

Calendar No. 455

114TH CONGRESS
2D SESSION**S. 1331****[Report No. 114–248]**

To help enhance commerce through improved seasonal forecasts, and for
other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 13, 2015

Mr. THUNE (for himself and Mr. SCHATZ) introduced the following bill; which
was read twice and referred to the Committee on Commerce, Science, and
Transportation

MAY 9, 2016

Reported by Mr. THUNE, with an amendment

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

To help enhance commerce through improved seasonal
forecasts, 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 “Seasonal Forecasting
5 Improvement Act”.

1 **SEC. 2. IMPROVING SEASONAL FORECASTS FOR AGRI-**
 2 **CULTURE AND COMMERCE.**

3 Section 1762 of title XVII of Public Law 99–198 (15
 4 U.S.C. 313 note) is amended—

5 (1) in subsection (a), by striking “(a)” and in-
 6 serting “(a) FINDINGS.—”;

7 (2) in subsection (b), by striking “(b)” and in-
 8 serting “(b) POLICY.—”; and

9 (3) by adding at the end the following:

10 “(c) FUNCTIONS.—The Under Secretary, through the
 11 National Weather Service and other appropriate programs
 12 in the National Oceanic and Atmospheric Administration;
 13 shall—

14 “(1) collect and utilize information in order to
 15 make usable, reliable, and timely forecasts of sea-
 16 sonal temperature and precipitation;

17 “(2) leverage existing research and models from
 18 the academic sector to improve the forecasts under
 19 paragraph (1);

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

23 “(A) the number and severity of droughts,
 24 tornadoes, hurricanes, floods, heatwaves, or
 25 other relevant natural disasters;

26 “(B) snowpack; and

1 “(C) sea ice conditions;

2 “(4) provide the forecasts under paragraph (1)
3 and the information under paragraphs (1) and (3)
4 on both national and regional levels; and

5 “(5) develop an Internet clearinghouse with the
6 forecasts of seasonal temperature and precipitation
7 and other relevant seasonal forecasts and products
8 produced by the National Oceanic and Atmospheric
9 Administration, other Federal and State depart-
10 ments and agencies; and the academic sector.

11 “(d) COMMUNICATION.—The Under Secretary shall
12 provide the forecasts and the information on their impacts
13 under subsection (c) to the public, including public and
14 private entities engaged in planning and preparedness, in-
15 cluding—

16 “(1) decisionmakers at the Federal, regional,
17 State, tribal, and local levels of government;

18 “(2) the private sector; and

19 “(3) the public.

20 “(e) COOPERATION.—The Under Secretary shall
21 build upon existing forecasting and assessment programs
22 and partnerships, including—

23 “(1) by designating research and monitoring ac-
24 tivities related to seasonal forecasts as a priority in
25 1 or more Cooperative Institute solicitations;

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

3 “(3) by consulting with the Secretary of De-
4 fense and the Secretary of Homeland Security to de-
5 termine the highest priority seasonal forecast needs
6 to enhance national security.

7 “(f) FORECAST COMMUNICATION COORDINATORS.—

8 “(1) IN GENERAL.—The Under Secretary shall
9 provide grants to States, including territories, for
10 each State to have a forecast communication coordi-
11 nator to receive and disseminate the forecasts and
12 information under subsection (e). Applications for
13 grants under this subsection shall be submitted in
14 such form and manner, and contain such informa-
15 tion, as the Under Secretary prescribes.

16 “(2) REQUIREMENTS.—For each State that re-
17 quests assistance under this subsection, the Under
18 Secretary shall—

19 “(A) provide funds to support an indi-
20 vidual in that State to—

21 “(i) serve as a liaison among the Na-
22 tional Oceanic and Atmospheric Adminis-
23 tration, other Federal departments and
24 agencies, the academic sector, the State,

1 and relevant interests within that State;
2 and

3 ~~“(ii) receive the forecasts and infor-~~
4 ~~mation under subsection (c) and dissemi-~~
5 ~~nate the forecasts and information~~
6 ~~throughout the State, including county and~~
7 ~~tribal governments;~~

8 ~~“(B) provide 1 grant for the purpose de-~~
9 ~~scribed in paragraph (1); and~~

10 ~~“(C) require matching funds from the~~
11 ~~State, a university, a non-governmental organi-~~
12 ~~zation, trade association, or the private sector.~~

13 ~~“(3) LIMITATION.—Each grant under this sub-~~
14 ~~section shall not exceed \$100,000.~~

15 ~~“(g) COOPERATION FROM OTHER FEDERAL AGEN-~~
16 ~~CIES.—Each Federal department and agency shall cooper-~~
17 ~~ate as appropriate with the Under Secretary in carrying~~
18 ~~out this section.~~

19 ~~“(h) REPORTS.—~~

20 ~~“(1) IN GENERAL.—Not later than 18 months~~
21 ~~after the date of enactment of the Seasonal Fore-~~
22 ~~casting Improvement Act, the Under Secretary shall~~
23 ~~transmit to the Committee on Commerce, Science,~~
24 ~~and Transportation of the Senate and the Com-~~

mittee on Science, Space, and Technology of the
House of Representatives a report, including—

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

“(B) specific plans and goals for the con-
tinued development of the seasonal forecasts
and related products described in subsection
(c); and

“(C) an identification of research, moni-
toring, 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 con-
sult with relevant Federal, regional, State, tribal,
and local government agencies, research institutions,
and the private sector.

“(i) AUTHORIZATION OF APPROPRIATIONS.—There is
authorized to be appropriated to carry out this section
\$26,500,000 for each of fiscal years 2015 through 2020.

“(j) DEFINITIONS.—In this section:

1 “(1) SEASONAL.—The term ‘seasonal’ means
2 the time range between 2 weeks and 2 years.

3 “(2) UNDER SECRETARY.—The term ‘Under
4 Secretary’ means the Under Secretary of Commerce
5 for Oceans and Atmosphere.”.

