

113TH CONGRESS
1ST SESSION

H. R. _____

To prioritize and redirect NOAA resources to a focused program of investment on near-term, affordable, and attainable advances in observational, computing, and modeling capabilities to deliver substantial improvement in weather forecasting and prediction of high impact weather events, such as tornadoes and hurricanes, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

M. _____ introduced the following bill; which was referred to the
Committee on _____

A BILL

To prioritize and redirect NOAA resources to a focused program of investment on near-term, affordable, and attainable advances in observational, computing, and modeling capabilities to deliver substantial improvement in weather forecasting and prediction of high impact weather events, such as tornadoes and hurricanes, 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 Forecasting
5 Improvement Act of 2013”.

1 **SEC. 2. PUBLIC SAFETY PRIORITY.**

2 In accordance with the critical responsibility of
3 NOAA to ensure and enhance the provision of data, fore-
4 casts, and warnings for the protection of life and property
5 and the enhancement of the national economy, the Under
6 Secretary shall make these weather-related activities the
7 top priority in the planning and management of programs
8 within all relevant line offices.

9 **SEC. 3. WEATHER RESEARCH AND FORECASTING INNOVA-**
10 **TION.**

11 (a) PROGRAM.—The Assistant Administrator for
12 OAR shall undertake a program to develop improved un-
13 derstanding of and forecast capabilities for atmospheric
14 events, placing priority on developing more accurate and
15 timely warnings and forecasts of high impact weather
16 events that endanger life and property.

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

19 (1) Improving the fundamental understanding
20 of weather consistent with section 2, including
21 boundary layer and other atmospheric processes.

22 (2) Research and development, and transfer of
23 knowledge, technologies, and applications to the
24 NWS and other appropriate agencies and entities,
25 related to—

26 (A) advanced radar technologies;

1 (B) aerial weather observing systems;

2 (C) high performance computing and infor-
3 mation technology networks;

4 (D) advanced forecast modeling, including
5 the development and use of new national and
6 global models that improve timing, track, and
7 intensity forecasts of severe storms, such as tor-
8 nadoes and hurricanes;

9 (E) observing system simulation experi-
10 ments as described in section 6;

11 (F) atmospheric chemistry and interactions
12 essential to accurately characterizing atmos-
13 pheric composition and predicting meteorolog-
14 ical processes; and

15 (G) additional sources of weather data and
16 information.

17 (3) A technology transfer initiative, carried out
18 jointly and in coordination with the Assistant Ad-
19 ministrator for Weather Services, to ensure contin-
20 uous development and transition of the latest sci-
21 entific and technological advances into NWS oper-
22 ations.

1 **SEC. 4. 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 Admin-
5 istrator for OAR, in coordination with the Assistant Ad-
6 ministrator for Weather Services and the Assistant Ad-
7 ministrator for NESDIS, shall issue a plan to restore
8 United States leadership in weather modeling, prediction,
9 and forecasting that—

10 (1) describes weather technology goals and ob-
11 jectives of NOAA for the program established under
12 section 3; and

13 (2) identifies and prioritizes specific research
14 and development activities and the associated mile-
15 stones necessary to achieve such goals and objec-
16 tives.

17 **SEC. 5. OBSERVING SYSTEM PLANNING.**

18 The Under Secretary shall—

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

23 (2) undertake ongoing systematic evaluations of
24 the combination of observing systems, data, and in-
25 formation needed to meet the requirements devel-
26 oped under paragraph (1), assessing various options

1 to maximize observational capabilities and their cost-
2 effectiveness;

3 (3) identify current and potential future data
4 gaps in observing capabilities related to the require-
5 ments under paragraph (1); and

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

8 **SEC. 6. OBSERVING SYSTEM SIMULATION EXPERIMENTS.**

9 (a) IN GENERAL.—In support of the requirements of
10 section 5, the Assistant Administrator for OAR shall un-
11 dertakes OSSEs to quantitatively assess the relative value
12 and benefits of observing capabilities and systems. Tech-
13 nical and scientific OSSE evaluations—

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

16 (A) global weather prediction;

17 (B) hurricane track and intensity fore-
18 casting;

19 (C) tornado warning times and accuracy;
20 and

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

23 (2) should be conducted in cooperation with
24 other appropriate entities within NOAA and other
25 Federal agencies.

