CHAPTER 111—WEATHER RESEARCH AND FORECASTING INNOVATION

Sec.

§8501. Definitions

In this chapter:

(1) Seasonal

The term "seasonal" means the time range between 3 months and 2 years.

(2) State

The term "State" means a State, a territory, or possession of the United States, including a Commonwealth, or the District of Columbia.

(3) Subseasonal

The term "subseasonal" means the time range between 2 weeks and 3 months.

(4) Under Secretary

The term "Under Secretary" means the Under Secretary of Commerce for Oceans and Atmosphere.

(5) Weather industry and weather enterprise

The terms "weather industry" and "weather enterprise" are interchangeable in this chapter, and include individuals and organizations from public, private, and academic sectors 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.)

Editorial Notes

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.

Statutory Notes and Related Subsidiaries

Short Title of 2022 Amendment

Pub. L. 117–229, div. D, §1, Dec. 16, 2022, 136 Stat. 2313, provided that: "This Act [enacting subchapter IV of this chapter] may be cited as the 'Providing Research and Estimates of Changes In Precipitation Act' or the 'PRECIP Act'."

Short Title of 2019 Amendment

Pub. L. 115–423, §1, Jan. 7, 2019, 132 Stat. 5454, provided that: "This Act [enacting section 8550 of this title and section 4010 of Title 33, Navigation and Navigable Waters, amending sections 313d, 8512, 8518 to 8521, 8531, and 8532 of this title and sections 4001 to 4002 and 4009 of Title 33, enacting provisions set out as a note under section 4001 of Title 33, and amending provisions set out as a note under section 313d of this title] may be cited as the 'National Integrated Drought Information System Reauthorization Act of 2018'."

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.

(5) Advancing weather modeling skill, reclaiming and maintaining international leadership in the area of numerical weather prediction, and improving the transition of research into operations by—

(A) leveraging the weather enterprise to provide expertise on removing barriers to improving numerical weather prediction;

(B) enabling scientists and engineers to effectively collaborate in areas important for improving operational global numerical weather prediction skill, including model development, data assimilation techniques, systems architecture integration, and computational efficiencies;

(C) strengthening the National Oceanic and Atmospheric Administration's ability to undertake research projects in pursuit of substantial advancements in weather forecast skill;

(D) utilizing and leverage existing resources across the National Oceanic and Atmospheric Administration enterprise; and

(E) creating a community global weather research modeling system that—

(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; Pub. L. 117–263, div. J, title CVI, §10601(c)(8), Dec. 23, 2022, 136 Stat. 3997.)

Editorial Notes

Amendments

2022—Subsec. (b)(4), (5). Pub. L. 117–263 redesignated par. (4) relating to advancing weather modeling skill as (5).

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

§8512a. Learning excellence and good examples from new developers

(a) Definitions

In this section:

(1) Administration

The term "Administration" means the National Oceanic and Atmospheric Administration.

(2) Administrator

The term "Administrator" means the Under Secretary of Commerce for Oceans and Atmosphere and Administrator of the National Oceanic and Atmospheric Administration.

(3) Earth Prediction Innovation Center

The term "Earth Prediction Innovation Center" means the community global weather research modeling system described in paragraph (5)(E) of section 8512(b) of this title.

(4) Model

The term "model" means any vetted numerical model and associated data assimilation of the Earth's system or its components—

(A) developed, in whole or in part, by scientists and engineers employed by the Administration; or

(B) otherwise developed, in whole or in part, using Federal funds.

(5) Open license

The term "open license" has the same meaning given such term in section 3502(21) of title 44.

(6) Operational model

The term "operational model" means any model that has an output used by the Administration for operational functions.

(7) Suitable model

The term "suitable model" means a model that meets the requirements described in paragraph (5)(E)(ii) of section 8512(b) of this title, as determined by the Administrator.

(b) Purposes

The purposes of this section are—

(1) to support innovation in modeling by allowing interested stakeholders to have easy and complete access to operational model codes and to other models, as the Administrator determines appropriate; and

(2) to use vetted innovations arising from access described in paragraph (1) to improve modeling by the Administration.

(c) Plan and implementation of plan to make certain models and data available to the public

(1) In general

The Administrator shall develop and implement a plan to make available to the public, at no cost and with no restrictions on copying, publishing, distributing, citing, adapting, or otherwise using under an open license, the following:

(A) Operational models developed by the Administration.

(B) Models that are not operational models, including experimental and developmental models, as the Administrator determines appropriate.

(C) Applicable information and documentation for models described in subparagraphs (A) and (B), including a description of intended model outputs.

(D) Subject to subsection (f), all data owned by the Federal Government and data that the Administrator has the legal right to redistribute that are associated with models made available to the public pursuant to the plan and used in operational forecasting by the Administration, including—

(i) relevant metadata; and

(ii) data used for operational models used by the Administration as of December 23, 2022.

(2) Accommodations

In developing and implementing the plan under paragraph (1), the Administrator may make such accommodations as the Administrator considers appropriate to ensure that the public release of any model, information, documentation, or data pursuant to the plan do [1] not jeopardize—

(A) national security;

(B) intellectual property or redistribution rights, including under titles 17 and 35;

(C) any trade secret or commercial or financial information subject to section 552(b)(4) of title 5;

(D) any models or data that are otherwise restricted by contract or other written agreement; or

(E) the mission of the Administration to protect lives and property.

(3) Priority

In developing and implementing the plan under paragraph (1), the Administrator shall prioritize making available to the public the models described in paragraph (1)(A).

(4) Protections for privacy and statistical information

In developing and implementing the plan under subsection (a), the Administrator shall ensure that all requirements incorporated into any models described in paragraph (1)(A) ensure compliance with statistical laws and other relevant data protection requirements, including the protection of any personally identifiable information.

(5) Exclusion of certain models

In developing and implementing the plan under paragraph (1), the Administrator may exclude models that the Administrator determines will be retired or superseded in fewer than 5 years after December 23, 2022.

(6) Platforms

In carrying out paragraphs (1) and (2), the Administrator may use government servers, contracts or agreements with a private vendor, or any other platform consistent with the purpose of this title.[2]

(7) Support program

The Administrator shall plan for and establish a program to support infrastructure, including telecommunications and technology infrastructure of the Administration and the platforms described in paragraph (6), relevant to making operational models and data available to the public pursuant to the plan under subsection (a).

(8) Omitted

(d) Requirement to review models and leverage innovations

The Administrator shall—

(1) consistent with the mission of the Earth Prediction Innovation Center, periodically review innovations and improvements made by persons not employed by the Administration as Federal employees to the operational models made available to the public pursuant to the plan under subsection (c)(1) in order to improve the accuracy and timeliness of forecasts of the Administration; and

(2) if the Administrator identifies an innovation for a suitable model, develop and implement a plan to use the innovation to improve the model.

(e) Report on implementation

(1) In general

Not later than 2 years after December 23, 2022, the Administrator shall submit to the appropriate congressional committees a report on the implementation of this section that includes a description of—

(A) the implementation of the plan required by subsection (c);

(B) the process of the Administration under subsection (d)—

(i) for engaging with interested stakeholders to learn what innovations those stakeholders have found;

(ii) for reviewing those innovations; and

(iii) for operationalizing innovations to improve suitable models; and

(C) the use of any Federal financial assistance, including under section 3719 of this title [2] or the Crowdsourcing and Citizen Science Act (15 U.S.C. 3724), in order to facilitate and incentivize the sharing of externally developed improvements for testing, evaluation, validation, and application to further improve the mission of the Administration, and any other Administration priorities.

(2) Appropriate congressional committees defined

In this subsection, the term "appropriate congressional committees" means—

(A) the Committee on Commerce, Science, and Transportation and the Committee on Appropriations of the Senate; and

(B) the Committee on Science, Space, and Technology and the Committee on Appropriations of the House of Representatives.

(f) Protection of national security interests

(1) In general

Notwithstanding any other provision of this section, for models developed in whole or in part with the Department of Defense, the Administrator, in consultation with the Secretary of Defense, as appropriate, shall withhold any model or data if the Administrator or the Secretary of Defense determines doing so to be necessary to protect the national security interests of the United States.