6 **SEC. 3. UNITED STATES WEATHER RESEARCH PROGRAM.**

7 (a) IN GENERAL.—Section 108 of the Oceanic and
8 Atmospheric Administration Authorization Act of 1992
9 (15 U.S.C. 313 note) is amended—

10 (1) in subsection (a)—

11 (A) in paragraph (3), by striking “; and”
12 and inserting a semicolon;

13 (B) in paragraph (4), by striking the pe-
14 riod at the end and inserting a semicolon; and

15 (C) by inserting after paragraph (4) the
16 following:

17 “(5) provide to the Committee on Commerce,
18 Science, and Transportation of the Senate and the
19 Committee on Science, Space, and Technology of the
20 House of Representatives an annual report, includ-
21 ing—

22 “(A) a list of on-going research projects;
23 including project goals and a point of contact
24 for each project; and

1 “(B) the 5 projects related to observations;
 2 weather, or seasonal-scale forecasts within the
 3 Office of Oceanic and Atmospheric Research
 4 that are closest to operationalization, including
 5 for each project—

6 “(i) the potential benefit;

7 “(ii) any barrier to operationalization;

8 and

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

13 “(6) establish teams with staff from the Office
 14 of Oceanic and Atmospheric Research and the Na-
 15 tional Weather Service to oversee the
 16 operationalization of research products developed by
 17 the Office of Oceanic and Atmospheric Research
 18 within the National Weather Service;

19 “(7) develop mechanisms for the Office of Oee-
 20 anic and Atmospheric Research’s research priorities
 21 to be informed by both the relevant line offices with-
 22 in the National Oceanic and Atmospheric Adminis-
 23 tration, the relevant user community, and the weath-
 24 er enterprise, including by exchanging detailees be-

1 tween the Office of Oceanic and Atmospheric Re-
 2 search and the line offices;

3 “(8) develop an internal mechanism to track
 4 the progress of each research project within the Of-
 5 fice of Oceanic and Atmospheric Research and
 6 mechanisms to terminate a project that is not ade-
 7 quately progressing;

8 “(9) for extramural research funded, the Office
 9 of Oceanic and Atmospheric Research shall develop
 10 and implement a system to track whether the
 11 grant’s goals were accomplished;

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

16 “(11) encourage academic collaboration with
 17 the Office of Oceanic and Atmospheric Research and
 18 the National Weather Service by facilitating visiting
 19 scholars.”; and

20 “(2) in subsection (b), in the matter preceding
 21 paragraph (1), by striking “Not later than 90 days
 22 after the date of enactment of this Act, the” and in-
 23 serting “The”.

24 (b) AUTHORIZATION OF APPROPRIATIONS.—There is
 25 authorized to be appropriated to the National Oceanic and

1 Atmospheric Administration to carry out section 108 of
 2 the Oceanic and Atmospheric Administration Authoriza-
 3 tion Act of 1992 (15 U.S.C. 313 note), as amended by
 4 subsection (a) of this section, \$10,000,000 for each of fis-
 5 cal years 2015 through 2020.

6 **SEC. 4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-**
 7 **TRATION SATELLITE DESIGN AND MANAGE-**
 8 **MENT.**

9 (a) **SHORT-TERM MANAGEMENT OF ENVIRON-**
 10 **MENTAL OBSERVATIONS.—**

11 (1) **IN GENERAL.—**The Administrator of the
 12 National Oceanic and Atmospheric Administration
 13 shall take immediate action to manage the expense
 14 of environmental observations—

15 (A) by improving the procurement prac-
 16 tices of the Administration with respect to polar
 17 and geostationary satellites; and

18 (B) by assessing the operational viability of
 19 alternate observation platforms, such as micro-
 20 satellite constellations and ocean observing sys-
 21 tems.

22 (2) **PROCUREMENT AND ACQUISITION OF POLAR**
 23 **AND GEOSTATIONARY SATELLITES.—**

24 (A) **USE OF ESTABLISHED COMPETITIVE**
 25 **PROCESSES.—**

1 (i) IN GENERAL.—Except as provided
2 in clause (ii) and notwithstanding any
3 other provision of law, the Administrator
4 of the National Oceanic and Atmospheric
5 Administration and the Administrator of
6 the National Aeronautics and Space Ad-
7 ministration shall use the process estab-
8 lished under section 3306 of title 41,
9 United States Code, to acquire all the
10 polar and geostationary weather satellites
11 for use by the National Oceanic and At-
12 mospheric Administration in a program
13 phase via a single procurement action.

14 (ii) APPLICABILITY.—Clause (i) shall
15 apply to procurement and acquisition oc-
16 curring in program phases beginning after
17 the date of enactment of this Act.

18 (iii) DEFINITION OF PROGRAM
19 PHASE.—In this subparagraph, the term
20 “program phase” means the planned ac-
21 quisition of a series of satellites sharing a
22 common architecture.

23 (B) ASSESSMENT OF PROCUREMENT AND
24 ACQUISITION OPPORTUNITIES.—

1 (i) IN GENERAL.—The Administrator
 2 of the National Oceanic and Atmospheric
 3 Administration shall ensure that in pro-
 4 curing or acquiring polar and geo-
 5 stationary weather satellites that the Ad-
 6 ministrator only procures or acquires such
 7 satellites in a manner that secures the best
 8 value for each polar and geostationary pro-
 9 gram of the Administration.

10 (ii) BEST VALUE.—In determining
 11 whether a procurement or acquisition se-
 12 cures the best value for a program, the Ad-
 13 ministrator shall consider—

14 (I) integration with current
 15 ground systems for receiving, proc-
 16 essing, and disseminating data;

17 (II) integration of spacecraft and
 18 sensing instruments;

19 (III) capacity to respond to
 20 changes in requirements and credi-
 21 bility of risk management; and

22 (IV) continuity and consistency
 23 of capability.

24 (3) MICROSATELLITE CONSTELLATIONS.—

1 (A) IN GENERAL.—The Administrator
2 shall complete and operationalize the radio oc-
3 culation program of record in effect on the day
4 before the date of the enactment of this Act—

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

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

11 (iii) by ensuring that the resulting
12 data is free and open to all communities.

13 (B) ANNUAL REPORTS.—Not less fre-
14 quently than once each year until the Adminis-
15 trator has completed and operationalized the
16 program described in subparagraph (A) pursu-
17 ant to such subparagraph, the Administrator
18 shall submit to Congress a report on the status
19 of the efforts of the Administrator to carry out
20 such subparagraph.

21 (4) INTEGRATION OF DATA AND RESEARCH
22 FROM INTEGRATED OCEAN OBSERVING SYSTEM INTO
23 OPERATIONAL FORECAST MODELS.—As soon as
24 practicable, the Administrator shall integrate data
25 and research from the Integrated Ocean Observing

1 System (IOOS) of the Administration into such
2 operational forecast models as the Administrator
3 considers appropriate.

4 (5) LIMITATION ON PROCUREMENT OF ADDI-
5 TIONAL POLAR ORBITING SATELLITES.—

6 (A) IN GENERAL.—The Administrator may
7 not procure any future program phase of the
8 Joint Polar Satellite System program of record
9 if the aggregate cost for such future program
10 phase that would be incurred by the Adminis-
11 tration exceeds the aggregate cost that was in-
12 curred by the Administration in procuring the
13 Joint Polar Satellite System 1 and 2.

14 (B) ADJUSTMENT FOR INFLATION.—In de-
15 termining aggregate costs under subparagraph
16 (A), the Administrator may adjust the aggre-
17 gate costs for inflation.

