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114TH CONGRESS
1ST SESSION

H. R. 1561

[Report No. 114–126]

To improve the National Oceanic and Atmospheric Administration’s weather research through a focused program of investment on affordable and attainable advances in observational, computing, and modeling capabilities to support substantial improvement in weather forecasting and prediction of high impact weather events, to expand commercial opportunities for the provision of weather data, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 24, 2015

Mr. LUCAS (for himself, Ms. BONAMICI, Mr. BRIDENSTINE, Mr. SMITH of Texas, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. STEWART, and Mr. ROHRABACHER) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

MAY 19, 2015

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

[For text of introduced bill, see copy of bill as introduced on March 24, 2015]

A BILL

To improve the National Oceanic and Atmospheric Administration's weather research through a focused program of investment on affordable and attainable advances in observational, computing, and modeling capabilities to support substantial improvement in weather forecasting and prediction of high impact weather events, to expand commercial opportunities for the provision of weather data, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “Weather Research and*
5 *Forecasting Innovation Act of 2015”.*

6 **SEC. 2. PUBLIC SAFETY PRIORITY.**

7 *In accordance with NOAA’s critical mission to provide*
8 *science, service, and stewardship, the Under Secretary shall*
9 *prioritize weather research, across all weather programs, to*
10 *improve weather data, forecasts, and warnings for the pro-*
11 *tection of life and property and the enhancement of the na-*
12 *tional economy.*

13 **SEC. 3. WEATHER RESEARCH AND FORECASTING INNOVA-**
14 **TION.**

15 (a) *PROGRAM.—The Assistant Administrator for OAR*
16 *shall conduct a program to develop improved understanding*
17 *of and forecast capabilities for atmospheric events and their*
18 *impacts, placing priority on developing more accurate,*
19 *timely, and effective warnings and fore-casts of high impact*
20 *weather events that endanger life and property.*

21 (b) *PROGRAM ELEMENTS.—The program described in*
22 *subsection (a) shall focus on the following activities:*

23 (1) *Improving the fundamental understanding of*
24 *weather consistent with section 2, including the*

1 *boundary layer and other atmospheric processes af-*
2 *fecting high impact weather events.*

3 *(2) Improving the understanding of how the pub-*
4 *lic receives, interprets, and responds to warnings and*
5 *forecasts of high impact weather events that endanger*
6 *life and property.*

7 *(3) Research and development, and transfer of*
8 *knowledge, technologies, and applications to the NWS*
9 *and other appropriate agencies and entities, includ-*
10 *ing the American weather industry and academic*
11 *partners, related to—*

12 *(A) advanced radar, radar networking tech-*
13 *nologies, and other ground-based technologies, in-*
14 *cluding those emphasizing rapid, fine-scale sens-*
15 *ing of the boundary layer and lower troposphere,*
16 *and the use of innovative, dual-polarization,*
17 *phased array technologies;*

18 *(B) aerial weather observing systems;*

19 *(C) high performance computing and infor-*
20 *mation technology and wireless communication*
21 *networks;*

22 *(D) advanced numerical weather prediction*
23 *systems and forecasting tools and techniques that*
24 *improve the forecasting of timing, track, inten-*

1 *sity, and severity of high impact weather, in-*
2 *cluding through—*

3 *(i) the development of more effective*
4 *mesoscale models;*

5 *(ii) more effective use of existing, and*
6 *the development of new, regional and na-*
7 *tional cloud-resolving models;*

8 *(iii) enhanced global weather models;*
9 *and*

10 *(iv) integrated assessment models;*

11 *(E) quantitative assessment tools for meas-*
12 *uring the impact and value of data and observ-*
13 *ing systems, including OSSEs (as described in*
14 *section 8), OSEs, and AOAs;*

15 *(F) atmospheric chemistry and interactions*
16 *essential to accurately characterizing atmos-*
17 *pheric composition and predicting meteorological*
18 *processes, including cloud microphysical, pre-*
19 *cipitation, and atmospheric electrification proc-*
20 *esses, to more effectively understand their role in*
21 *severe weather; and*