(2) Rule of construction

Nothing in this section shall be construed to supersede any other provision of law governing the protection of the national security interests of the United States.

(g) Authorization of appropriations

There is authorized to be appropriated to carry out this section $2,000,000 for each of fiscal years 2023 through 2027.

(Pub. L. 117–263, div. J, title CVI, §10601, Dec. 23, 2022, 136 Stat. 3995.)

Editorial Notes

References in Text

This title, referred to in subsec. (c)(6), means title CVI of div. J of Pub. L. 117–263, which enacted this section and amended section 8512 of this title.

Section 3719 of this title, referred to in subsec. (e)(1)(C), was in the original "section 24 of the Stevenson-Wydler Technology Innovation Act of 1990" and was translated as reading "section 24 of the Stevenson-Wydler Technology Innovation Act of 1980", to reflect the probable intent of Congress.

The Crowdsourcing and Citizen Science Act, referred to in subsec. (e)(1)(C), is section 402 of title IV of Pub. L. 114–329, Jan. 6, 2017, 130 Stat. 3019, which is classified to section 3724 of this title.

Codification

Section was enacted as part of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023, and not as part of the Weather Research and Forecasting Innovation Act of 2017 which comprises this chapter.

Section is comprised of section 10601 of div. J of Pub. L. 117–263. Subsec. (c)(8) of section 10601 of div. J of Pub. L. 117–263 amended section 8512 of this title.

[1] *So in original. Probably should be "does".*

[2] *See References in Text note below.*

§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) Innovative observations

The Under Secretary shall ensure that the program periodically examines the value of incorporating innovative observations, such as acoustic or infrasonic measurements, observations from phased array radars, and observations from mesonets, with respect to the improvement of tornado forecasts, predictions, and warnings.

(d) 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.

(e) 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; Pub. L. 117–316, §8, Dec. 27, 2022, 136 Stat. 4412.)

Editorial Notes

Amendments

2022—Subsecs. (c) to (e). Pub. L. 117–316 added subsec. (c) and redesignated former subsecs. (c) and (d) as (d) and (e), respectively.

§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;

(3) incorporating risk communication research to create more effective watch and warning products; and

(4) evaluating and incorporating, as appropriate, innovative observations, including acoustic or infrasonic measurements.

(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; Pub. L. 117–316, §9, Dec. 27, 2022, 136 Stat. 4412.)

Editorial Notes

Amendments

2022—Subsec. (b)(4). Pub. L. 117–316 added par. (4).

§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 and flood-event 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 decisionmaking on the part of individuals and communities.

(Pub. L. 115–25, title I, §105, Apr. 18, 2017, 131 Stat. 95; Pub. L. 117–316, §10, Dec. 27, 2022, 136 Stat. 4413.)

Editorial Notes

Amendments

2022—Par. (2). Pub. L. 117–316 inserted "and flood-event" after "operational weather".

§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 assessment [1] 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.)

[1] *So in original.*

§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, the Under Secretary shall, when appropriate and cost-effective, assess and prioritize options for entering into multi-year lease agreements for computing capabilities over options for purchasing computing hardware outright.

(2) Acquisition

In carrying out the requirements of paragraph (1), the Under Secretary shall structure multi-year lease agreements in such a manner that the expiration of the lease is set for a date on or around—

(A) the expected degradation point of the computing resources; or

(B) the point at which significantly increased computing capabilities are expected to be available for lease.

(3) Pilot programs

(A) In general

In order to more efficiently and effectively meet the mission requirements of the National Oceanic and Atmospheric Administration, the Under Secretary may create 1 or more pilot programs for assessing new or innovative information and technology capabilities and services.

(B) Program requirements

Any program created under paragraph (3) shall assess only those capabilities and services that—

(i) meet or exceed the standards and requirements of the National Oceanic and Atmospheric Administration, including for processing speed, cybersecurity, and overall reliability; or

(ii) meet or exceed, or are expected to meet or exceed, the performance of similar, in-house information and technology capabilities and services that are owned and operated by the National Oceanic and Atmospheric Administration prior to the establishment of the pilot program.

(C) Authorization of appropriations

There is authorized to be appropriated, out of funds appropriated to the National Environmental Satellite, Data, and Information Service, to carry out this paragraph $5,000,000 for fiscal year 2019, $10,000,000 for fiscal year 2020, and $5,000,000 for each of fiscal years 2021 through 2023, to remain available until expended.

(b) Reports

Not later than 1 year after January 7, 2019, and triennially thereafter until the date that is 6 years after the date on which the first report is submitted, the Under Secretary, acting through the Chief Information Officer of the National Oceanic and Atmospheric Administration and in coordination with the Assistant Administrator for Oceanic and Atmospheric Research and the Director of the National Weather Service, shall produce and make publicly available a report that explains how the Under Secretary intends—

(1) to continually support upgrades to pursue the fastest, most powerful, and cost-effective high performance computing technologies in support of its weather prediction mission;

(2) to ensure a balance between the research to operations requirements to develop the next generation of regional and global models as well as highly reliable operational models;

(3) to take advantage of advanced development concepts to, as appropriate, make next generation weather prediction models available in beta-test mode to operational forecasters, the United States weather industry, and partners in academic and Government research;

(4) to use existing computing resources to improve advanced research and operational weather prediction;

(5) to utilize non-Federal contracts to obtain the necessary expertise for advanced weather computing, if appropriate;

(6) to utilize cloud computing; and

(7) to create a long-term strategy to transition the programming language of weather model code to current and broadly-used coding language.

(Pub. L. 115–25, title I, §108, Apr. 18, 2017, 131 Stat. 97; Pub. L. 115–423, §5(a), Jan. 7, 2019, 132 Stat. 5457.)

Editorial Notes

Amendments

2019—Pub. L. 115–423 amended section generally. Prior to amendment, section related to annual report on computing resources prioritization.

§8519. Authorization of appropriations

(a) In general

There are authorized to be appropriated to the Office of Oceanic and Atmospheric Research to carry out this subchapter—

(1) $136,516,000 for fiscal year 2019, of which—
(A) $85,758,000 is authorized for weather laboratories and cooperative institutes;
(B) $30,758,000 is authorized for weather and air chemistry research programs; and
(C) $20,000,000 is authorized for the joint technology transfer initiative described in section 8512(b)(4) of this title;

(2) $148,154,000 for fiscal year 2020, of which—
(A) $87,258,000 is authorized for weather laboratories and cooperative institutes;
(B) $40,896,000 is authorized for weather and air chemistry research programs; and
(C) $20,000,000 is authorized for the joint technology transfer initiative described in section 8512(b)(4) of this title;

(3) $150,154,000 for fiscal year 2021, of which—
(A) $88,758,000 is authorized for weather laboratories and cooperative institutes;
(B) $41,396,000 is authorized for weather and air chemistry research programs; and
(C) $20,000,000 is authorized for the joint technology transfer initiative described in section 8512(b)(4) of this title;

(4) $152,154,000 for fiscal year 2022, of which—
(A) $90,258,000 is authorized for weather laboratories and cooperative institutes;
(B) $41,896,000 is authorized for weather and air chemistry research programs; and
(C) $20,000,000 is authorized for the joint technology transfer initiative described in section 8512(b)(4) of this title; and

(5) $154,154,000 for fiscal year 2023, of which—
(A) $91,758,000 is authorized for weather laboratories and cooperative institutes;
(B) $42,396,000 is authorized for weather and air chemistry research programs; and
(C) $20,000,000 is authorized for the joint technology transfer initiative described in section 8512(b)(4) of this title.

(b) Limitation

No additional funds are authorized to carry out this subchapter and the amendments made by this title.[1]

(Pub. L. 115–25, title I, §110, Apr. 18, 2017, 131 Stat. 98; Pub. L. 115–423, §3(b), Jan. 7, 2019, 132 Stat. 5455.)