18 (6) SPECIFICATIONS FOR NEW SATELLITE SYS-
19 TEMS DETERMINED BY OPERATIONAL NEEDS.—In
20 developing specifications for any satellite systems of
21 the Administration to follow after the Joint Polar
22 Satellite System, Geostationary Operational Envi-
23 ronmental Satellites, and any other satellites of the
24 Administration in effect on the day before the date
25 of enactment of this Act, the Administrator shall en-

1 sure the specifications are determined to the extent
 2 practicable by the recommendations of the reports
 3 under subsection (b) of this section and section 6(d).

4 (b) INDEPENDENT STUDY ON FUTURE OF NATIONAL
 5 OCEANIC AND ATMOSPHERIC ADMINISTRATION SAT-
 6 ELLITE SYSTEMS.—

7 (1) AGREEMENT.—

8 (A) IN GENERAL.—The Administrator
 9 shall enter into an agreement with the National
 10 Academy of Sciences to perform the services
 11 covered by this subsection.

12 (B) TIMING.—The Administrator shall
 13 enter into the agreement described in subpara-
 14 graph (A) before September 30, 2018.

15 (2) STUDY.—

16 (A) IN GENERAL.—Under an agreement
 17 between the Administrator and the National
 18 Academy of Sciences under this subsection, the
 19 National Academy of Sciences shall conduct a
 20 study on matters concerning the future of the
 21 satellite systems of the Administration.

22 (B) ELEMENTS.—In conducting the study
 23 under subparagraph (A), the National Academy
 24 of Sciences shall—

1 (i) review the report of the Weather
2 Commission described in section 6(d), and
3 the 2017 update to the 2007 report by the
4 National Research Council entitled “Earth
5 Science and Applications From Space”;

6 (ii) develop recommendations on how
7 to make the satellite portfolio of the Ad-
8 ministration more robust and cost-effec-
9 tive;

10 (iii) assess the costs and benefits of
11 moving toward a constellation of many
12 small satellites; standardizing satellite bus
13 design; relying more on the purchasing of
14 data; or acquiring data from other sources
15 or methods;

16 (iv) identify the environmental obser-
17 vations that are essential to the perform-
18 ance of weather models; based on an as-
19 sessment of Federal, academic, and private
20 sector weather research; and the cost of
21 obtaining the environmental data;

22 (v) identify environmental observa-
23 tions that improve the quality of weather
24 forecasts; but are not essential for the gen-
25 eration of weather models in effect on the

1 day before the date of enactment of this
2 Act; and

3 (vi) develop recommendations on a
4 portfolio of environmental observations
5 that balances essential and quality-improv-
6 ing data, private and nonprivate sources,
7 and space- and Earth-based instruments.

8 (C) DEADLINE AND REPORT.—In carrying
9 out the study under subparagraph (A), the Na-
10 tional Academy of Sciences shall complete and
11 transmit to the Administrator a report con-
12 taining the findings of the National Academy of
13 Sciences with respect to the study not later
14 than 2 years after the date on which the Ad-
15 ministrator enters into an agreement with the
16 National Academy of Sciences under paragraph
17 (1)(A).

18 (D) COORDINATION OF EFFORTS.—In
19 order to avoid duplication, the National Acad-
20 emy of Sciences may coordinate its efforts to
21 draft the report under subparagraph (C) with
22 the preparation of the 2017 study entitled
23 “Earth Science and Applications from Space”.

24 (3) ALTERNATE CONTRACT ORGANIZATION.—

1 (A) IN GENERAL.—If the Administrator is
 2 unable before the date prescribed in paragraph
 3 ~~(1)(B)~~ to enter into an agreement described in
 4 paragraph ~~(1)(A)~~ with the National Academy of
 5 Sciences on terms acceptable to the Adminis-
 6 trator, the Administrator shall seek to enter
 7 into such an agreement with another appro-
 8 priate organization that—

9 (i) is not part of the Government;

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

11 and

12 (iii) has expertise and objectivity com-
 13 parable to that of the National Academy of
 14 Sciences.

15 (B) TREATMENT.—If the Administrator
 16 enters into an agreement with another organi-
 17 zation as described in subparagraph (A), any
 18 reference in this section to the National Acad-
 19 emy of Sciences shall be treated as a reference
 20 to the other organization.

21 ~~(4) AUTHORIZATION OF APPROPRIATIONS.—~~

22 There is authorized to be appropriated to the Na-
 23 tional Oceanic and Atmospheric Administration to
 24 carry out this subsection \$1,000,000 for the period
 25 of fiscal years 2017 through 2019.

1 **SEC. 5. DESIGNATION OF FEDERAL COORDINATOR FOR ME-**
 2 **TEOROLOGY.**

3 The Director of the Office of Science and Technology
 4 Policy shall designate a Federal Coordinator for Meteor-
 5 ology.

6 **SEC. 6. ESTABLISHMENT OF WEATHER COMMISSION.**

7 ~~(a)~~ ESTABLISHMENT.—

8 ~~(1)~~ IN GENERAL.—The Federal Coordinator for
 9 Meteorology, designated under section 5, shall estab-
 10 lish, and the Administrator of the National Oceanic
 11 and Atmospheric Administration acting through the
 12 United States Weather Research Program of the
 13 Administration shall support, a commission—

14 ~~(A)~~ to assess the weather forecasts and
 15 forecast products provided by the National Oee-
 16 anic and Atmospheric Administration; and

17 ~~(B)~~ to provide advice to Congress on mat-
 18 ters relating to the highest priority weather
 19 forecast needs of the community of users of the
 20 forecasts and products described in subpara-
 21 graph ~~(A)~~.

22 ~~(2)~~ DESIGNATION.—The commission estab-
 23 lished under paragraph ~~(1)~~ shall be known as the
 24 “Weather Commission” (in this section referred to
 25 as the “Commission”).

26 ~~(b)~~ MEMBERSHIP.—

(1) COMPOSITION.—

(A) IN GENERAL.—The Commission shall be composed of individuals selected by the Federal Coordinator from among leading experts and innovators from each relevant stakeholder group described in clauses (i) through (vii) of subparagraph (B).

(B) NUMBER.—The Commission shall be composed of no fewer than 14 members, including—

(i) 2 representatives from State emergency management agencies;

(ii) 2 representatives from State agriculture agencies;

(iii) 1 representative from the Native American, Alaskan Native, or Native Hawaiian community;

(iv) 2 representatives from the private aerospace industry;

(v) 2 representatives from the operational forecasting community;

(vi) 2 representatives from the academic community;

(vii) 1 representative from a professional society that focuses on meteorology;

1 (viii) the chair of the Science Advisory
2 Board of the National Oceanic and Atmos-
3 pheric Administration;

4 (ix) the chair of the National Science
5 Board;

6 (x) the Director of the Office of
7 Science and Technology Policy, ex officio;
8 and

9 (xi) the Administrator of the National
10 Oceanic and Atmospheric Administration;
11 ex officio.

12 ~~(2) CO-CHAIR.~~—The Director of the Office of
13 Science and Technology Policy and the Adminis-
14 trator of the National Oceanic and Atmospheric Ad-
15 ministration shall serve as co-chairs of the Commis-
16 sion.