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

1 (4) *A technology transfer initiative, carried out*
2 *jointly and in coordination with the Assistant Ad-*
3 *ministrator for NWS, and in cooperation with the*
4 *American weather industry and academic partners,*
5 *to ensure continuous development and transition of*
6 *the latest scientific and technological advances into*
7 *NWS operations and to establish a process to sunset*
8 *outdated and expensive operational methods and tools*
9 *to enable cost-effective transfer of new methods and*
10 *tools into operations.*

11 (c) *EXTRAMURAL RESEARCH.—*

12 (1) *IN GENERAL.—In carrying out the program*
13 *under this section, the Assistant Administrator for*
14 *OAR shall collaborate with and support the non-Fed-*
15 *eral weather research community, which includes in-*
16 *stitutions of higher education, private entities, and*
17 *nongovernmental organizations, by making funds*
18 *available through competitive grants, contracts, and*
19 *cooperative agreements.*

20 (2) *SENSE OF CONGRESS.—It is the sense of*
21 *Congress that not less than 30 percent of the funds for*
22 *weather research and development at OAR should be*
23 *made available for the purpose described in para-*
24 *graph (1).*

1 (d) *REPORT.*—*The Under Secretary shall transmit to*
2 *Congress annually, concurrently with NOAA’s budget re-*
3 *quest, a description of current and planned activities under*
4 *this section.*

5 **SEC. 4. TORNADO WARNING IMPROVEMENT AND EXTEN-**
6 **SION PROGRAM.**

7 (a) *IN GENERAL.*—*The Under Secretary, in collabora-*
8 *tion with the American weather industry and academic*
9 *partners, shall establish a tornado warning improvement*
10 *and extension program.*

11 (b) *GOAL.*—*The goal of such program shall be to reduce*
12 *the loss of life and economic losses from tornadoes through*
13 *the development and extension of accurate, effective, and*
14 *timely tornado forecasts, predictions, and warnings, includ-*
15 *ing the prediction of tornadoes beyond one hour in advance.*

16 (c) *PROGRAM PLAN.*—*Not later than 6 months after*
17 *the date of enactment of this Act, the Assistant Adminis-*
18 *trator for OAR, in coordination with the Assistant Admin-*
19 *istrator for NWS, shall develop a program plan that details*
20 *the specific research, development, and technology transfer*
21 *activities, as well as corresponding resources and timelines,*
22 *necessary to achieve the program goal.*

23 (d) *BUDGET FOR PLAN.*—*Following completion of the*
24 *plan, the Assistant Administrator for OAR, in coordination*
25 *with the Assistant Administrator for NWS, shall transmit*

1 *annually to Congress a proposed budget corresponding to*
2 *the activities identified in the plan.*

3 **SEC. 5. HURRICANE FORECAST IMPROVEMENT PROGRAM.**

4 (a) *IN GENERAL.*—*The Under Secretary, in collabora-*
5 *tion with the American weather industry and academic*
6 *partners, shall maintain the Hurricane Forecast Improve-*
7 *ment Program (HFIP).*

8 (b) *GOAL.*—*The goal of such program shall be to de-*
9 *velop and extend accurate hurricane forecasts and warnings*
10 *in order to reduce loss of life, injury, and damage to the*
11 *economy.*

12 (c) *PROGRAM PLAN.*—*Not later than 6 months after*
13 *the date of enactment of this Act, the Assistant Adminis-*
14 *trator for OAR, in consultation with the Assistant Admin-*
15 *istrator for NWS, shall develop a program plan that details*
16 *the specific research, development, and technology transfer*
17 *activities, as well as corresponding resources and timelines,*
18 *necessary to achieve the program goal.*

19 (d) *BUDGET FOR PLAN.*—*Following completion of the*
20 *plan, the Assistant Administrator for OAR, in consultation*
21 *with the Assistant Administrator for NWS, shall transmit*
22 *annually to Congress a proposed budget corresponding to*
23 *the activities identified in the plan.*