Editorial Notes

References in Text

This subchapter, referred to in text, was in the original "this title", meaning title I of Pub. L. 115–25, which enacted this subchapter and amended provisions formerly set out as a note under section 313 of this title,

which is now classified to section 8520 of this title. For complete classification of title I to the Code, see Tables.

The amendments made by this title, referred to in subsec. (b), mean the amendments made by title I of Pub. L. 115–25, which amended provisions formerly set out as a note under section 313 of this title and which is now classified to section 8520 of this title.

Amendments

2019—Pub. L. 115–423 amended section generally. Prior to amendment, section related to authorization of appropriations for fiscal years 2017 and 2018.

[1] *See References in Text note below.*

§8520. United States Weather Research Program

(a) Establishment

The Secretary of Commerce, in cooperation with the Federal Coordinating Council for Science, Engineering, and Technology through the Committee on Earth and Environmental Sciences, shall establish a United States Weather Research Program to—

(1) increase benefits to the Nation from the substantial investment in modernizing the public weather warning and forecast system in the United States;

(2) improve local and regional weather forecasts and warnings;

(3) address critical weather-related scientific issues;

(4) coordinate governmental, university, and private-sector efforts;

(5) submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives, not less frequently than once each year, a report, including—

(A) a list of ongoing research projects;

(B) project goals and a point of contact for each project;

(C) the five projects related to weather observations, short-term weather, or subseasonal forecasts within Office of Oceanic and Atmospheric Research that are closest to operationalization;

(D) for each project referred to in subparagraph (C)—

(i) the potential benefit;

(ii) any barrier to operationalization; and

(iii) the plan for operationalization, including which line office will financially support the project and how much the line office intends to spend;

(6) establish teams with staff from the Office of Oceanic and Atmospheric Research and the National Weather Service to oversee the operationalization of research products developed by the Office of Oceanic and Atmospheric Research;

(7) develop mechanisms for research priorities of the Office of Oceanic and Atmospheric Research to be informed by the relevant line offices within the National Oceanic and Atmospheric Administration, the relevant user community, and the weather enterprise;

(8) develop an internal mechanism to track the progress of each research project within the Office of Oceanic and Atmospheric Research and mechanisms to terminate a project that is not adequately progressing;

(9) develop and implement a system to track whether extramural research grant goals were accomplished;

(10) provide facilities for products developed by the Office of Oceanic and Atmospheric Research to be tested in operational simulations, such as test beds;

(11) encourage academic collaboration with the Office of Oceanic and Atmospheric Research and the National Weather Service by facilitating visiting scholars; and

(12) carry out the activities of the Earth Prediction Innovation Center as described in section 8512(b)(2) of this title.

(b) Implementation plan

The Secretary of Commerce, in cooperation with the Committee on Earth and Environmental Sciences, shall prepare and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a plan for implementation of the United States Weather Research Program which shall—

(1) establish, for the 10-year period beginning in the year the plan is submitted, the goals and priorities for Federal weather research which most effectively advance the scientific understanding of weather processes and provide information to improve weather warning and forecast systems in the United States;

(2) describe specific activities, including research activities, data collection and data analysis requirements, predictive modeling, participation in international research efforts, demonstration of potential operational forecast applications, and education and training required to achieve such goals and priorities; and

(3) set forth the role of each Federal agency and department to be involved in the United States Weather Research Program, identifying and addressing, as appropriate, relevant programs and activities of the Federal agencies and departments that would contribute to such Program.

(c) Subseasonal defined

In this section, the term "subseasonal" means the time range between 2 weeks and 3 months.

(Pub. L. 102–567, title I, §108, Oct. 29, 1992, 106 Stat. 4276; Pub. L. 115–25, title I, §109, Apr. 18, 2017, 131 Stat. 97; Pub. L. 115–423, §4(b), Jan. 7, 2019, 132 Stat. 5457.)

Editorial Notes

Codification

Pub. L. 115–25, which directed amendment of section 108 of the "Oceanic and Atmospheric Administration Authorization Act of 1992", was executed to this section, which is section 108 of the National Oceanic and Atmospheric Administration Authorization Act of 1992, to reflect the probable intent of Congress.

Section was formerly set out as a note under section 313 of this title.

Section was enacted as part of the National Oceanic and Atmospheric Administration Authorization Act of 1992, and not as part of the Weather Research and Forecasting Innovation Act of 2017 which comprises this chapter.

Amendments

2019—Subsec. (a)(12). Pub. L. 115–423 added par. (12).

2017—Subsec. (a)(5) to (11). Pub. L. 115–25, §109(1), added pars. (5) to (11). See Codification note above.

Subsec. (b). Pub. L. 115–25, §109(2), substituted "The" for "Not later than 90 days after October 29, 1992, the" in introductory provisions. See Codification note above.

Subsec. (c). Pub. L. 115–25, §109(3), added subsec. (c). See Codification note above.

§8521. Weather and climate information in agriculture

(a) Findings

Congress finds that—

(1) agricultural and silvicultural operations are vulnerable to damage from atmospheric conditions that accurate and timely reporting of weather information can help prevent;

(2) the maintenance of current weather and climate analysis and information dissemination systems, and Federal, State, and private efforts to improve these systems, is essential if agriculture and silviculture are to mitigate damage from atmospheric conditions;

(3) agricultural and silvicultural weather services at the Federal level should be maintained with joint planning between the National Oceanic and Atmospheric Administration and the Department of Agriculture; and

(4) efforts should be made, involving user groups, weather and climate information providers, and Federal and State governments, to expand the use of weather and climate information in agriculture and silviculture.

(b) Policy

It, therefore, is declared to be the policy of Congress that it is in the public interest to maintain an active Federal involvement in providing agricultural and silvicultural weather and climate information and that efforts should be made, among users of this information and among private providers of this information, to improve use of this information.

(c) Functions

The Under Secretary, acting through the Director of the National Weather Service and the heads of such other programs of the National Oceanic and Atmospheric Administration as the Under Secretary considers appropriate, shall—

(1) collect and utilize information in order to make usable, reliable, and timely foundational forecasts of subseasonal and seasonal temperature and precipitation;

(2) leverage existing research and models from the weather enterprise to improve the forecasts under paragraph (1);

(3) determine and provide information on how the forecasted conditions under paragraph (1) may impact—

(A) the number and severity of droughts, fires, tornadoes, hurricanes, floods, heat waves, coastal inundation, winter storms, high impact weather, or other relevant natural disasters;

(B) snowpack; and

(C) sea ice conditions; and

(4) develop an Internet clearinghouse to provide the forecasts under paragraph (1) and the information under paragraphs (1) and (3) on both national and regional levels.

(d) Communication

The Director of the National Weather Service shall provide the forecasts under paragraph (1) of subsection (c) and the information on their impacts under paragraph (3) of such subsection to the public, including public and private entities engaged in planning and preparedness, such as National Weather Service Core partners at the Federal, regional, State, tribal, and local levels of government.

(e) Cooperation

The Under Secretary shall build upon existing forecasting and assessment programs and partnerships, including—

(1) by designating research and monitoring activities related to subseasonal and seasonal forecasts as a priority in one or more solicitations of the Cooperative Institutes of the Office of Oceanic and Atmospheric Research;

(2) by contributing to the interagency Earth System Prediction Capability; and

(3) by consulting with the Secretary of Defense and the Secretary of Homeland Security to determine the highest priority subseasonal and seasonal forecast needs to enhance national security.

(f) Forecast communication coordinators

(1) In general

The Under Secretary shall foster effective communication, understanding, and use of the forecasts by the intended users of the information described in subsection (d). This shall include assistance to States for forecast communication coordinators to enable local interpretation and planning based on the information.

(2) Requirements

For each State that requests assistance under this subsection, the Under Secretary may—

(A) provide funds to support an individual in that State—

(i) to serve as a liaison among the National Oceanic and Atmospheric Administration, other Federal departments and agencies, the weather enterprise, the State, and relevant interests within that State; and

(ii) to receive the forecasts and information under subsection (c) and disseminate the forecasts and information throughout the State, including to county and tribal governments; and

(B) require matching funds of at least 50 percent, from the State, a university, a nongovernmental organization, a trade association, or the private sector.

