

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 maximize observational capabilities and their cost-effectiveness;

(3) identify current and potential future data gaps in observing capabilities related to the requirements listed under paragraph (1); and

(4) determine a range of options to address gaps identified under paragraph (3).

(Pub. L. 115–25, title I, §106, Apr. 18, 2017, 131 Stat. 95.)

§ 8517. Observing System Simulation Experiments

(a) In general

In support of the requirements of section 8516 of this title, the Assistant Administrator for Oceanic and Atmospheric Research shall undertake Observing System Simulation Experiments, or such other quantitative assessments as the Assistant Administrator considers appropriate, to quantitatively assess the relative value and benefits of observing capabilities and systems. Technical and scientific Observing System Simulation Experiment evaluations—

(1) may include assessments of the impact of observing capabilities on—

(A) global weather prediction;

(B) hurricane track and intensity forecasting;

(C) tornado warning lead times and accuracy;

(D) prediction of mid-latitude severe local storm outbreaks; and

(E) prediction of storms that have the potential to cause extreme precipitation and flooding lasting from 6 hours to 1 week; and

(2) shall be conducted in cooperation with other appropriate entities within the National Oceanic and Atmospheric Administration, other Federal agencies, the United States weather industry, and academic partners to ensure the technical and scientific merit of results from Observing System Simulation Experiments or other appropriate quantitative assessment methodologies.

(b) Requirements

Observing System Simulation Experiments shall quantitatively—

(1) determine the potential impact of proposed space-based, suborbital, and in situ observing systems on analyses and forecasts, including potential impacts on extreme weather events across all parts of the Nation;

(2) evaluate and compare observing system design options; and

(3) assess the relative capabilities and costs of various observing systems and combinations of observing systems in providing data necessary to protect life and property.

(c) Implementation

Observing System Simulation Experiments—

(1) shall be conducted prior to the acquisition of major Government-owned or Government-leased operational observing systems, including polar-orbiting and geostationary satellite systems, with a lifecycle cost of more than \$500,000,000; and

(2) shall be conducted prior to the purchase of any major new commercially provided data with a lifecycle cost of more than \$500,000,000.

(d) Priority Observing System Simulation Experiments

(1) Global Navigation Satellite System Radio Occultation

Not later than 30 days after April 18, 2017, the Assistant Administrator for Oceanic and Atmospheric Research shall complete an Observing System Simulation Experiment to assess the value of data from Global Navigation Satellite System Radio Occultation.

(2) Geostationary hyperspectral sounder global constellation

Not later than 120 days after April 18, 2017, the Assistant Administrator for Oceanic and Atmospheric Research shall complete an Observing System Simulation Experiment to assess the value of data from a geostationary hyperspectral sounder global constellation.

(e) Results

Upon completion of all Observing System Simulation Experiments, the Assistant Administrator shall make available to the public the results an assessment¹ of related private and public sector weather data sourcing options, including their availability, affordability, and cost-effectiveness. Such assessments shall be developed in accordance with section 50503 of title 51.

(Pub. L. 115–25, title I, §107, Apr. 18, 2017, 131 Stat. 96.)

§ 8518. Computing resource efficiency improvement and annual report

(a) Computing resources

(1) In general

In acquiring computing capabilities, including high performance computing technologies and supercomputing technologies, that enable the National Oceanic and Atmospheric Administration to meet its mission requirements,

¹ So in original.