1 **SEC. 6. WEATHER RESEARCH AND DEVELOPMENT PLAN-**
2 **NING.**

3 *Not later than 6 months after the date of enactment*
4 *of this Act, and annually thereafter, the Assistant Adminis-*
5 *trator for OAR, in coordination with the Assistant Admin-*
6 *istrators for NWS and NESDIS, shall issue a research and*
7 *development and research to operations plan to restore and*
8 *maintain United States leadership in numerical weather*
9 *prediction and forecasting that—*

10 *(1) describes the forecasting skill and technology*
11 *goals, objectives, and progress of NOAA in carrying*
12 *out the program conducted under section 3;*

13 *(2) identifies and prioritizes specific research*
14 *and development activities, and performance metrics,*
15 *weighted to meet the operational weather mission of*
16 *NWS to achieve a weather-ready Nation;*

17 *(3) describes how the program will collaborate*
18 *with stakeholders, including the American weather in-*
19 *dustry and academic partners; and*

20 *(4) identifies, through consultation with the Na-*
21 *tional Science Foundation, American weather indus-*
22 *try, and academic partners, research necessary to en-*
23 *hance the integration of social science knowledge into*
24 *weather forecast and warning processes, including to*
25 *improve the communication of threat information*
26 *necessary to enable improved severe weather planning*

1 *and decisionmaking on the part of individuals and*
2 *communities.*

3 **SEC. 7. OBSERVING SYSTEM PLANNING.**

4 *The Under Secretary shall—*

5 *(1) develop and maintain a prioritized list of ob-*
6 *servaion data requirements necessary to ensure*
7 *weather forecasting capabilities to protect life and*
8 *property to the maximum extent practicable;*

9 *(2) undertake, using OSSEs, OSEs, AOAs, and*
10 *other appropriate assessment tools, ongoing system-*
11 *atic evaluations of the combination of observing sys-*
12 *tems, data, and information needed to meet the re-*
13 *quirements listed under paragraph (1), assessing var-*
14 *ious options to maximize observational capabilities*
15 *and their cost-effectiveness;*

16 *(3) identify current and potential future data*
17 *gaps in observing capabilities related to the require-*
18 *ments listed under paragraph (1); and*

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

21 **SEC. 8. OBSERVING SYSTEM SIMULATION EXPERIMENTS.**

22 *(a) IN GENERAL.—In support of the requirements of*
23 *section 7, the Assistant Administrator for OAR shall under-*
24 *take OSSEs to quantitatively assess the relative value and*

1 *benefits of observing capabilities and systems. Technical*
2 *and scientific OSSE evaluations—*

3 *(1) may include assessments of the impact of ob-*
4 *serving capabilities on—*

5 *(A) global weather prediction;*

6 *(B) hurricane track and intensity fore-*
7 *casting;*

8 *(C) tornado warning lead times and accu-*
9 *racy;*

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

12 *(E) prediction of storms that have the po-*
13 *tential to cause extreme precipitation and flood-*
14 *ing lasting from 6 hours to 1 week; and*

15 *(2) shall be conducted in cooperation with other*
16 *appropriate entities within NOAA, other Federal*
17 *agencies, the American weather industry, and aca-*
18 *demie partners to ensure the technical and scientific*
19 *merit of OSSE results.*

20 *(b) REQUIREMENTS.—OSSEs shall quantitatively—*

21 *(1) determine the potential impact of proposed*
22 *space-based, suborbital, and in situ observing systems*
23 *on analyses and forecasts, including potential im-*
24 *pacts on extreme weather events across all parts of the*
25 *Nation;*

1 (2) *evaluate and compare observing system de-*
2 *sign options; and*

3 (3) *assess the relative capabilities and costs of*
4 *various observing systems and combinations of observ-*
5 *ing systems in providing data necessary to protect life*
6 *and property.*

7 (c) *IMPLEMENTATION.—OSSEs—*

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

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

16 (d) *PRIORITY OSSEs.—*

17 (1) *GLOBAL NAVIGATION SATELLITE SYSTEM*
18 *RADIO OCCULTATION.—Not later than December 31,*
19 *2015, the Assistant Administrator for OAR shall com-*
20 *plete an OSSE to assess the value of data from Global*
21 *Navigation Satellite System Radio Occultation.*