(3) Limitation

Assistance to an individual State under this subsection shall not exceed $100,000 in a fiscal year.

(g) Cooperation from other Federal agencies

Each Federal department and agency shall cooperate as appropriate with the Under Secretary in carrying out this section.

(h) Reports

(1) In general

Not later than 18 months after April 18, 2017, the Under Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report, including—

(A) an analysis of the 1 how information from the National Oceanic and Atmospheric Administration on subseasonal and seasonal forecasts, as provided under subsection (c), is utilized in public planning and preparedness;

(B) specific plans and goals for the continued development of the subseasonal and seasonal forecasts and related products described in subsection (c); and

(C) an identification of research, monitoring, observing, and forecasting requirements to meet the goals described in subparagraph (B).

(2) Consultation

In developing the report under paragraph (1), the Under Secretary shall consult with relevant Federal, regional, State, tribal, and local government agencies, research institutions, and the private sector.

(i) Definitions

In this section:

(1) Foundational forecast

The term "foundational forecast" means basic weather observation and forecast data, largely in raw form, before further processing is applied.

(2) National Weather Service core partners

The term "National Weather Service core partners" means government and nongovernment entities which are directly involved in the preparation or dissemination of, or discussions involving, hazardous weather or other emergency information put out by the National Weather Service.

(3) Seasonal

The term "seasonal" means the time range between 3 months and 2 years.

(4) State

The term "State" means a State, a territory, or possession of the United States, including a Commonwealth, or the District of Columbia.

(5) Subseasonal

The term "subseasonal" means the time range between 2 weeks and 3 months.

(6) Under Secretary

The term "Under Secretary" means the Under Secretary of Commerce for Oceans and Atmosphere.

(7) Weather industry and weather enterprise

The terms "weather industry" and "weather enterprise" are interchangeable in this section and include individuals and organizations from public, private, and academic sectors that contribute to the research, development, and production of weather forecast products, and primary consumers of these weather forecast products.

(j) Authorization of appropriations

There are authorized to be appropriated to carry out the activities under this section—

(1) $26,500,000 for fiscal year 2019;
(2) $27,000,000 for fiscal year 2020;
(3) $27,500,000 for fiscal year 2021;
(4) $28,000,000 for fiscal year 2022; and
(5) $28,500,000 for fiscal year 2023.

(k) Derivation of funds

Amounts made available to carry out this section shall be derived from amounts appropriated or otherwise made available to the National Weather Service.

(Pub. L. 99–198, title XVII, §1762, Dec. 23, 1985, 99 Stat. 1651; Pub. L. 115–25, title II, §201, Apr. 18, 2017, 131 Stat. 98; Pub. L. 115–423, §3(a), Jan. 7, 2019, 132 Stat. 5455; Pub. L. 117–316, §11, Dec. 27, 2022, 136 Stat. 4413.)

Editorial Notes

Codification

Section was formerly set out as a note under section 313 of this title.

Section was enacted as part of the Food Security Act of 1985, and not as part of the Weather Research and Forecasting Innovation Act of 2017 which comprises this chapter.

Amendments

2022—Subsec. (f)(1). Pub. L. 117–316 substituted "shall include" for "may include".

2019—Subsec. (j). Pub. L. 115–423, §3(a)(1), amended subsec. (j) generally. Prior to amendment, text read as follows: "For each of fiscal years 2017 and 2018, there are authorized out of funds appropriated to the National Weather Service, $26,500,000 to carry out the activities of this section."

Subsec. (k). Pub. L. 115–423, §3(a)(2), added subsec. (k).

2017—Subsecs. (a), (b). Pub. L. 115–25, §201(1), (2), inserted headings.

Subsecs. (c) to (j). Pub. L. 115–25, §201(3), added subsecs. (c) to (j).

[1] *So in original. The word "the" probably should not appear.*

SUBCHAPTER II—WEATHER SATELLITE AND DATA INNOVATION

§8531. National Oceanic and Atmospheric Administration satellite and data management

(a) Short-term management of environmental observations

(1) Microsatellite constellations

(A) In general

The Under Secretary shall complete and operationalize the Constellation Observing System for Meteorology, Ionosphere, and Climate–1 and Climate–2 (COSMIC) in effect on the day before April 18, 2017—

(i) by deploying constellations of microsatellites in both the equatorial and polar orbits;

(ii) by integrating the resulting data and research into all national operational and research weather forecast models; and

(iii) by ensuring that the resulting data of National Oceanic and Atmospheric Administration's COSMIC–1 and COSMIC–2 programs are free and open to all communities.

(B) Annual reports

Not less frequently than once each year until the Under Secretary has completed and operationalized the program described in subparagraph (A) pursuant to such subparagraph, the Under Secretary shall submit to Congress a report on the status of the efforts of the Under Secretary to carry out such subparagraph.

(2) Integration of ocean and coastal data from the Integrated Ocean Observing System

In National Weather Service Regions where the Director of the National Weather Service determines that ocean and coastal data would improve forecasts, the Director, in consultation with the Assistant Administrator for Oceanic and Atmospheric Research and the Assistant Administrator of the National Ocean Service, shall—

(A) integrate additional coastal and ocean observations, and other data and research, from the Integrated Ocean Observing System (IOOS) into regional weather forecasts to improve weather forecasts and forecasting decision support systems;

(B) support the development of real-time data sharing products and forecast products in collaboration with the regional associations of such system, including contributions from the private sector, academia, and research institutions to ensure timely and accurate use of ocean and coastal data in regional forecasts; and

(C) support increasing use of autonomous, mobile surface, sub-surface, and submarine vehicle ocean and fresh water sensor systems and the infrastructure necessary to share and analyze these data in real-time and feed them into predictive early warning systems.

(3) Existing monitoring and observation-capability

The Under Secretary shall identify degradation of existing monitoring and observation capabilities that could lead to a reduction in forecast quality.

(4) Specifications for new satellite systems or data determined by operational needs

In developing specifications for any satellite systems or data to follow the Joint Polar Satellite System, Geostationary Operational Environmental Satellites, and any other satellites, in effect on the day before April 18, 2017, the Under Secretary shall ensure the specifications are determined to the extent practicable by the recommendations of the reports under subsection (b) of this section.

(b) Independent Study on Future of National Oceanic and Atmospheric Administration satellite systems and data

(1) Agreement

(A) In general

The Under Secretary shall seek to enter into an agreement with the National Academy of Sciences to perform the services covered by this subsection.

(B) Timing

The Under Secretary shall seek to enter into the agreement described in subparagraph (A) before September 30, 2018.

(2) Study

(A) In general

Under an agreement between the Under Secretary and the National Academy of Sciences under this subsection, the National Academy of Sciences shall conduct a study on matters concerning future satellite data needs.

(B) Elements

In conducting the study under subparagraph (A), the National Academy of Sciences shall—

(i) develop recommendations on how to make the data portfolio of the Administration more robust and cost-effective;

(ii) assess the costs and benefits of moving toward a constellation of many small satellites, standardizing satellite bus design, relying more on the purchasing of data, or acquiring data from other sources or methods;

(iii) identify the environmental observations that are essential to the performance of weather models, based on an assessment of Federal, academic, and private sector weather research, and the cost of obtaining the environmental data;

(iv) identify environmental observations that improve the quality of operational and research weather models in effect on the day before April 18, 2017;

(v) identify and prioritize new environmental observations that could contribute to existing and future weather models; and

(vi) develop recommendations on a portfolio of environmental observations that balances essential, quality-improving, and new data, private and nonprivate sources, and space-based and Earth-based sources.

(C) Deadline and report

In carrying out the study under subparagraph (A), the National Academy of Sciences shall complete and transmit to the Under Secretary a report containing the findings of the National Academy of Sciences with respect to the study not later than 2 years after the date on which the Administrator enters into an agreement with the National Academy of Sciences under paragraph (1)(A).