17 ~~(c) DUTIES.~~—The duties of the Commission are as
18 follows:

19 ~~(1) To assess the weather forecasts and fore-~~
20 ~~cast products of the Administration as described in~~
21 ~~subsection (a).~~

22 ~~(2) To provide advice to Congress as described~~
23 ~~in subsection (a).~~

24 ~~(3) To obtain public comment on the weather~~
25 ~~forecasts and products of the Administration that~~

1 the Administrator determines are the highest pri-
 2 ority for users of such forecasts and products.

3 ~~(d) REPORT.—~~

4 ~~(1) IN GENERAL.—~~Not later than 2 years after
 5 the date of enactment of this Act, the Commission
 6 shall submit to Congress and make available to the
 7 public on an Internet website a report on matters re-
 8 lating to the activities of the Commission.

9 ~~(2) CONTENTS.—~~The report submitted under
 10 paragraph ~~(1)~~ shall include the following:

11 ~~(A) The findings of the Commission with~~
 12 ~~respect to the review conducted under para-~~
 13 ~~graph (3) of subsection (c).~~

14 ~~(B) The findings of the Commission with~~
 15 ~~respect to the public comments obtained under~~
 16 ~~paragraph (4) of such subsection.~~

17 ~~(C) The recommendations developed under~~
 18 ~~paragraph (5) of such subsection.~~

19 ~~(e) EXEMPTION FROM FACA.—~~The Commission
 20 shall not be subject to the requirements of the Federal
 21 Advisory Committee Act (5 U.S.C. App.).

22 ~~(f) TERMINATION.—~~The Commission shall terminate
 23 on the date that is 4 years after the date of enactment
 24 of this Act.

1 ~~(g) AUTHORIZATION OF APPROPRIATIONS.—~~There is
 2 authorized to be appropriated to the National Oceanic and
 3 Atmospheric Administration to carry out this section
 4 \$1,000,000 for the period of fiscal years 2015 through
 5 2019.

6 **SECTION 1. SHORT TITLE.**

7 *This Act may be cited as the “Seasonal Forecasting*
 8 *Improvement Act”.*

9 **SEC. 2. IMPROVING SEASONAL FORECASTS FOR AGRI-**
 10 **CULTURE AND COMMERCE.**

11 *Section 1762 of title XVII of Public Law 99–198 (15*
 12 *U.S.C. 313 note) is amended—*

13 *(1) in subsection (a), by striking “(a)” and in-*
 14 *serting “(a) FINDINGS.—”;*

15 *(2) in subsection (b), by striking “(b)” and in-*
 16 *serting “(b) POLICY.—”; and*

17 *(3) by adding at the end the following:*

18 *“(c) FUNCTIONS.—The Under Secretary, through the*
 19 *National Weather Service and other appropriate programs*
 20 *in the National Oceanic and Atmospheric Administration,*
 21 *shall—*

22 *“(1) collect and utilize information in order to*
 23 *make usable, reliable, and timely forecasts of seasonal*
 24 *temperature and precipitation;*

1 “(2) leverage existing research and models from
2 the academic sector to improve the forecasts under
3 paragraph (1);

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

7 “(A) the number and severity of droughts,
8 fires, tornadoes, hurricanes, floods, heatwaves,
9 coastal inundation, winter storms, high impact
10 weather, or other relevant natural disasters;

11 “(B) snowpack; and

12 “(C) sea ice conditions;

13 “(4) provide the forecasts under paragraph (1)
14 and the information under paragraphs (1) and (3) on
15 both national and regional levels; and

16 “(5) develop an Internet clearinghouse with the
17 forecasts of seasonal temperature and precipitation
18 and other relevant seasonal forecasts and products
19 produced by the National Oceanic and Atmospheric
20 Administration, other Federal and State departments
21 and agencies, and the academic sector.

22 “(d) COMMUNICATION.—The Under Secretary shall
23 provide the forecasts and the information on their impacts
24 under subsection (c) to the public, including public and pri-

1 *vate entities engaged in planning and preparedness, includ-*
 2 *ing—*

3 “(1) *decisionmakers at the Federal, regional,*
 4 *State, tribal, and local levels of government;*

5 “(2) *the private sector; and*

6 “(3) *the public.*

7 “(e) *COOPERATION.—The Under Secretary shall build*
 8 *upon existing forecasting and assessment programs and*
 9 *partnerships, including—*

10 “(1) *by designating research and monitoring ac-*
 11 *tivities related to seasonal forecasts as a priority in*
 12 *1 or more Cooperative Institute solicitations;*

13 “(2) *by contributing to the interagency Earth*
 14 *System Prediction Capability; and*

15 “(3) *by consulting with the Secretary of Defense*
 16 *and the Secretary of Homeland Security to determine*
 17 *the highest priority seasonal forecast needs to enhance*
 18 *national security.*

19 “(f) *FORECAST COMMUNICATION COORDINATORS.—*

20 “(1) *IN GENERAL.—The Under Secretary shall*
 21 *provide grants to States, including territories, for*
 22 *each State to have a forecast communication coordi-*
 23 *nator to receive and disseminate the forecasts and in-*
 24 *formation under subsection (c). Applications for*
 25 *grants under this subsection shall be submitted in*

1 *such form and manner, and contain such informa-*
 2 *tion, as the Under Secretary prescribes.*

3 *“(2) REQUIREMENTS.—For each State that re-*
 4 *quests assistance under this subsection, the Under*
 5 *Secretary shall—*

6 *“(A) provide funds to support an indi-*
 7 *vidual in that State to—*

8 *“(i) serve as a liaison among the Na-*
 9 *tional Oceanic and Atmospheric Adminis-*
 10 *tration, other Federal departments and*
 11 *agencies, the academic sector, the State, and*
 12 *relevant interests within that State; and*

13 *“(ii) receive the forecasts and informa-*
 14 *tion under subsection (c) and disseminate*
 15 *the forecasts and information throughout*
 16 *the State, including county and tribal gov-*
 17 *ernments;*

18 *“(B) provide 1 grant for the purpose de-*
 19 *scribed in paragraph (1); and*

20 *“(C) require matching funds from the State,*
 21 *a university, a non-governmental organization,*
 22 *trade association, or the private sector.*

23 *“(3) LIMITATION.—Each grant under this sub-*
 24 *section shall not exceed \$100,000.*

1 “(g) *COOPERATION FROM OTHER FEDERAL AGEN-*
 2 *CIES.—Each Federal department and agency shall cooper-*
 3 *ate as appropriate with the Under Secretary in carrying*
 4 *out this section.*

5 “(h) *REPORTS.—*

6 “(1) *IN GENERAL.—Not later than 18 months*
 7 *after the date of enactment of the Seasonal Fore-*
 8 *casting Improvement Act, the Under Secretary shall*
 9 *transmit to the Committee on Commerce, Science,*
 10 *and Transportation of the Senate and the Committee*
 11 *on Science, Space, and Technology of the House of*
 12 *Representatives a report, including—*

