for an Alternative System to Allocate Losses (COASTAL) Act of 2012 (Public Law No. 112-141, Div. F, Title II, Subtitle B (July 6, 2012), 126 Stat. 969-978, to be codified at 33 U.S.C. § 3611 [NOAA authorities] and 42 U.S.C. § 4057 [Federal Emergency Management Agency (FEMA) responsibilities]).

BACKGROUND

The COASTAL Act was signed into law on July 6, 2012, as part of the Flood Insurance Reform Act of 2012 (more commonly referred to as "Biggert-Waters"), which was incorporated into the Federal highway/student loan program reauthorization conference legislation. The purpose of the COASTAL Act is to lower costs to FEMA's National Flood Insurance Program (NFIP) by better discerning wind versus storm surge damages in the case of "indeterminate losses;" that is, where little tangible evidence beyond a building's foundation ("slab") remains for the proper adjustment of insurance claims for homes totally destroyed by a tropical cyclone. Indeterminate losses became an issue following Hurricane Katrina, when private home insurance providers disagreed with their policyholders over the loss-allocation between flood as a cause of loss (covered by NFIP) and wind peril (covered by private home insurance). These disagreements led to backlog in the judicial system.

The COASTAL Act was designed to mitigate future legal issues by requiring NOAA to produce detailed "post-storm assessments" in the aftermath of a damaging tropical cyclone that strikes the United States (U.S.) or its territories. Using output from a hindcast model (termed the "Named Storm Event Model" (NSEM)); the assessments will indicate the strength and timing of damaging winds and water at a given location in the area impacted by the tropical cyclone. If the assessment results for the location of a specific "slab" case can be certified by NOAA as being greater than 90 percent accurate, those results will be input into a FEMA-managed formula that considers a variety of factors that may have contributed to structural damage. Based on this formula, FEMA will determine the appropriate loss allocation between wind and water.

The Act further requires NOAA to create a “Coastal Wind and Water Event Database” (CWWED) to provide the public access to “covered data” (the observations collected during the storm to assist with the assessment). Per the Act, covered data specifically includes those data “necessary to determine the magnitude and timing of wind speeds, rainfall, the barometric pressure, river flows, the extent, height, and timing of storm surge, topographic and bathymetric data, and other measures required to accurately model and assess damage from such storm.” Since the Act requires the post-storm assessments to be available to the public, NOAA will use CWWED as the portal through which the gridded assessment results and metadata will also be accessed.

ORGANIZATIONAL APPROACH

NOAA is leading the development and execution of its requirements under the Act through NWS. In implementing the Act, NWS is working closely with the other NOAA line offices, including the National Ocean Service, the National Environmental Satellite, Data, and Information Service, the Office of Oceanic and Atmospheric Research, as well as Federal partners, including the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM), FEMA/NFIP, the U.S. Geological Survey (USGS) and the U.S. Army Corps of Engineers (USACE).

To facilitate the Act’s requirements for interagency coordination, OFCM established the Joint Action Group for the COASTAL Act Post-Storm Analyses (JAG/CAPSA), which has met on a regular basis since September 2012. JAG/CAPSA is co-chaired by NOAA, USGS, and USACE, and involves several federal partners. NOAA has also assembled an internal team that meets regularly to develop plans for the NSEM, CWWED, and the post-storm assessment protocols.

IMPLEMENTATION STATUS OF NOAA REQUIREMENTS

Inventory of Data Collection Systems

The COASTAL Act required NOAA, in consultation with OFCM, to complete an inventory of observing systems that are capable of collecting the data necessary for the post-storm assessments. The deadline for this action was January 2013, which NOAA and OFCM met through the efforts of the JAG/CAPSA. To help meet this requirement, a Request for Information (RFI) was conducted to potential private data-suppliers.

Data Collection Plan

The Act required NOAA, in consultation with OFCM, to submit to Congress a plan for the collection of covered data needed to successfully support the post-storm assessments. JAG/CAPSA took the lead in drafting this document – titled the *COASTAL Act Capabilities Development Plan* (CACDP) – which was expanded to include a gap analysis to identify shortfalls in capabilities to deliver covered data. The deadline for the data collection plan was April 2013. The CACDP is currently under development and review.

Data Collection Protocol

Using the data collection plan (the CACDP) described above, NOAA was required to establish a protocol for the collection of covered data by the end of December 2013. In drafting the CACDP, JAG/CAPSA determined that the protocol should come in the form of an annex to the National Plan for Disaster Impact Assessments (NPDIA), established by ICMSSR in 2010. The NPDIA describes collaborative mechanisms and procedures for coordinating disaster impact assessment and planning activities for significant storm events (beyond tropical cyclones) among participating Federal agencies and their affiliated partner organizations.