22 (2) *GEOSTATIONARY HYPERSPECTRAL SOUNDER*
23 *GLOBAL CONSTELLATION.—Not later than December*
24 *31, 2016, the Assistant Administrator for OAR shall*
25 *complete an OSSE to assess the value of data from*

1 *a geostationary hyperspectral sounder global con-*
2 *stellation.*

3 *(e) RESULTS.—Upon completion of all OSSEs, results*
4 *shall be publicly released and accompanied by an assess-*
5 *ment of related private and public sector weather data*
6 *sourcing options, including their availability, affordability,*
7 *and cost effectiveness. Such assessments shall be developed*
8 *in accordance with section 50503 of title 51, United States*
9 *Code.*

10 **SEC. 9. COMPUTING RESOURCES PRIORITIZATION REPORT.**

11 *Not later than 12 months after the date of enactment*
12 *of this Act, and annually thereafter, the NOAA Chief Infor-*
13 *mation Officer, in coordination with the Assistant Admin-*
14 *istrator for OAR and the Assistant Administrator for NWS,*
15 *shall produce and make publicly available a report that ex-*
16 *plains how NOAA intends to—*

17 *(1) continually support upgrades to pursue the*
18 *fastest, most powerful, and cost effective high perform-*
19 *ance computing technologies in support of its weather*
20 *prediction mission;*

21 *(2) ensure a balance between the research to op-*
22 *erations requirements to develop the next generation*
23 *of regional and global models as well as highly reli-*
24 *able operational models;*

1 (3) *take advantage of advanced development con-*
2 *cepts to, as appropriate, make next generation weath-*
3 *er prediction models available in beta-test mode to*
4 *operational forecasters, the American weather indus-*
5 *try, and partners in academic and government re-*
6 *search; and*

7 (4) *use existing computing resources to improve*
8 *advanced research and operational weather pre-*
9 *diction.*

10 **SEC. 10. COMMERCIAL WEATHER DATA.**

11 (a) *AMENDMENT.*—*Section 60161 of title 51, United*
12 *States Code, is amended by adding at the end the following:*
13 *“This prohibition shall not extend to—*

14 *“(1) the purchase of weather data through con-*
15 *tracts with commercial providers; or*

16 *“(2) the placement of weather satellite instru-*
17 *ments on cohosted government or private payloads.”.*

18 (b) *STRATEGY.*—

19 (1) *IN GENERAL.*—*Not later than 6 months after*
20 *the date of enactment of this Act, the Secretary of*
21 *Commerce, in consultation with the Under Secretary,*
22 *shall transmit to the Committee on Science, Space,*
23 *and Technology of the House of Representatives and*
24 *the Committee on Commerce, Science, and Transpor-*
25 *tation of the Senate a strategy to enable the procure-*

1 *ment of quality commercial weather data. The strat-*
2 *egy shall assess the range of commercial opportuni-*
3 *ties, including public-private partnerships, for obtain-*
4 *ing surface-based, aviation-based, and space-based*
5 *weather observations. The strategy shall include the*
6 *expected cost effectiveness of these opportunities as*
7 *well as provide a plan for procuring data, including*
8 *an expected implementation timeline, from these non-*
9 *governmental sources, as appropriate.*

10 (2) *REQUIREMENTS.—The strategy shall in-*
11 *clude—*

12 (A) *an analysis of financial or other bene-*
13 *fits to, and risks associated with, acquiring com-*
14 *mercial weather data or services, including*
15 *through multiyear acquisition approaches;*

16 (B) *an identification of methods to address*
17 *planning, programming, budgeting, and execu-*
18 *tion challenges to such approaches, including—*

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

21 (ii) *how data may be acquired through*
22 *commercial experimental or innovative tech-*
23 *niques and then evaluated for integration*
24 *into operational use;*

1 (iii) how to guarantee public access to
2 all forecast-critical data to ensure that the
3 American weather industry and the public
4 continue to have access to information crit-
5 ical to their work; and

6 (iv) in accordance with section 50503
7 of title 51, United States Code, methods to
8 address potential termination liability or
9 cancellation costs associated with weather
10 data or service contracts; and

11 (C) an identification of any changes needed
12 in the requirements development and approval
13 processes of the Department of Commerce to fa-
14 cilitate effective and efficient implementation of
15 such strategy.

