

that contribute to the research, development, and production of weather forecast products, and primary consumers of these weather forecast products.

(Pub. L. 115-25, §2, Apr. 18, 2017, 131 Stat. 92.)

REFERENCES IN TEXT

This chapter, referred to in text, is Pub. L. 115-25, April 18, 2017, 131 Stat. 91, known as the Weather Research and Forecasting Innovation Act of 2017, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out below and Tables.

SHORT TITLE

Pub. L. 115-25, §1(a), Apr. 18, 2017, 131 Stat. 91, provided that: “This Act [enacting this chapter and sections 3206a and 3208 of Title 33, Navigation and Navigable Waters, amending sections 3201 to 3207 of Title 33, and enacting and repealing provisions set out as notes under section 3201 of Title 33] may be cited as the ‘Weather Research and Forecasting Innovation Act of 2017.’”

SUBCHAPTER I—UNITED STATES WEATHER RESEARCH AND FORECASTING IMPROVEMENT

§ 8511. Public safety priority

In conducting research, the Under Secretary shall prioritize improving weather data, modeling, computing, forecasting, and warnings for the protection of life and property and for the enhancement of the national economy.

(Pub. L. 115-25, title I, §101, Apr. 18, 2017, 131 Stat. 92.)

§ 8512. Weather research and forecasting innovation

(a) Program

The Assistant Administrator for the Office of Oceanic and Atmospheric Research shall conduct a program to develop improved understanding of and forecast capabilities for atmospheric events and their impacts, placing priority on developing more accurate, timely, and effective warnings and forecasts of high impact weather events that endanger life and property.

(b) Program elements

The program described in subsection (a) shall focus on the following activities:

(1) Improving the fundamental understanding of weather consistent with section 8511 of this title, including the boundary layer and other processes affecting high impact weather events.

(2) Improving the understanding of how the public receives, interprets, and responds to warnings and forecasts of high impact weather events that endanger life and property.

(3) Research and development, and transfer of knowledge, technologies, and applications to the National Weather Service and other appropriate agencies and entities, including the United States weather industry and academic partners, related to—

(A) advanced radar, radar networking technologies, and other ground-based technologies, including those emphasizing rapid, fine-scale sensing of the boundary layer and

lower troposphere, and the use of innovative, dual-polarization, phased-array technologies;

(B) aerial weather observing systems;

(C) high performance computing and information technology and wireless communication networks;

(D) advanced numerical weather prediction systems and forecasting tools and techniques that improve the forecasting of timing, track, intensity, and severity of high impact weather, including through—

(i) the development of more effective mesoscale models;

(ii) more effective use of existing, and the development of new, regional and national cloud-resolving models;

(iii) enhanced global weather models; and

(iv) integrated assessment models;

(E) quantitative assessment tools for measuring the impact and value of data and observing systems, including Observing System Simulation Experiments (as described in section 8517 of this title), Observing System Experiments, and Analyses of Alternatives;

(F) atmospheric chemistry and interactions essential to accurately characterizing atmospheric composition and predicting meteorological processes, including cloud microphysical, precipitation, and atmospheric electrification processes, to more effectively understand their role in severe weather; and

(G) additional sources of weather data and information, including commercial observing systems.

(4) A technology transfer initiative, carried out jointly and in coordination with the Director of the National Weather Service, and in cooperation with the United States weather industry and academic partners, to ensure continuous development and transition of the latest scientific and technological advances into operations of the National Weather Service and to establish a process to sunset outdated and expensive operational methods and tools to enable cost-effective transfer of new methods and tools into operations.

(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.)

§ 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 research, 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 National Oceanic and Atmospheric Administration in carrying out the program conducted under section 8512 of this title;

(2) identifies and prioritizes specific research and development activities, and performance metrics, weighted to meet the operational weather mission of the National Weather Service to achieve a weather-ready Nation;

(3) describes how the program will collaborate with stakeholders, including the United States weather industry and academic partners; and

(4) identifies, through consultation with the National Science Foundation, the United States weather industry, and academic partners, research necessary to enhance the integration of social science knowledge into weather forecast and warning processes, including to improve the communication of threat information necessary to enable improved severe weather planning and decision-making on the part of individuals and communities.

(Pub. L. 115–25, title I, §105, Apr. 18, 2017, 131 Stat. 95.)

§ 8516. Observing system planning

The Under Secretary shall—

(1) develop and maintain a prioritized list of observation data requirements necessary to ensure weather forecasting capabilities to protect life and property to the maximum extent practicable;

(2) consistent with section 8517 of this title, utilize Observing System Simulation Experiments, Observing System Experiments, Analyses of Alternatives, and other appropriate assessment tools to ensure continuous systemic evaluations of the observing systems, data, and information needed to meet the requirements of paragraph (1), including options to