13 “(A) *an analysis of the how information*
 14 *from the National Oceanic and Atmospheric Ad-*
 15 *ministration on seasonal forecasts, as provided*
 16 *under subsection (c), is utilized in public plan-*
 17 *ning and preparedness;*

18 “(B) *specific plans and goals for the contin-*
 19 *ued development of the seasonal forecasts and re-*
 20 *lated products described in subsection (c); and*

21 “(C) *an identification of research, moni-*
 22 *toring, observing, and forecasting requirements*
 23 *to meet the goals described in subparagraph (B).*

24 “(2) *CONSULTATION.—In developing the report*
 25 *under paragraph (1), the Under Secretary shall con-*

1 *sult with relevant Federal, regional, State, tribal, and*
 2 *local government agencies, research institutions, and*
 3 *the private sector.*

4 “(i) *AUTHORIZATION OF APPROPRIATIONS.—There is*
 5 *authorized to be appropriated to carry out this section*
 6 *\$26,500,000 for each of fiscal years 2015 through 2020.*

7 “(j) *DEFINITIONS.—In this section:*

8 “(1) *SEASONAL.—The term ‘seasonal’ means the*
 9 *time range between 2 weeks and 2 years.*

10 “(2) *UNDER SECRETARY.—The term ‘Under Sec-*
 11 *retary’ means the Under Secretary of Commerce for*
 12 *Oceans and Atmosphere.’.*

13 **SEC. 3. UNITED STATES WEATHER RESEARCH PROGRAM.**

14 (a) *IN GENERAL.—Section 108 of the Oceanic and At-*
 15 *mospheric Administration Authorization Act of 1992 (15*
 16 *U.S.C. 313 note) is amended—*

17 (1) *in subsection (a)—*

18 (A) *in paragraph (3), by striking “; and”*
 19 *and inserting a semicolon;*

20 (B) *in paragraph (4), by striking the period*
 21 *at the end and inserting a semicolon; and*

22 (C) *by inserting after paragraph (4) the fol-*
 23 *lowing:*

24 “(5) *provide to the Committee on Commerce,*
 25 *Science, and Transportation of the Senate and the*

1 *Committee on Science, Space, and Technology of the*
2 *House of Representatives an annual report, includ-*
3 *ing—*

4 “(A) *a list of on-going research projects, in-*
5 *cluding project goals and a point of contact for*
6 *each project; and*

7 “(B) *the 5 projects related to observations,*
8 *weather, or seasonal-scale forecasts within the*
9 *Office of Oceanic and Atmospheric Research that*
10 *are closest to operationalization, including for*
11 *each project—*

12 “(i) *the potential benefit;*

13 “(ii) *any barrier to operationalization;*

14 *and*

15 “(iii) *the plan for operationalization,*
16 *including which line office will financially*
17 *support the project and how much the line*
18 *office intends to spend;*

19 “(6) *establish teams with staff from the Office of*
20 *Oceanic and Atmospheric Research and the National*
21 *Weather Service to oversee the operationalization of*
22 *research products developed by the Office of Oceanic*
23 *and Atmospheric Research within the National*
24 *Weather Service;*

1 “(7) develop mechanisms for the Office of Oce-
2 anic and Atmospheric Research’s research priorities
3 to be informed by both the relevant line offices within
4 the National Oceanic and Atmospheric Administra-
5 tion, the relevant user community, and the weather
6 enterprise, including by exchanging detailees between
7 the Office of Oceanic and Atmospheric Research and
8 the line offices;

9 “(8) develop an internal mechanism to track the
10 progress of each research project within the Office of
11 Oceanic and Atmospheric Research and mechanisms
12 to terminate a project that is not adequately pro-
13 gressing;

14 “(9) for extramural research funded, the Office of
15 Oceanic and Atmospheric Research shall develop and
16 implement a system to track whether the grant’s goals
17 were accomplished;

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

22 “(11) encourage academic collaboration with the
23 Office of Oceanic and Atmospheric Research and the
24 National Weather Service by facilitating visiting
25 scholars.”; and

1 (2) *in subsection (b), in the matter preceding*
 2 *paragraph (1), by striking “Not later than 90 days*
 3 *after the date of enactment of this Act, the” and in-*
 4 *serting “The”.*

5 (b) *AUTHORIZATION OF APPROPRIATIONS.—There is*
 6 *authorized to be appropriated to the National Oceanic and*
 7 *Atmospheric Administration to carry out section 108 of the*
 8 *Oceanic and Atmospheric Administration Authorization*
 9 *Act of 1992 (15 U.S.C. 313 note), as amended by subsection*
 10 *(a) of this section, \$10,000,000 for each of fiscal years 2015*
 11 *through 2020.*

12 **SEC. 4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINIS-**
 13 **TRATION SATELLITE DESIGN AND MANAGE-**
 14 **MENT.**

15 (a) *SHORT-TERM MANAGEMENT OF ENVIRONMENTAL*
 16 *OBSERVATIONS.—*

17 (1) *IN GENERAL.—The Administrator of the Na-*
 18 *tional Oceanic and Atmospheric Administration shall*
 19 *take immediate action to manage the expense of envi-*
 20 *ronmental observations—*

21 (A) *by improving the procurement practices*
 22 *of the Administration with respect to polar and*
 23 *geostationary satellites; and*

24 (B) *by assessing the operational viability of*
 25 *alternate observation platforms, such as micro-*

1 *satellite constellations and ocean observing sys-*
 2 *tems.*

3 (2) *PROCUREMENT AND ACQUISITION OF POLAR*
 4 *AND GEOSTATIONARY SATELLITES.—*

5 (A) *USE OF ESTABLISHED COMPETITIVE*
 6 *PROCESSES.—*

7 (i) *IN GENERAL.—Except as provided*
 8 *in clause (ii) and notwithstanding any*
 9 *other provision of law, the Administrator of*
 10 *the National Oceanic and Atmospheric Ad-*
 11 *ministration and the Administrator of the*
 12 *National Aeronautics and Space Adminis-*
 13 *tration may—*

14 (I) *acquire all the polar weather*
 15 *satellites for use by the National Oce-*
 16 *anic and Atmospheric Administration*
 17 *in a program phase via a single pro-*
 18 *curement action; and*

19 (II) *acquire all the geostationary*
 20 *weather satellites for use by the Na-*
 21 *tional Oceanic and Atmospheric Ad-*
 22 *ministration in a program phase via a*
 23 *single procurement action.*

24 (ii) *APPLICABILITY.—Clause (i) shall*
 25 *apply to procurement and acquisition oc-*

1 *curing in program phases beginning after*
 2 *the date of enactment of this Act.*