(3) Alternate organization

(A) In general

If the Under Secretary is unable within the period prescribed in subparagraph (B) of paragraph (1) to enter into an agreement described in subparagraph (A) of such paragraph with the National Academy of Sciences on terms acceptable to the Under Secretary, the Under Secretary shall seek to enter into such an agreement with another appropriate organization that—

(i) is not part of the Federal Government;

(ii) operates as a not-for-profit entity; and

(iii) has expertise and objectivity comparable to that of the National Academy of Sciences.

(B) Treatment

If the Under Secretary enters into an agreement with another organization as described in subparagraph (A), any reference in this subsection to the National Academy of Sciences shall be treated as a reference to the other organization.

(4) Authorization of appropriations

There are authorized to be appropriated, out of funds appropriated to National [1] Environmental Satellite, Data, and Information Service, to carry out this subsection $1,000,000 for the period encompassing fiscal years 2018 through 2019.

(c) Next generation satellite architecture

(1) In general

The Under Secretary shall analyze, test, and plan the procurement of future data sources and satellite architectures, including respective ground system elements, identified in the National Oceanic and Atmospheric Administration's Satellite Observing System Architecture Study that—

(A) lower the cost of observations used to meet the National Oceanic and Atmospheric Administration's mission requirements;

(B) disaggregate current satellite systems, where appropriate;

(C) include new, value-adding technological advancements; and

(D) improve—

(i) weather and climate forecasting and predictions; and

(ii) the understanding, management, and exploration of the ocean.

(2) Quantitative assessments and partnership authority

In meeting the requirements described in paragraph (1), the Under Secretary—

(A) may partner with the commercial and academic sectors, non-governmental and not-for-profit organizations, and other Federal agencies; and

(B) shall, consistent with section 8517 of this title, undertake quantitative assessments for objective analyses, as the Under Secretary considers appropriate, to evaluate relative value and benefits of future data sources and satellite architectures described in paragraph (1).

(d) Additional forms of transaction authorized

(1) In general

Subject to paragraph (2), in order to enhance the effectiveness of data, satellite, and other observing systems used by the National Oceanic and Atmospheric Administration to meet its missions, the Under Secretary may enter into and perform such transaction agreements on such terms as the Under Secretary considers appropriate to carry out—

(A) basic, applied, and advanced research projects and ocean exploration missions to meet the objectives described in subparagraphs (A) through (D) of subsection (c)(1); or

(B) any other type of project to meet other mission objectives, as determined by the Under Secretary.

(2) Method and scope

(A) In general

A transaction agreement under paragraph (1) shall be limited to research and development activities.

(B) Permissible uses

A transaction agreement under paragraph (1) may be used—

(i) for the construction, use, operation, or procurement of new, improved, innovative, or value-adding systems, including satellites, instrumentation, ground stations, data, and data processing;

(ii) to make determinations on how to best use existing or planned data, systems, and assets of the National Oceanic and Atmospheric Administration; and

(iii) only when the objectives of the National Oceanic and Atmospheric Administration cannot be met using a cooperative research and development agreement, grants procurement contract, or cooperative agreement.

(3) Termination of effectiveness

The authority provided in this subsection terminates effective September 30, 2030.

(e) Transparency

Not later than 60 days after the date that a transaction agreement is made under subsection (d), the Under Secretary shall make publicly available, in a searchable format, on the website of the National Oceanic and Atmospheric Administration all uses of the authority under subsection (d), including an estimate of committed National Oceanic and Atmospheric Administration resources and the expected benefits to National Oceanic and Atmospheric Administration objectives for the transaction agreement, with appropriate redactions for proprietary, sensitive, or classified information.

(f) Reports

(1) In general

Not later than 90 days after September 30 of each fiscal year through September 30, 2023, the Under Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on the use of additional transaction authority by the National Oceanic and Atmospheric Administration during the previous fiscal year.

(2) Contents

Each report shall include—

(A) for each transaction agreement in effect during the fiscal year covered by the report—

(i) an indication of whether the transaction agreement is a reimbursable, non-reimbursable, or funded agreement;

(ii) a description of—

(I) the subject and terms;

(II) the parties;

(III) the responsible National Oceanic and Atmospheric Administration line office;

(IV) the value;

(V) the extent of the cost sharing among Federal Government and non-Federal sources;

(VI) the duration or schedule; and

(VII) all milestones;

(iii) an indication of whether the transaction agreement was renewed during the previous fiscal year;

(iv) the technology areas in which research projects were conducted under that agreement;

(v) the extent to which the use of that agreement—

(I) has contributed to a broadening of the technology and industrial base available for meeting National Oceanic and Atmospheric Administration needs; and

(II) has fostered within the technology and industrial base new relationships and practices that support the United States; and

(vi) the total value received by the Federal Government under that agreement for that fiscal year; and

(B) a list of all anticipated reimbursable, non-reimbursable, and funded transaction agreements for the upcoming fiscal year.

(g) Rule of construction

Nothing in this section may be construed as limiting the authority of the National Oceanic and Atmospheric Administration to use cooperative research and development agreements, grants, procurement contracts, or cooperative agreements.

(Pub. L. 115–25, title III, §301, Apr. 18, 2017, 131 Stat. 101; Pub. L. 115–423, §§6, 7(a), Jan. 7, 2019, 132 Stat. 5459, 5461; Pub. L. 116–259, title V, §503, Dec. 23, 2020, 134 Stat. 1179.)

Editorial Notes

Amendments

2020—Subsec. (c)(1)(D). Pub. L. 116–259, §503(1), added subpar. (D) and struck out former subpar. (D) which read as follows: "improve weather forecasting and predictions."

Subsec. (d)(1). Pub. L. 116–259, §503(2)(A), substituted "data, satellite, and other observing systems" for "data and satellite systems" and "to carry out—" and subpars. (A) and (B) for "to carry out basic, applied, and advanced research projects to meet the objectives described in subparagraphs (A) through (D) subsection (c)(1)."

Subsec. (d)(2)(B)(i). Pub. L. 116–259, §503(2)(B), substituted "systems, including satellites, instrumentation, ground stations, data, and data processing;" for "satellites, instrumentation, ground stations, and data;".

Subsec. (d)(3). Pub. L. 116–259, §503(2)(C), substituted "2030" for "2023".

2019—Subsec. (a)(2)(C). Pub. L. 115–423, §7(a), added subpar. (C).

Subsecs. (c) to (g). Pub. L. 115–423, §6, added subsecs. (c) to (g).

[1] *So in original. Probably should be preceded by "the".*

§8532. Commercial weather data

(a) Data and hosted satellite payloads

Notwithstanding any other provision of law, the Secretary of Commerce may enter into agreements for—

(1) the purchase of weather data through contracts with commercial providers; and

(2) the placement of weather satellite instruments on cohosted government or private payloads.

(b) Strategy

(1) In general

Not later than 180 days after April 18, 2017, the Secretary of Commerce, in consultation with the Under Secretary, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a strategy to enable the procurement of quality commercial weather data. The strategy shall assess the range of commercial opportunities, including public-private partnerships, for obtaining surface-based, aviation-based, and space-based weather observations. The strategy shall include the expected cost-effectiveness of these opportunities as well as provide a plan for procuring data, including an expected implementation timeline, from these nongovernmental sources, as appropriate.

(2) Requirements

The strategy shall include—

(A) an analysis of financial or other benefits to, and risks associated with, acquiring commercial weather data or services, including through multiyear acquisition approaches;

(B) an identification of methods to address planning, programming, budgeting, and execution challenges to such approaches, including—

(i) how standards will be set to ensure that data is reliable and effective;

(ii) how data may be acquired through commercial experimental or innovative techniques and then evaluated for integration into operational use;

(iii) how to guarantee public access to all forecast-critical data to ensure that the United States weather industry and the public continue to have access to information critical to their work; and

(iv) in accordance with section 50503 of title 51, methods to address potential termination liability or cancellation costs associated with weather data or service contracts; and

(C) an identification of any changes needed in the requirements development and approval processes of the Department of Commerce to facilitate effective and efficient implementation of such strategy.