16 (3) *AUTHORITY FOR AGREEMENTS.*—*The Assist-*
17 *ant Administrator for NESDIS may enter into*
18 *multiyear agreements necessary to carry out the strat-*
19 *egy developed under this subsection.*

20 (c) *PILOT PROGRAM.*—

21 (1) *CRITERIA.*—*Not later than December 31,*
22 *2015, NOAA shall publish data standards and speci-*
23 *fications for space-based commercial weather data.*

24 (2) *PILOT CONTRACT.*—

1 (A) *CONTRACT.*—Not later than October 1,
2 2016, NOAA shall, through an open competition,
3 enter into at least one pilot contract with a pri-
4 vate sector entity capable of providing data that
5 meet the standards and specifications set by
6 NOAA to provide commercial weather data in a
7 manner that allows NOAA to calibrate and
8 evaluate the data.

9 (B) *ASSESSMENT OF DATA VIABILITY.*—Not
10 later than October 1, 2019, NOAA shall transmit
11 to Congress the results of a determination of the
12 extent to which data provided under the contract
13 entered into under subparagraph (A) meet the
14 criteria published under paragraph (1).

15 (3) *OBTAINING FUTURE DATA.*—NOAA shall, to
16 the extent feasible, obtain commercial weather data
17 from private sector providers.

18 (4) *AUTHORIZATION OF APPROPRIATIONS.*—
19 There are authorized to be appropriated out of funds
20 made available for procurement, acquisition, and con-
21 struction at NESDIS, \$9,000,000 for carrying out
22 this subsection.

1 **SEC. 11. ENVIRONMENTAL INFORMATION SERVICES WORK-**
2 **ING GROUP.**

3 (a) *ESTABLISHMENT.*—*The NOAA Science Advisory*
4 *Board shall continue to maintain a standing working*
5 *group named the Environmental Information Services*
6 *Working Group (in this section referred to as the “Working*
7 *Group”)* to—

8 (1) *provide advice for prioritizing weather re-*
9 *search initiatives at NOAA to produce real improve-*
10 *ment in weather forecasting;*

11 (2) *provide advice on existing or emerging tech-*
12 *nologies or techniques that can be found in private*
13 *industry or the research community that could be in-*
14 *corporated into forecasting at NWS to improve fore-*
15 *casting skill;*

16 (3) *identify opportunities to improve commu-*
17 *nications between weather forecasters, Federal, State,*
18 *local, and tribal emergency management personnel,*
19 *and the public; and to improve communications and*
20 *partnerships among NOAA and the private and aca-*
21 *demie sectors; and*

22 (4) *address such other matters as the Science Ad-*
23 *visory Board requests of the Working Group.*

24 (b) *COMPOSITION.*—

25 (1) *IN GENERAL.*—*The Working Group shall be*
26 *composed of leading experts and innovators from all*

1 *relevant fields of science and engineering including*
2 *atmospheric chemistry, atmospheric physics, meteor-*
3 *ology, hydrology, social science, risk communications,*
4 *electrical engineering, and computer sciences. In car-*
5 *rying out this section, the Working Group may orga-*
6 *nize into subpanels.*

7 (2) *NUMBER.—The Working Group shall be com-*
8 *posed of no fewer than 15 members. Nominees for the*
9 *Working Group may be forwarded by the Working*
10 *Group for approval by the Science Advisory Board.*
11 *Members of the Working Group may choose a chair*
12 *(or co-chairs) from among their number with ap-*
13 *proval by the Science Advisory Board.*

14 (c) *ANNUAL REPORT.—The Working Group shall*
15 *transmit annually to the Science Advisory Board for sub-*
16 *mission to the Under Secretary a report on progress made*
17 *by NOAA in adopting the Working Group's recommenda-*
18 *tions. The Science Advisory Board shall transmit this re-*
19 *port to the Under Secretary. Within 30 days of receipt of*
20 *such report, the Under Secretary shall transmit it to the*
21 *Committee on Science, Space, and Technology of the House*
22 *of Representatives and the Committee on Commerce,*
23 *Science, and Transportation of the Senate.*