JAG/CAPSA, including NOAA, decided that the protocol would be split into two separate, yet interacting, policies. The first policy focuses on interagency coordination and activities once NWS activates the data collection and assessment processes. JAG/CAPSA led the development of this document – titled the *Interagency COASTAL Act Data Collection Protocol* (less formally referred to as the “interagency protocol”) – which comes in the form of the NPDIA annex. ICMSSR cleared the interagency protocol in December 2013.

The second policy will be drafted by NWS and will come in the form of a new NWS Policy Directive and Instructions (less formally known as the “internal protocol”). The internal protocol will govern important policies and procedures, such as the criteria to activate the data collection and assessment processes, as well as funding guidance and resource management. The drafting of the internal policy is ongoing, but NWS will engage the cross-NOAA team and the JAG/CAPSA throughout the process.

Both policies will be designed to accommodate the augmentation of the existing observation collection infrastructure with deployable mobile sensors. However, the NWS-sponsored deployment of mobile sensors will be dependent on funding availability. Furthermore, deployment activities will be implemented in a manner that does not negatively impact NWS forecasting operations and decision support services.

Named Storm Event Model (NSEM) and Post-storm Assessments

The COASTAL Act defines the NSEM as a “meteorological and oceanographic computerized model.” It must utilize covered data to “replicate the magnitude, timing, and spatial variations of winds, rainfall, and storm surges associated with named tropical storms or hurricanes that threaten any portion of [the coastline of the United States and its territories].” The Act defines the “post-storm assessment” as “a scientific assessment produced and certified by the [NOAA] Administrator to determine the magnitude, timing, and spatial variations of winds, rainfall, and storm surges associated with a specific named storm to be used in the COASTAL Formula.”

The NSEM must be designed to generate post-storm assessments that, to the greatest extent practicable, have a degree of accuracy of 90 percent or more. The post-storm assessment must display the “segments or geographic areas” where 90 percent accuracy could not be obtained. Both the NSEM and post-storm assessments must be made publicly available.

Functionally, the post-storm assessment product package would ideally be comprised of the complete observations set over the NSEM domain, the complete set of gridded products, an accuracy evaluation, a catalog of observations and products complete with the temporal and

spatial coverage of each, and a narrative event history for each of the risk factors (wind, storm surge, waves, inland flooding, etc.). Each of these items will be available through the CWWED for each storm that is assessed (as described in the next section).

The Act required the NSEM to be “[developed] by regulation” by the end of December 2013. Developing a model that can replicate storm measurements for an individual structure with not less than 90 percent accuracy is a major scientific and technical challenge, because NOAA does not currently possess the capability to model with this level of detail and there is a lack of observations in many coastal areas. A significant amount of resources, including time and funding, would be needed to meet the Act’s requirements for all future candidate storms. However, given the scientific complexity of the challenge, it is uncertain how capable the NSEM would be even if implemented.

Because the technical development and execution of the NSEM, CWWED and post-storm assessment process requires the use of current NWS resources, NSEM development has been limited to composing a system description and assessing resources for its development and testing. NOAA used the CACDP to outline the NSEM’s technical requirements and the capability of some of the models available within NOAA, USGS, and USACE to contribute to the effort. The NWS also will issue a Request for Information (RFI) in spring 2014 to explore modeling options available in the private sector.

Construction and execution of the NSEM and the post-storm assessment product package is on hold. Once resourced, the NSEM’s development will follow the standard NWS procedure for transitioning research to operations. As soon as a working prototype is ready, the NSEM will undergo an “experimental” phase, during which the public can explore its functionality. After reviewing the public’s feedback, NWS will decide whether the NSEM is ready to become operational.

Coastal Wind and Water Event Database (CWWED)

As discussed in the Background section, the Act required NOAA to create the CWWED “for the collection and compilation of covered data” as part of “a process for sharing among participants information relevant to collecting and using covered data for – (A) academic research; (B) private sector use; (C) public outreach, and; (D) such other purposes as the [NOAA] Administrator considers appropriate.” The CWWED will be utilized to supply covered data for running the NSEM and verifying its output. Since the Act requires the post-storm assessments to be available to the public, NOAA will use the CWWED as the portal through which the gridded assessment results and metadata will be accessed.

To fulfill the CWWED’s function as a repository of observations from an assessed storm, NOAA intends to take a federated, or distributed, database approach. As a federated database, CWWED will enable a user to fetch the desired data from its supplier without leaving the CWWED interface. The observation data would be stored on the supplier’s local servers. This will help alleviate quality control and storage space concerns, while providing one of the CWWED’s intended functions. The CWWED will also provide access to the gridded output from the NSEM and associated metadata that will constitute the post-storm assessments.

The Act required NOAA to “establish” the CWWED by July 2013. NOAA met this deadline by creating a prototype internal webpage. At present, the page explains the federated approach and lists possible sources of covered data. Like the NSEM, the CWWED will follow the NWS process of product development (described in the previous section). The CWWED cannot enter the experimental phase until the NSEM is capable of producing sample output, because sample output from the NSEM is required to enable potential users to test how well the CWWED provides the assessment results.