3 (iii) *DEFINITION OF PROGRAM*
 4 *PHASE.—In this subparagraph, the term*
 5 *“program phase” means the planned acqui-*
 6 *sition of a series of satellites sharing a com-*
 7 *mon architecture.*

8 (B) *ASSESSMENT OF PROCUREMENT AND*
 9 *ACQUISITION OPPORTUNITIES.—*

10 (i) *IN GENERAL.—The Administrator*
 11 *of the National Oceanic and Atmospheric*
 12 *Administration shall ensure that in pro-*
 13 *curing or acquiring polar and geostationary*
 14 *weather satellites that the Administrator*
 15 *only procures or acquires such satellites in*
 16 *a manner that secures the best value for*
 17 *each polar and geostationary program of*
 18 *the Administration.*

19 (ii) *BEST VALUE.—In determining*
 20 *whether a procurement or acquisition se-*
 21 *cures the best value for a program, the Ad-*
 22 *ministrator shall consider—*

23 (I) *integration with current*
 24 *ground systems for receiving, proc-*
 25 *essing, and disseminating data;*

1 (II) *integration of spacecraft and*
 2 *sensing instruments;*

3 (III) *capacity to respond to*
 4 *changes in requirements and credi-*
 5 *bility of risk management; and*

6 (IV) *continuity and consistency of*
 7 *capability.*

8 (3) *MICROSATELLITE CONSTELLATIONS.—*

9 (A) *IN GENERAL.—The Administrator shall*
 10 *complete and operationalize the radio occultation*
 11 *program of record in effect on the day before the*
 12 *date of the enactment of this Act—*

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

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

19 (iii) *by ensuring that the resulting*
 20 *data is free and open to all communities.*

21 (B) *ANNUAL REPORTS.—Not less frequently*
 22 *than once each year until the Administrator has*
 23 *completed and operationalized the program de-*
 24 *scribed in subparagraph (A) pursuant to such*
 25 *subparagraph, the Administrator shall submit to*

1 Congress a report on the status of the efforts of
 2 the Administrator to carry out such subpara-
 3 graph.

4 (4) *INTEGRATION OF OCEAN AND COASTAL DATA*
 5 *FROM THE INTEGRATED OCEAN OBSERVING SYS-*
 6 *TEM.—In the National Weather Service Regions*
 7 *where the Administrator determines that ocean and*
 8 *coastal data would improve forecasts, the Adminis-*
 9 *trator, in consultation with the National Weather*
 10 *Service and Office of Oceanic and Atmospheric Re-*
 11 *search, shall—*

12 (A) *integrate additional coastal and ocean*
 13 *observations, and other data and research, from*
 14 *the Integrated Ocean Observing System of the*
 15 *Administration (referred to in this section as*
 16 *“IOOS”)* *into regional weather forecasts to im-*
 17 *prove weather forecasts and forecasting decision*
 18 *support systems; and*

19 (B) *support the development of real time*
 20 *data sharing products and forecast products in*
 21 *collaboration with the IOOS regional associa-*
 22 *tions, including contributions from the private*
 23 *sector, academia, and research institutions to en-*
 24 *sure timely and accurate use of ocean and coast-*
 25 *al data in regional forecasts.*

1 (5) *EXISTING MONITORING AND OBSERVATION IN-*
 2 *FRASTRUCTURE.—The Administrator shall identify*
 3 *degradation of existing monitoring and observation*
 4 *infrastructure that could lead to a reduction in fore-*
 5 *cast quality.*

6 (6) *SPECIFICATIONS FOR NEW SATELLITE SYS-*
 7 *TEMS DETERMINED BY OPERATIONAL NEEDS.—In de-*
 8 *veloping specifications for any satellite systems of the*
 9 *Administration to follow after the Joint Polar Sat-*
 10 *ellite System, Geostationary Operational Environ-*
 11 *mental Satellites, and any other satellites of the Ad-*
 12 *ministration in effect on the day before the date of en-*
 13 *actment of this Act, the Administrator shall ensure*
 14 *the specifications are determined to the extent prac-*
 15 *ticable by the recommendations of the reports under*
 16 *subsection (b) of this section and section 6(d).*

17 (b) *INDEPENDENT STUDY ON FUTURE OF NATIONAL*
 18 *OCEANIC AND ATMOSPHERIC ADMINISTRATION SATELLITE*
 19 *SYSTEMS.—*

20 (1) *AGREEMENT.—*

21 (A) *IN GENERAL.—The Administrator shall*
 22 *enter into an agreement with the National Acad-*
 23 *emy of Sciences to perform the services covered*
 24 *by this subsection.*

1 (B) *TIMING.*—*The Administrator shall enter*
 2 *into the agreement described in subparagraph*
 3 *(A) before September 30, 2018.*

4 (2) *STUDY.*—

5 (A) *IN GENERAL.*—*Under an agreement be-*
 6 *tween the Administrator and the National Acad-*
 7 *emy of Sciences under this subsection, the Na-*
 8 *tional Academy of Sciences shall conduct a study*
 9 *on matters concerning the future of the satellite*
 10 *systems of the Administration.*

11 (B) *ELEMENTS.*—*In conducting the study*
 12 *under subparagraph (A), the National Academy*
 13 *of Sciences shall—*

14 (i) *review the report of the Weather*
 15 *Commission described in section 6(d), and*
 16 *the 2017 update to the 2007 report by the*
 17 *National Research Council entitled “Earth*
 18 *Science and Applications From Space”;*

19 (ii) *develop recommendations on how*
 20 *to make the satellite portfolio of the Admin-*
 21 *istration more robust and cost-effective;*

22 (iii) *assess the costs and benefits of*
 23 *moving toward a constellation of many*
 24 *small satellites, standardizing satellite bus*
 25 *design, relying more on the purchasing of*

1 *data, or acquiring data from other sources*
 2 *or methods;*

3 *(iv) identify the environmental obser-*
 4 *vations that are essential to the performance*
 5 *of weather models, based on an assessment*
 6 *of Federal, academic, and private sector*
 7 *weather research, and the cost of obtaining*
 8 *the environmental data;*

9 *(v) identify environmental observations*
 10 *that improve the quality of weather fore-*
 11 *casts, but are not essential for the genera-*
 12 *tion of weather models in effect on the day*
 13 *before the date of enactment of this Act; and*

14 *(vi) develop recommendations on a*
 15 *portfolio of environmental observations that*
 16 *balances essential and quality-improving*
 17 *data, private and nonprivate sources, and*
 18 *space- and Earth-based instruments.*

19 (C) *DEADLINE AND REPORT.*—*In carrying*
 20 *out the study under subparagraph (A), the Na-*
 21 *tional Academy of Sciences shall complete and*
 22 *transmit to the Administrator a report con-*
 23 *taining the findings of the National Academy of*
 24 *Sciences with respect to the study not later than*
 25 *2 years after the date on which the Adminis-*

1 *trator enters into an agreement with the Na-*
 2 *tional Academy of Sciences under paragraph*
 3 *(1)(A).*