(3) Authority for agreements

The Assistant Administrator for National [1] Environmental Satellite, Data, and Information Service may enter into multiyear agreements necessary to carry out the strategy developed under this subsection.

(c) Pilot program

(1) Criteria

Not later than 30 days after April 18, 2017, the Under Secretary shall publish data and metadata standards and specifications for space-based commercial weather data, including radio occultation data, and, as soon as possible, geostationary hyperspectral sounder data.

(2) Pilot contracts

(A) Contracts

Not later than 90 days after April 18, 2017, the Under Secretary shall, through an open competition, enter into at least one pilot contract with one or more private sector entities capable of providing data that meet the standards and specifications set by the Under Secretary for providing commercial weather data in a manner that allows the Under Secretary to calibrate and evaluate the data for its use in National Oceanic and Atmospheric Administration meteorological models.

(B) Assessment of data viability

Not later than the date that is 3 years after the date on which the Under Secretary enters into a contract under subparagraph (A), the Under Secretary shall assess and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives the results of a determination of the extent to which data provided under the contract entered into under subparagraph (A) meet the criteria published under paragraph (1) and the extent to which the pilot program has demonstrated—

(i) the viability of assimilating the commercially provided data into National Oceanic and Atmospheric Administration meteorological models;

(ii) whether, and by how much, the data add value to weather forecasts; and

(iii) the accuracy, quality, timeliness, validity, reliability, usability, information technology security, and cost-effectiveness of obtaining commercial weather data from private sector providers.

(3) Authorization of appropriations

For each of fiscal years 2019 through 2023, there are authorized to be appropriated for procurement, acquisition, and construction at the National Environmental Satellite, Data, and Information Service, $6,000,000 to carry out this subsection.

(d) Obtaining future data

If an assessment under subsection (c)(2)(B) demonstrates the ability of commercial weather data to meet data and metadata standards and specifications published under subsection (c)(1), the Under Secretary shall—

(1) where appropriate, cost-effective, and feasible, obtain commercial weather data from private sector providers;

(2) as early as possible in the acquisition process for any future National Oceanic and Atmospheric Administration meteorological space system, consider whether there is a suitable, cost-effective, commercial capability available or that will be available to meet any or all of the observational requirements by the planned operational date of the system;

(3) if a suitable, cost-effective, commercial capability is or will be available as described in paragraph (2), determine whether it is in the national interest to develop a governmental meteorological space system; and

(4) submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report detailing any determination made under paragraphs (2) and (3).

(e) Data sharing practices

The Under Secretary shall continue to meet the international meteorological agreements into which the Under Secretary has entered, including practices set forth through World Meteorological Organization Resolution 40.

(Pub. L. 115–25, title III, §302, Apr. 18, 2017, 131 Stat. 103; Pub. L. 115–423, §7(b), Jan. 7, 2019, 132 Stat. 5461.)

Editorial Notes

Amendments

2019—Subsec. (c)(3). Pub. L. 115–423 substituted "2019 through 2023" for "2017 through 2020" and inserted "the" before "National".

[1] *So in original. Probably should be preceded by "the".*

§8533. Unnecessary duplication

In meeting the requirements under this subchapter, the Under Secretary shall avoid unnecessary duplication between public and private sources of data and the corresponding expenditure of funds and employment of personnel.

(Pub. L. 115–25, title III, §303, Apr. 18, 2017, 131 Stat. 105.)

SUBCHAPTER III—FEDERAL WEATHER COORDINATION

§8541. Environmental Information Services Working Group

(a) Establishment

The National Oceanic and Atmospheric Administration Science Advisory Board shall continue to maintain a standing working group named the Environmental Information Services Working Group (in this section referred to as the "Working Group")—

(1) to provide advice for prioritizing weather research initiatives at the National Oceanic and Atmospheric Administration to produce real improvement in weather forecasting;

(2) to provide advice on existing or emerging technologies or techniques that can be found in private industry or the research community that could be incorporated into forecasting at the National Weather Service to improve forecasting skill;

(3) to identify opportunities to improve—

(A) communications between weather forecasters, Federal, State, local, tribal, and other emergency management personnel, and the public; and

(B) communications and partnerships among the National Oceanic and Atmospheric Administration and the private and academic sectors; and

(4) to address such other matters as the Science Advisory Board requests of the Working Group.

(b) Composition

(1) In general

The Working Group shall be composed of leading experts and innovators from all relevant fields of science and engineering including atmospheric chemistry, atmospheric physics, meteorology, hydrology, social science, risk communications, electrical engineering, and computer sciences. In carrying out this section, the Working Group may organize into subpanels.

(2) Number

The Working Group shall be composed of no fewer than 15 members. Nominees for the Working Group may be forwarded by the Working Group for approval by the Science Advisory Board. Members of the Working Group may choose a chair (or co-chairs) from among their number with approval by the Science Advisory Board.

(c) Annual report

Not less frequently than once each year, the Working Group shall transmit to the Science Advisory Board for submission to the Under Secretary a report on progress made by National Oceanic and Atmospheric Administration in adopting the Working Group's recommendations. The Science Advisory Board shall transmit this report to the Under Secretary. Within 30 days of receipt of such report, the Under Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a copy of such report.

(Pub. L. 115–25, title IV, §401, Apr. 18, 2017, 131 Stat. 105.)

§8542. Interagency weather research and forecast innovation coordination

(a) Establishment

The Director of the Office of Science and Technology Policy shall establish an Interagency Committee for Advancing Weather Services to improve coordination of relevant weather research and forecast innovation activities across the Federal Government. The Interagency Committee shall—

(1) include participation by the National Aeronautics and Space Administration, the Federal Aviation Administration, National Oceanic and Atmospheric Administration and its constituent elements, the National Science Foundation, and such other agencies involved in weather forecasting research as the President determines are appropriate;

(2) identify and prioritize top forecast needs and coordinate those needs against budget requests and program initiatives across participating offices and agencies; and

(3) share information regarding operational needs and forecasting improvements across relevant agencies.

(b) Co-chair

The Federal Coordinator for Meteorology shall serve as a co-chair of this panel.

(c) Further coordination

The Director of the Office of Science and Technology Policy shall take such other steps as are necessary to coordinate the activities of the Federal Government with those of the United States weather industry, State governments, emergency managers, and academic researchers.

(Pub. L. 115–25, title IV, §402, Apr. 18, 2017, 131 Stat. 106.)

§8543. Office of Oceanic and Atmospheric Research and National Weather Service exchange program

(a) In general

The Assistant Administrator for Oceanic and Atmospheric Research and the Director of National [1] Weather Service may establish a program to detail Office of Oceanic and Atmospheric Research personnel to the National Weather Service and National Weather Service personnel to the Office of Oceanic and Atmospheric Research.

(b) Goal

The goal of this program is to enhance forecasting innovation through regular, direct interaction between the Office of Oceanic and Atmospheric Research's world-class scientists and the National Weather Service's operational staff.

(c) Elements

The program shall allow up to 10 Office of Oceanic and Atmospheric Research staff and National Weather Service staff to spend up to 1 year on detail. Candidates shall be jointly selected by the Assistant Administrator for Oceanic and Atmospheric Research and the Director of the National Weather Service.

(d) Annual report

Not less frequently than once each year, the Under Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on participation in such program and shall highlight any innovations that come from this interaction.

(Pub. L. 115–25, title IV, §403, Apr. 18, 2017, 131 Stat. 107.)

[1] So in original. Probably should be preceded by "the".

§8544. Visiting fellows at National Weather Service

(a) In general

The Director of the National Weather Service may establish a program to host postdoctoral fellows and academic researchers at any of the National Centers for Environmental Prediction.

(b) Goal

This program shall be designed to provide direct interaction between forecasters and talented academic and private sector researchers in an effort to bring innovation to forecasting tools and techniques to the National Weather Service.

(c) Selection and appointment

Such fellows shall be competitively selected and appointed for a term not to exceed 1 year.