1 **SEC. 12. INTERAGENCY WEATHER RESEARCH AND INNOVA-**
2 **TION COORDINATION.**

3 (a) *ESTABLISHMENT.*—*The Director of the Office of*
4 *Science and Technology Policy shall establish an Inter-*
5 *agency Committee for Advancing Weather Services to im-*
6 *prove coordination of relevant weather research and forecast*
7 *innovation activities across the Federal Government. The*
8 *Interagency Committee shall—*

9 (1) *include participation by the National Aero-*
10 *nautics and Space Administration, the Federal Avia-*
11 *tion Administration, NOAA and its constituent ele-*
12 *ments, the National Science Foundation, and such*
13 *other agencies involved in weather forecasting re-*
14 *search as the President determines are appropriate;*

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

19 (3) *share information regarding operational*
20 *needs and forecasting improvements across relevant*
21 *agencies.*

22 (b) *CO-CHAIR.*—*The Federal Coordinator for Meteor-*
23 *ology shall serve as a co-chair of this panel.*

24 (c) *FURTHER COORDINATION.*—*The Director shall take*
25 *such other steps as are necessary to coordinate the activities*
26 *of the Federal Government with those of the American*

1 *weather industry, State governments, emergency managers,*
2 *and academic researchers.*

3 **SEC. 13. OAR AND NWS EXCHANGE PROGRAM.**

4 (a) *IN GENERAL.*—*The Assistant Administrator for*
5 *OAR and the Assistant Administrator for NWS may estab-*
6 *lish a program to detail OAR personnel to the NWS and*
7 *NWS personnel to OAR.*

8 (b) *GOAL.*—*The goal of this program is to enhance*
9 *forecasting innovation through regular, direct interaction*
10 *between OAR’s world-class scientists and NWS’s oper-*
11 *ational staff.*

12 (c) *ELEMENTS.*—*The program shall allow up to 10*
13 *OAR staff and NWS staff to spend up to 1 year on detail.*
14 *Candidates shall be jointly selected by the Assistant Admin-*
15 *istrator for OAR and the Assistant Administrator for NWS.*

16 (d) *REPORT.*—*The Under Secretary shall report annu-*
17 *ally to the Committee on Science, Space, and Technology*
18 *of the House of Representatives and to the Committee on*
19 *Commerce, Science, and Transportation of the Senate on*
20 *participation in such program and shall highlight any in-*
21 *novations that come from this interaction.*

22 **SEC. 14. VISITING FELLOWS AT NWS.**

23 (a) *IN GENERAL.*—*The Assistant Administrator for*
24 *NWS may establish a program to host postdoctoral fellows*

1 *and academic researchers at any of the National Centers*
2 *for Environmental Prediction.*

3 (b) *GOAL.—This program shall be designed to provide*
4 *direct interaction between forecasters and talented academic*
5 *and private sector researchers in an effort to bring innova-*
6 *tion to forecasting tools and techniques available to the*
7 *NWS.*

8 (c) *SELECTION AND APPOINTMENT.—Such fellows*
9 *shall be competitively selected and appointed for a term not*
10 *to exceed 1 year.*

11 **SEC. 15. NOAA WEATHER RADIO ALL HAZARDS “MARK**
12 **TRAIL” AWARD PROGRAM.**

13 (a) *PROGRAM.—The Assistant Administrator for NWS*
14 *is authorized to establish the NOAA Weather Radio All*
15 *Hazards “Mark Trail” Award Program. This award pro-*
16 *gram shall provide annual awards to honor individuals or*
17 *organizations that use or provide NOAA Weather Radio All*
18 *Hazards receivers or transmitters to save lives and protect*
19 *property. Individuals or organizations that utilize other*
20 *early warning tools or applications also qualify for this*
21 *award.*

22 (b) *GOAL.—This award program draws attention to*
23 *the life-saving work of the NOAA Weather Radio All Haz-*
24 *ards program, as well as emerging tools and applications,*