4 *(D) COORDINATION OF EFFORTS.—In order*
 5 *to avoid duplication, the National Academy of*
 6 *Sciences may coordinate its efforts to draft the*
 7 *report under subparagraph (C) with the prepa-*
 8 *ration of the 2017 study entitled “Earth Science*
 9 *and Applications from Space”.*

10 *(3) ALTERNATE CONTRACT ORGANIZATION.—*

11 *(A) IN GENERAL.—If the Administrator is*
 12 *unable before the date prescribed in paragraph*
 13 *(1)(B) to enter into an agreement described in*
 14 *paragraph (1)(A) with the National Academy of*
 15 *Sciences on terms acceptable to the Adminis-*
 16 *trator, the Administrator shall seek to enter into*
 17 *such an agreement with another appropriate or-*
 18 *ganization that—*

19 *(i) is not part of the Government;*

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

21 *and*

22 *(iii) has expertise and objectivity com-*
 23 *parable to that of the National Academy of*
 24 *Sciences.*

1 (B) *TREATMENT.*—*If the Administrator en-*
 2 *ters into an agreement with another organiza-*
 3 *tion as described in subparagraph (A), any ref-*
 4 *erence in this section to the National Academy of*
 5 *Sciences shall be treated as a reference to the*
 6 *other organization.*

7 (4) *AUTHORIZATION OF APPROPRIATIONS.*—
 8 *There is authorized to be appropriated to the Na-*
 9 *tional Oceanic and Atmospheric Administration to*
 10 *carry out this subsection \$1,000,000 for the period of*
 11 *fiscal years 2017 through 2019.*

12 **SEC. 5. DESIGNATION OF FEDERAL COORDINATOR FOR ME-**
 13 **TEOROLOGY.**

14 *The Director of the Office of Science and Technology*
 15 *Policy shall designate a Federal Coordinator for Meteor-*
 16 *ology.*

17 **SEC. 6. ESTABLISHMENT OF THE WEATHER COMMISSION.**

18 (a) *ESTABLISHMENT.*—

19 (1) *IN GENERAL.*—*The Administrator of the Na-*
 20 *tional Oceanic and Atmospheric Administration shall*
 21 *establish and support a commission—*

22 (A) *to assess the weather forecasts and fore-*
 23 *cast products provided by the National Oceanic*
 24 *and Atmospheric Administration; and*

1 (B) to provide advice to the Federal Govern-
 2 ment, including Congress, on matters relating to
 3 the highest priority weather forecast needs of the
 4 community of users of the forecasts and products
 5 described in subparagraph (A).

6 (2) *DESIGNATION.*—The commission established
 7 under paragraph (1) shall be known as the “Weather
 8 Commission”.

9 (3) *INTERACTION WITH FEDERAL AGENCIES AND*
 10 *DEPARTMENTS.*—

11 (A) *SECURING INFORMATION.*—In carrying
 12 out its functions under this section, the Weather
 13 Commission may secure directly from any Fed-
 14 eral agency or department any information it
 15 considers necessary to carry out its functions
 16 under this Act.

17 (B) *COOPERATION.*—Each such agency or
 18 department is authorized to cooperate with the
 19 Weather Commission and, to the extent otherwise
 20 permitted by law, to furnish such information
 21 (other than information described in section
 22 552(b)(1)(A) of title 5, United States Code) to
 23 the Weather Commission, upon the request of the
 24 Weather Commission.

25 (b) *MEMBERSHIP.*—

1 (1) COMPOSITION.—

2 (A) IN GENERAL.—*The Weather Commis-*
 3 *sion shall be composed of individuals appointed*
 4 *by the Administrator of the National Oceanic*
 5 *and Atmospheric Administration from among*
 6 *leading experts and innovators from each rel-*
 7 *evant stakeholder group described in clauses (i)*
 8 *through (vii) of subparagraph (B).*

9 (B) NUMBER.—*The Weather Commission*
 10 *shall be composed of no fewer than 14 members,*
 11 *including—*

12 (i) *2 representatives from State or*
 13 *local emergency management agencies;*

14 (ii) *2 representatives from State agri-*
 15 *culture agencies;*

16 (iii) *1 representative of Native Ameri-*
 17 *cans, including Indians, as the term is de-*
 18 *defined in section 4 of the Indian Self-Deter-*
 19 *mination and Education Assistance Act (25*
 20 *U.S.C. 450b) (including Alaska Natives*
 21 *within the meaning of that term), and Na-*
 22 *tive Hawaiians (as defined in section 7207*
 23 *of the Elementary and Secondary Edu-*
 24 *cation Act of 1965 (20 U.S.C. 7517));*

1 (iv) 2 representatives from the private
2 aerospace industry;

3 (v) 2 representatives from the oper-
4 ational forecasting community;

5 (vi) 2 representatives from the aca-
6 demic community; and

7 (vii) 1 representative from a profes-
8 sional society that focuses on meteorology.

9 (2) *CHAIR.*—The Weather Commission shall se-
10 lect a chairperson from among its members.

11 (c) *DUTIES.*—The duties of the Weather Commission
12 are as follows:

13 (1) To assess the weather forecasts and forecast
14 products of the Administration as described in sub-
15 section (a)(1).

16 (2) To provide advice to the Federal government,
17 including Congress, as described in subsection (a)(1).

18 (3) To obtain public comment on the weather
19 forecasts and products of the Administration that the
20 Administrator determines are the highest priority for
21 users of such forecasts and products.

22 (d) *REPORT.*—

23 (1) *IN GENERAL.*—Not later than 2 years after
24 the date of the enactment of this Act, the Weather
25 Commission shall submit to Congress and make avail-

1 *able to the public on an Internet website a report on*
 2 *matters relating to the activities of the Weather Com-*
 3 *mission.*

4 (2) *CONTENTS.—The report submitted under*
 5 *paragraph (1) shall include the following:*

6 (A) *The findings of the Weather Commis-*
 7 *sion with respect to the assessment conducted*
 8 *under paragraph (1) of subsection (c).*

9 (B) *The findings of the Weather Commis-*
 10 *sion with respect to the public comments ob-*
 11 *tained under paragraph (3) of such subsection*

12 (C) *Such recommendations as the Weather*
 13 *Commission may have for legislative or adminis-*
 14 *trative action.*

15 (e) *EXEMPTION FROM FACCA.—The Weather Commis-*
 16 *sion shall not be subject to the requirements of the Federal*
 17 *Advisory Committee Act (5 U.S.C. App.).*

18 (f) *TERMINATION.—The Weather Commission shall*
 19 *terminate on the date that is 4 years after the date of enact-*
 20 *ment of this Act.*

21 (g) *AUTHORIZATION OF APPROPRIATIONS.—There is*
 22 *authorized to be appropriated to the Administrator to carry*
 23 *out this section \$1,000,000 for the period of fiscal years*
 24 *2015 through 2019.*

1 **SEC. 7. WEATHER IMPACTS TO COMMUNITIES AND INFRA-**
2 **STRUCTURE.**

3 (a) *REVIEW.*—The National Weather Service shall re-
4 view existing research, products, and services that meet the
5 specific needs of the urban environment, given its unique
6 physical characteristics and forecasting challenges. The re-
7 view should include research, products, and services with
8 the potential to improve modeling and forecasting capabili-
9 ties, by taking into account factors including varying build-
10 ing heights, impermeable surfaces, such as paved roads and
11 parking lots, lack of tree canopy, traffic pollution, and
12 inter-building wind effects.

13 (b) *REPORT.*—Upon completion of the review under
14 subsection (a), the Under Secretary of Commerce for Oceans
15 and Atmosphere shall submit to Congress a report, based
16 on the review, public comment, and recent publications by
17 the National Academy of Sciences, with a plan for how any
18 unmet research, modeling, and forecasting needs can be ad-
19 dressed and improved for high density populations center
20 end users.

21 **SEC. 8. DEPARTMENT OF DEFENSE WEATHER FORE-**
22 **CASTING ACTIVITIES.**

23 Not later than 60 days after the date of enactment of
24 this Act, the Administrator of the National Oceanic and
25 Atmospheric Administration shall submit to the Committee
26 on Commerce, Science, and Transportation of the Senate

1 *and the Committee on Transportation and Infrastructure*
 2 *of the House of Representatives a report analyzing the im-*
 3 *pacts of the proposed Air Force divestiture in the United*
 4 *States Weather Research and Forecasting Model, includ-*
 5 *ing—*

6 *(a) the impact on—*

7 *(1) the United States weather forecasting capa-*
 8 *bilities;*

9 *(2) the accuracy of civilian regional forecasts;*

10 *(3) the civilian readiness for traditional weather*
 11 *and extreme weather events in the United States; and*

12 *(4) the research necessary to develop the United*
 13 *States Weather Research and Forecasting Model; and*

14 *(b) such other analysis relating to the divestiture as*
 15 *the Administrator considers appropriate.*

16 **SEC. 9. NATIONAL WEATHER SERVICE; OPERATIONS AND**
 17 **WORKFORCE ANALYSIS.**

18 *The Administrator of the National Oceanic and At-*
 19 *mospheric Administration shall contract or continue to*
 20 *partner with an external organization to conduct a baseline*
 21 *analysis of the National Weather Service operations and*
 22 *workforce.*

23 **SEC. 10. WATER RESOURCES.**

24 *(a) NATIONAL WATER CENTER.—*

1 (1) *ESTABLISHMENT.*—*The Administrator of the*
 2 *National Oceanic and Atmospheric Administration*
 3 *shall maintain a National Water Center.*

4 (2) *FUNCTIONS.*—*The National Water Center*
 5 *may—*

6 (A) *facilitate collaboration across Federal*
 7 *and State departments and agencies, academia,*
 8 *and the private sector to improve understanding*
 9 *of water resources;*

10 (B) *make recommendations to water re-*
 11 *source managers;*

12 (C) *make recommendations to improve*
 13 *water resource forecasts; and*

14 (D) *facilitate the transition of water re-*
 15 *search into applications.*

16 (b) *TOTAL WATER PREDICTION.*—*The Under Sec-*
 17 *retary of Commerce for Oceans and Atmosphere, through*
 18 *the National Water Center, shall—*

19 (1) *initiate research and development activities*
 20 *to develop operational water resource prediction prod-*
 21 *ucts;*

22 (2) *collaborate with, and provide decision-sup-*
 23 *port regarding total water prediction to, other rel-*
 24 *evant Federal and State agencies, including—*

25 (A) *Army Corps of Engineers;*

- 1 (B) *United States Geological Survey;*
 2 (C) *Federal Emergency Management Agen-*
 3 *cy;*
 4 (D) *National Science Foundation;*
 5 (E) *Environmental Protection Agency;*
 6 (F) *State water resource agencies; and*
 7 (G) *State emergency management agencies;*
 8 *and*

9 (3) *in carrying out the responsibilities described*
 10 *in paragraphs (1) and (2), develop capabilities nec-*
 11 *essary for total water predictive capacity, including*
 12 *observations, modeling, data management, supercom-*
 13 *puting, social science, and communications.*

14 (c) *REPORT.—*

15 (1) *IN GENERAL.—Not later than 3 years after*
 16 *the date of enactment of this Act, the National Water*
 17 *Center shall submit to the Assistant Secretary of the*
 18 *Army for Civil Works a report on total water pre-*
 19 *dictive capabilities and products.*

20 (2) *CONTENTS.—The report may include rec-*
 21 *ommendations to improve engineering, design, oper-*
 22 *ations, and management of civil works projects, in-*
 23 *cluding the Central and Southern Florida Project and*
 24 *any project in the Apalachicola-Chattahoochee-Flint*
 25 *River System, to optimize water management, includ-*

1 *ing the implications of total water predictive products*
 2 *for—*

3 *(A) environmental protection and restora-*
 4 *tion, including restoration of water quality,*
 5 *water flows, fish and other aquatic species;*

6 *(B) reduced flood risk; and*

7 *(C) improved recreation.*

8 **SEC. 11. HURRICANE FORECAST IMPROVEMENT PROJECT.**

9 *(a) IN GENERAL.—The Administrator of the National*
 10 *Oceanic and Atmospheric Administration, in collaboration*
 11 *with the American weather industry and such academic en-*
 12 *tities as the Administrator considers appropriate, shall*
 13 *maintain a project to improve hurricane forecasting.*

14 *(b) GOAL.—The goal of the project maintained under*
 15 *subsection (a) shall be to develop and extend accurate hurri-*
 16 *cane forecasts and warnings in order to reduce loss of life,*
 17 *injury, and damage to the economy, with a focus on—*

18 *(1) improving the prediction of rapid inten-*
 19 *sification and track of hurricanes;*

20 *(2) improving the forecast and communication of*
 21 *storm surges from hurricanes; and*

22 *(3) incorporating risk communication research*
 23 *to create more effective watch and warning products.*

24 *(c) PROJECT PLAN.—Not later than 1 year after the*
 25 *date of enactment of this Act, the Administrator, acting*

1 *through the Director of the National Weather Service and*
2 *in consultation with the Assistant Administrator for Oce-*
3 *anic and Atmospheric Research and the Assistant Adminis-*
4 *trator for the National Ocean Service, shall develop a plan*
5 *for the project maintained under subsection (a) that details*
6 *the specific research, development, and technology transfer*
7 *activities, as well as corresponding resources and timelines,*
8 *necessary to achieve the goal set forth in subsection (b).*

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A BILL

To help enhance commerce through improved
seasonal forecasts, and for other purposes.

MAY 9, 2016

Reported with an amendment