(Pub. L. 115–25, title IV, §404, Apr. 18, 2017, 131 Stat. 107.)

§8545. Warning coordination meteorologists at weather forecast offices of National Weather Service

(a) Designation of warning coordination meteorologists

(1) In general

The Director of the National Weather Service shall designate at least one warning coordination meteorologist at each weather forecast office of the National Weather Service.

(2) No additional employees authorized

Nothing in this section shall be construed to authorize or require a change in the authorized number of full time equivalent employees in the National Weather Service or otherwise result in the employment of any additional employees.

(3) Performance by other employees

Performance of the responsibilities outlined in this section is not limited to the warning coordination meteorologist position.

(b) Primary role of warning coordination meteorologists

The primary role of the warning coordination meteorologist shall be to carry out the responsibilities required by this section.

(c) Responsibilities

(1) In general

Subject to paragraph (2), consistent with the analysis described in section 409,[1] and in order to increase impact-based decision support services, each warning coordination meteorologist designated under subsection (a) shall—

(A) be responsible for providing service to the geographic area of responsibility covered by the weather forecast office at which the warning coordination meteorologist is employed to help ensure that users of products of the National Weather Service can respond effectively to improve outcomes from weather events;

(B) liaise with users of products and services of the National Weather Service, such as the public, media outlets, users in the aviation, marine, and agricultural communities, and forestry, land, and water management interests, to evaluate the adequacy and usefulness of the products and services of the National Weather Service;

(C) collaborate with such weather forecast offices and State, local, and tribal government agencies as the Director considers appropriate in developing, proposing, and implementing plans to develop, modify, or tailor products and services of the National Weather Service to improve the usefulness of such products and services;

(D) ensure the maintenance and accuracy of severe weather call lists, appropriate office severe weather policy or procedures, and other severe weather or dissemination methodologies or strategies; and

(E) work closely with State, local, and tribal emergency management agencies, and other agencies related to disaster management, to ensure a planned, coordinated, and effective preparedness and response effort.

(2) Other staff

The Director may assign a responsibility set forth in paragraph (1) to such other staff as the Director considers appropriate to carry out such responsibility.

(d) Additional responsibilities

(1) In general

Subject to paragraph (2), a warning coordination meteorologist designated under subsection (a) may—

(A) work with a State agency to develop plans for promoting more effective use of products and services of the National Weather Service throughout the State;

(B) identify priority community preparedness objectives;

(C) develop plans to meet the objectives identified under paragraph (2); and

(D) conduct severe weather event preparedness planning and citizen education efforts with and through various State, local, and tribal government agencies and other disaster management-related organizations.

(2) Other staff

The Director may assign a responsibility set forth in paragraph (1) to such other staff as the Director considers appropriate to carry out such responsibility.

(e) Placement with State and local emergency managers

(1) In general

In carrying out this section, the Director of the National Weather Service may place a warning coordination meteorologist designated under subsection (a) with a State or local emergency manager if the Director considers doing so is necessary or convenient to carry out this section.

(2) Treatment

If the Director determines that the placement of a warning coordination meteorologist placed with a State or local emergency manager under paragraph (1) is near a weather forecast office of the National Weather Service, such placement shall be treated as designation of the warning coordination meteorologist at such weather forecast office for purposes of subsection (a).

(Pub. L. 115–25, title IV, §405, Apr. 18, 2017, 131 Stat. 107.)

Editorial Notes

References in Text

Section 409, referred to in subsec. (c)(1), is section 409 of Pub. L. 115–25, title IV, Apr. 18, 2017, 131 Stat. 112, which is not classified to the Code.

[1] *See References in Text note below.*

§8546. National Oceanic and Atmospheric Administration Weather Ready All Hazards Award Program

(a) Program

The Director of the National Weather Service is authorized to establish the National Oceanic and Atmospheric Administration Weather Ready All Hazards Award Program. This award program shall provide annual awards to honor individuals or organizations that use or provide National Oceanic and Atmospheric Administration Weather Radio All Hazards receivers or transmitters to save lives and protect property. Individuals or organizations that utilize other early warning tools or applications also qualify for this award.

(b) Goal

This award program draws attention to the life-saving work of the National Oceanic and Atmospheric Administration Weather Ready All Hazards Program, as well as emerging tools and applications, that provide real-time warning to individuals and communities of severe weather or other hazardous conditions.

(c) Program elements

(1) Nominations

Nominations for this award shall be made annually by the Weather Field Offices to the Director of the National Weather Service. Broadcast meteorologists, weather radio manufacturers and weather warning tool and application developers, emergency managers, and public safety officials may nominate individuals or organizations to their local Weather Field Offices, but the final list of award nominees must come from the Weather Field Offices.

(2) Selection of awardees

Annually, the Director of the National Weather Service shall choose winners of this award whose timely actions, based on National Oceanic and Atmospheric Administration Weather Radio All Hazards receivers or transmitters or other early warning tools and applications, saved lives or property, or demonstrated public service in support of weather or all hazard warnings.

(3) Award ceremony

The Director of the National Weather Service shall establish a means of making these awards to provide maximum public awareness of the importance of National Oceanic and Atmospheric Administration Weather Radio, and such other warning tools and applications as are represented in the awards.

(Pub. L. 115–25, title IV, §407, Apr. 18, 2017, 131 Stat. 111.)

§8547. Report on contract positions at National Weather Service

(a) Report required

Not later than 180 days after April 18, 2017, the Under Secretary shall submit to Congress a report on the use of contractors at the National Weather Service for the most recently completed fiscal year.

(b) Contents

The report required by subsection (a) shall include, with respect to the most recently completed fiscal year, the following:

(1) The total number of full-time equivalent employees at the National Weather Service, disaggregated by each equivalent level of the General Schedule.

(2) The total number of full-time equivalent contractors at the National Weather Service, disaggregated by each equivalent level of the General Schedule that most closely approximates their duties.

(3) The total number of vacant positions at the National Weather Service on the day before April 18, 2017, disaggregated by each equivalent level of the General Schedule.

(4) The five most common positions filled by full-time equivalent contractors at the National Weather Service and the equivalent level of the General Schedule that most closely approximates the duties of such positions.

(5) Of the positions identified under paragraph (4), the percentage of full-time equivalent contractors in those positions that have held a prior position at the National Weather Service or another entity in National [1] Oceanic and Atmospheric Administration.

(6) The average full-time equivalent salary for Federal employees at the National Weather Service for each equivalent level of the General Schedule.

(7) The average salary for full-time equivalent contractors performing at each equivalent level of the General Schedule at the National Weather Service.

(8) A description of any actions taken by the Under Secretary to respond to the issues raised by the Inspector General of the Department of Commerce regarding the hiring of former National Oceanic and Atmospheric

Administration employees as contractors at the National Weather Service such as the issues raised in the Investigative Report dated June 2, 2015 (OIG–12–0447).

(c) Annual publication

For each fiscal year after the fiscal year covered by the report required by subsection (a), the Under Secretary shall, not later than 180 days after the completion of the fiscal year, publish on a publicly accessible Internet website the information described in paragraphs (1) through (8) of subsection (b) for such fiscal year.

(Pub. L. 115–25, title IV, §410, Apr. 18, 2017, 131 Stat. 112.)

Editorial Notes

References in Text

The General Schedule, referred to in subsec. (b), is set out under section 5332 of Title 5, Government Organization and Employees.

[1] *So in original. Probably should be preceded by "the".*

§8548. Weather enterprise outreach

(a) In general

The Under Secretary may establish mechanisms for outreach to the weather enterprise—

(1) to assess the weather forecasts and forecast products provided by the National Oceanic and Atmospheric Administration; and

(2) to determine the highest priority weather forecast needs of the community described in subsection (b).

(b) Outreach community

In conducting outreach under subsection (a), the Under Secretary shall contact leading experts and innovators from relevant stakeholders, including the representatives from the following:

(1) State or local emergency management agencies.
(2) State agriculture agencies.
(3) Indian tribes (as defined in section 5304 of title 25) and Native Hawaiians (as defined in section 7517 of title 20).
(4) The private aerospace industry.
(5) The private earth observing industry.
(6) The operational forecasting community.
(7) The academic community.
(8) Professional societies that focus on meteorology.
(9) Such other stakeholder groups as the Under Secretary considers appropriate.