1 *that provide real-time warning to individuals and commu-*
2 *nities of severe weather or other hazardous conditions.*

3 *(c) PROGRAM ELEMENTS.—*

4 *(1) NOMINATIONS.—Nominations for this award*
5 *shall be made annually by the Weather Field Offices*
6 *to the Assistant Administrator for NWS. Broadcast*
7 *meteorologists, weather radio manufacturers and*
8 *weather warning tool and application developers,*
9 *emergency managers and public safety officials may*
10 *nominate individuals and/or organizations to their*
11 *local Weather Field Offices, but the final list of award*
12 *nominees must come from the Weather Field Offices.*

13 *(2) SELECTION OF AWARDEES.—Annually, the*
14 *Assistant Administrator for NWS shall choose win-*
15 *ners of this award whose timely actions, based on*
16 *NOAA weather radio all hazards receivers or trans-*
17 *mitters or other early warning tools and applications,*
18 *saved lives and/or property or demonstrated public*
19 *service in support of weather or all hazard warnings.*

20 *(3) AWARD CEREMONY.—The Assistant Adminis-*
21 *trator for NWS shall establish a means of making*
22 *these awards to provide maximum public awareness*
23 *of the important Weather Radio All Hazards pro-*
24 *gram, and such other warning tools and applications*
25 *as are represented in the awards.*

1 **SEC. 16. DEFINITIONS.**

2 *In this Act:*

3 (1) AOA.—*The term “AOA” means an Analysis*
4 *of Alternatives.*

5 (2) NESDIS.—*The term “NESDIS” means the*
6 *National Environmental Satellite, Data, and Infor-*
7 *mation Service.*

8 (3) NOAA.—*The term “NOAA” means the Na-*
9 *tional Oceanic and Atmospheric Administration.*

10 (4) NWS.—*The term “NWS” means the Na-*
11 *tional Weather Service.*

12 (5) OAR.—*The term “OAR” means the Office of*
13 *Oceanic and Atmospheric Research.*

14 (6) OSE.—*The term “OSE” means an Observ-*
15 *ing System Experiment.*

16 (7) OSSE.—*The term “OSSE” means an Ob-*
17 *serving System Simulation Experiment.*

18 (8) UNDER SECRETARY.—*The term “Under Sec-*
19 *retary” means the Under Secretary of Commerce for*
20 *Oceans and Atmosphere.*

21 **SEC. 17. AUTHORIZATION OF APPROPRIATIONS.**

22 (a) FISCAL YEAR 2015.—*There are authorized to be*
23 *appropriated for fiscal year 2015—*

24 (1) \$90,800,000 to OAR to carry out this Act, of
25 *which—*

1 (A) \$70,000,000 is authorized for weather
2 laboratories and cooperative institutes; and

3 (B) \$20,800,000 is authorized for weather
4 and air chemistry research programs; and

5 (2) out of funds made available for research and
6 development at NOAA, an additional amount of
7 \$16,000,000 for OAR to carry out the joint technology
8 transfer initiative described in section 3(b)(4).

9 (b) *FISCAL YEARS 2016 AND 2017.*—For each of fiscal
10 years 2016 and 2017, there are authorized to be appro-
11 priated to OAR—

12 (1) \$100,000,000 to carry out this Act, of
13 which—

14 (A) \$80,000,000 is authorized for weather
15 laboratories and cooperative institutes; and

16 (B) \$20,000,000 is authorized for weather
17 and air chemistry research programs; and

18 (2) an additional amount of \$20,000,000 for the
19 joint technology transfer initiative described in sec-
20 tion 3(b)(4).

21 (c) *LIMITATION.*—No additional funds are authorized
22 to carry out this Act, and the amendments made by this
23 Act.

Union Calendar No. 91

114TH CONGRESS
1ST Session

H. R. 1561

[Report No. 114-126]

A BILL

To improve the National Oceanic and Atmospheric Administration's weather research through a focused program of investment on affordable and attainable advances in observational, computing, and modeling capabilities to support substantial improvement in weather forecasting and prediction of high impact weather events, to expand commercial opportunities for the provision of weather data, and for other purposes.

MAY 19, 2015

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed