

- (i) is accessible by the public;
- (ii) meets basic end-user requirements for running on public computers and networks located outside of secure National Oceanic and Atmospheric Administration information and technology systems; and
- (iii) utilizes, whenever appropriate and cost-effective, innovative strategies and methods, including cloud-based computing capabilities, for hosting and management of part or all of the system described in this subsection.

**(c) Extramural research**

**(1) In general**

In carrying out the program under this section, the Assistant Administrator for Oceanic and Atmospheric Research shall collaborate with and support the non-Federal weather research community, which includes institutions of higher education, private entities, and nongovernmental organizations, by making funds available through competitive grants, contracts, and cooperative agreements.

**(2) Sense of Congress**

It is the sense of Congress that not less than 30 percent of the funds for weather research and development at the Office of Oceanic and Atmospheric Research should be made available for the purpose described in paragraph (1).

**(d) Annual report**

Each year, concurrent with the annual budget request submitted by the President to Congress under section 1105 of title 31 for the National Oceanic and Atmospheric Administration, the Under Secretary shall submit to Congress a description of current and planned activities under this section.

(Pub. L. 115–25, title I, §102, Apr. 18, 2017, 131 Stat. 92; Pub. L. 115–423, §4(a), Jan. 7, 2019, 132 Stat. 5456.)

AMENDMENTS

2019—Subsec. (b)(4). Pub. L. 115–423 added par. (4) relating to advancing weather modeling skill.

**§ 8513. Tornado warning improvement and extension program**

**(a) In general**

The Under Secretary, in collaboration with the United States weather industry and academic partners, shall establish a tornado warning improvement and extension program.

**(b) Goal**

The goal of such program shall be to reduce the loss of life and economic losses from tornadoes through the development and extension of accurate, effective, and timely tornado forecasts, predictions, and warnings, including the prediction of tornadoes beyond 1 hour in advance.

**(c) Program plan**

Not later than 180 days after April 18, 2017, the Assistant Administrator for Oceanic and Atmospheric Research, in coordination with the Director of the National Weather Service, shall develop a program plan that details the specific re-

search, development, and technology transfer activities, as well as corresponding resources and timelines, necessary to achieve the program goal.

**(d) Annual budget for plan submittal**

Following completion of the plan, the Under Secretary, acting through the Assistant Administrator for Oceanic and Atmospheric Research and in coordination with the Director of the National Weather Service, shall, not less frequently than once each year, submit to Congress a proposed budget corresponding with the activities identified in the plan.

(Pub. L. 115–25, title I, §103, Apr. 18, 2017, 131 Stat. 94.)

**§ 8514. Hurricane forecast improvement program**

**(a) In general**

The Under Secretary, in collaboration with the United States weather industry and such academic entities as the Administrator considers appropriate, shall maintain a project to improve hurricane forecasting.

**(b) Goal**

The goal of the project maintained under subsection (a) shall be to develop and extend accurate hurricane forecasts and warnings in order to reduce loss of life, injury, and damage to the economy, with a focus on—

- (1) improving the prediction of rapid intensification and track of hurricanes;
- (2) improving the forecast and communication of storm surges from hurricanes; and
- (3) incorporating risk communication research to create more effective watch and warning products.

**(c) Project plan**

Not later than 1 year after April 18, 2017, the Under Secretary, acting through the Assistant Administrator for Oceanic and Atmospheric Research and in consultation with the Director of the National Weather Service, shall develop a plan for the project maintained under subsection (a) that details the specific research, development, and technology transfer activities, as well as corresponding resources and timelines, necessary to achieve the goal set forth in subsection (b).

(Pub. L. 115–25, title I, §104, Apr. 18, 2017, 131 Stat. 94.)

**§ 8515. Weather research and development planning**

Not later than 1 year after April 18, 2017, and not less frequently than once each year thereafter, the Under Secretary, acting through the Assistant Administrator for Oceanic and Atmospheric Research and in coordination with the Director of the National Weather Service and the Assistant Administrator for Satellite and Information Services, shall issue a research and development and research to operations plan to restore and maintain United States leadership in numerical weather prediction and forecasting that—

- (1) describes the forecasting skill and technology goals, objectives, and progress of the