(Pub. L. 115–25, title IV, §412, Apr. 18, 2017, 131 Stat. 113.)

§8549. Hurricane hunter aircraft

(a) Backup capability

The Under Secretary shall acquire backup for the capabilities of the WP–3D Orion and G–IV hurricane aircraft of the National Oceanic and Atmospheric Administration that is sufficient to prevent a single point of failure.

(b) Authority to enter agreements

In order to carry out subsection (a), the Under Secretary shall negotiate and enter into 1 or more agreements or contracts, to the extent practicable and necessary, with governmental and non-governmental entities.

(c) Future technology

The Under Secretary shall continue the development of Airborne Phased Array Radar under the United States Weather Research Program.

(d) Authorization of appropriations

For each of fiscal years 2017 through 2020, support for implementing subsections (a) and (b) is authorized out of funds appropriated to the Office of Marine and Aviation Operations.

(Pub. L. 115–25, title IV, §413, Apr. 18, 2017, 131 Stat. 114.)

§8550. Improvements to Cooperative Observer Program of National Weather Service

(a) In general

The Under Secretary of Commerce for Oceans and Atmosphere, acting through the National Weather Service, shall improve the Cooperative Observer Program by—

(1) providing support to—

(A) State-coordinated programs relating to the Program; and

(B) States and regions where observations provided through the Program are scarce;

(2) working with State weather service headquarters to increase participation in the Program and to add stations in States and regions described in paragraph (1)(B);

(3) where feasible, ensuring that data streams from stations that have been contributing data to the Program for more than 50 years are maintained and continually staffed by volunteers;

(4) prioritizing the recruitment of new volunteers for the Program;

(5) ensuring that opportunities exist for automated reporting to lessen the burden on volunteers to collect and report data by hand; and

(6) ensuring that integrated reporting is available for qualitative observations that cannot be automated, such as drought conditions, snow observations, and hazardous weather events, to ensure that volunteers in the Program can report and upload observations quickly and easily.

(b) Coordination with States and regions

Not less frequently than every 180 days, the National Weather Service shall coordinate with State and regional offices with respect to the status of Cooperative Observer Program stations.

(c) Coordination with Federal agencies

The National Weather Service shall coordinate with other Federal agencies, including the Forest Service, the Department of Agriculture, and the United States Geological Survey, to leverage opportunities to grow the Cooperative Observer Program network and to more effectively use existing infrastructure, weather stations, and staff of the Program.

(Pub. L. 115–423, §8, Jan. 7, 2019, 132 Stat. 5461.)

Editorial Notes

Codification

This section was enacted as part of the National Integrated Drought Information System Reauthorization Act of 2018, and not as part of the Weather Research and Forecasting Innovation Act of 2017 which comprises this chapter.

SUBCHAPTER IV—IMPROVING FEDERAL PRECIPITATION INFORMATION

§8561. Study on precipitation estimation

(a) In general

Not later than 90 days after December 16, 2022, the Administrator, in consultation with other Federal agencies as appropriate, shall seek to enter an agreement with the National Academies—

(1) to conduct a study on the state of practice and research needs for precipitation estimation, including probable maximum precipitation estimation; and

(2) to submit, not later than 24 months after the date on which such agreement is finalized, to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, and make publicly available on a website, a report on the results of the study under paragraph (1).

(b) Study

The report under subsection (a) shall include the following:

(1) An examination of the current state of practice for precipitation estimation at scales appropriate for decisionmaker needs, and rationale for further evolution of this field.

(2) An evaluation of best practices for precipitation estimation that are based on the best-available science, include considerations of non-stationarity, and can be utilized by the user community.

(3) A framework for—

(A) the development of a National Guidance Document for estimating extreme precipitation in future conditions; and

(B) evaluation of the strengths and challenges of the full spectrum of approaches, including for probable maximum precipitation studies.

(4) A description of existing research needs in the field of precipitation estimation in order to modernize current methodologies and consider non-stationarity.

(5) A description of in-situ, airborne, and space-based observation requirements, that could enhance precipitation estimation and development of models, including an examination of the use of geographic information systems and geospatial technology for integration, analysis, and visualization of precipitation data.

(6) A recommended plan for a Federal research and development program, including specifications for costs, timeframes, and responsible agencies for addressing identified research needs.

(7) An analysis of the respective roles in precipitation estimation of various Federal agencies, academia, State, tribal, territorial, and local governments, and other public and private stakeholders.

(8) Recommendations for data management to promote long-term needs such as enabling retrospective analyses and data discoverability, interoperability, and reuse.

(9) Recommendations for how data and services from the entire enterprise can be best leveraged by the Federal Government.

(10) A description of non-Federal precipitation data, its accessibility by the Federal Government, and ways for National Oceanic and Atmospheric Administration to improve or expand such datasets.

(c) Authorization of appropriations

There is authorized $1,500,000 to the National Oceanic and Atmospheric Administration to carry out this study.

(Pub. L. 115–25, title VI, §601, as added Pub. L. 117–229, div. D, §2(a), Dec. 16, 2022, 136 Stat. 2313.)

§8562. Improving probable maximum precipitation estimates

(a) In general

Not later than 90 days after the date on which the National Academies makes public the report under section 8561 of this title, the Administrator, in consideration of the report recommendations, shall consult with relevant partners, including users of the data, on the development of a plan to—

(1) not later than 6 years after the completion of such report and not less than every 10 years thereafter, update probable maximum precipitation estimates for the United States, such that each update considers non-stationarity;

(2) coordinate with partners to conduct research in the field of extreme precipitation estimation, in accordance with the research needs identified in such report;

(3) make publicly available, in a searchable, interoperable format, all probable maximum precipitation studies developed by the National Oceanic and Atmospheric Administration that the Administrator has the legal right to redistribute and deemed to be at an appropriate state of development on an internet website of the National Oceanic and Atmospheric Administration; and

(4) ensure all probable maximum precipitation estimate data, products, and supporting documentation and metadata developed by the National Oceanic and Atmospheric Administration are preserved, curated, and served by the National Oceanic and Atmospheric Administration, as appropriate.

(b) National guidance document for the development of probable maximum precipitation estimates

The Administrator, in collaboration with Federal agencies, State, territorial, Tribal and local governments, academia, and other partners the Administrator deems appropriate, shall develop a National Guidance Document that—

(1) provides best practices that can be followed by Federal and State regulatory agencies, private meteorological consultants, and other users that perform probable maximum precipitation studies;

(2) considers the recommendations provided in the National Academies study under section 8561 of this title;

(3) facilitates review of probable maximum precipitation studies by regulatory agencies; and

(4) provides confidence in regional and site-specific probable maximum precipitation estimates.

(c) Publication

Not later than 2 years after the date on which the National Academies makes public the report under section 8561 of this title, the Administrator shall make publicly available the National Guidance Document under subsection (b) on an internet website of the National Oceanic and Atmospheric Administration.

(d) Updates

The Administrator shall update the National Guidance Document not less than once every 10 years after the publication of the National Guidance Document under subsection (c) and publish such updates in accordance with such

subsection.

(Pub. L. 115–25, title VI, §602, as added Pub. L. 117–229, div. D, §2(a), Dec. 16, 2022, 136 Stat. 2314.)

§8563. Definitions

In this subchapter:

(1) Administrator

The term "Administrator" means the Under Secretary of Commerce for Oceans and Atmosphere and Administrator of the National Oceanic and Atmospheric Administration.

(2) National Academies

The term "National Academies" means the National Academies of Sciences, Engineering, and Medicine.

(3) United States

The term "United States" means, collectively, each State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands of the United States, and any other territory or possession of the United States.

(Pub. L. 115–25, title VI, §603, as added Pub. L. 117–229, div. D, §2(a), Dec. 16, 2022, 136 Stat. 2315.)