1 (b) REQUIREMENTS.—OSSEs shall quantitatively—

2 (1) determine the potential impact of proposed
3 space-based, sub-orbital, and in-situ observing sys-
4 tems on analyses and forecasts;

5 (2) evaluate and compare observing system de-
6 sign options; and

7 (3) assess the relative capabilities and costs of
8 various observing systems and combinations of ob-
9 serving systems in providing data necessary to pro-
10 tect life and property.

11 (c) IMPLEMENTATION.—OSSEs—

12 (1) shall be conducted prior to the acquisition
13 of major Government-owned observing systems, in-
14 cluding polar-orbiting and geostationary satellite sys-
15 tems;

16 (2) shall be conducted prior to the purchase of
17 any new commercially-provided data critical to fore-
18 cast accuracy and may be conducted on existing ob-
19 serving systems;

20 (3) shall be conducted within 2 years after the
21 date of enactment of this Act for any existing com-
22 mercially-provided observing system data contract in
23 excess of \$15 million; and

1 (4) may be conducted on existing observing sys-
2 tems where such data costs NOAA in excess of \$20
3 million.

4 (d) RESULTS.—All OSSE results shall be publicly re-
5 leased and fully considered by NOAA for implementation.

6 **SEC. 7. COMPUTING RESOURCES PRIORITIZATION REPORT.**

7 Not later than 6 months after the date of enactment
8 of this Act, and annually thereafter, the NOAA Chief In-
9 formation Officer, in coordination with the Assistant Ad-
10 ministrators for OAR and the Assistant Administrator for
11 Weather Services, shall issue a plan for high performance
12 computing support of its advanced research and oper-
13 ational weather prediction models that—

14 (1) assures that NOAA aggressively pursues the
15 newest, fastest, and most cost effective high per-
16 formance computing technologies in support of its
17 weather prediction mission;

18 (2) assures a balance between the research re-
19 quirements to develop the next generation of re-
20 gional and global models and its highly reliable oper-
21 ational models;

22 (3) takes advantage of advanced development
23 concepts to make its next generation weather pre-
24 diction models available in beta-test mode to
25 NOAA's operational forecasters, its commercial

1 weather service partners, and its partners in aca-
2 demic and government research; and

3 (4) identifies opportunities to reallocate existing
4 advanced computing resources from lower priority
5 uses to improve operational weather prediction.

6 **SEC. 8. COMMERCIAL WEATHER DATA.**

7 (a) AMENDMENT.—Section 60161 of title 51, United
8 States Code, is amended by adding at the end the fol-
9 lowing: “This prohibition shall not extend to—

10 “(1) the purchase of weather data through con-
11 tracts with commercial providers; or

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

14 (b) REPORT.—Within 6 months after the date of en-
15 actment of this Act, the Under Secretary shall submit to
16 the Committee on Science, Space, and Technology of the
17 House of Representatives and the Committee on Com-
18 merce, Science, and Transportation of the Senate a report
19 assessing the range of commercial opportunities for ob-
20 taining space-based weather observations, including the
21 cost-effectiveness of these opportunities.

22 **SEC. 9. DEFINITIONS.**

23 In this Act:

1 (1) NESDIS.—The term “NESDIS” means
2 the National Environmental Satellite, Data, and In-
3 formation Service.

4 (2) NOAA.—The term “NOAA” means the Na-
5 tional Oceanic and Atmospheric Administration.

6 (3) NWS.—The term “NWS” means the Na-
7 tional Weather Service.

8 (4) OAR.—The term “OAR” means the Office
9 of Oceanic and Atmospheric Research.

10 (5) OSSE.—The term “OSSE” means the Ob-
11 serving System Simulation Experiment.

12 (6) UNDER SECRETARY.—The term “Under
13 Secretary” means the Under Secretary of Commerce
14 for Oceans and Atmosphere.

15 **SEC. 10. AUTHORIZATION OF APPROPRIATIONS.**

16 Out of funds made available for operations, research,
17 and facilities in OAR, there are authorized to be appro-
18 priated for each of fiscal years 2014 through 2017—

19 (1) \$100,000,000 to carry out section 3, of
20 which—

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

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

- 1 (2) \$18,000,000 for the joint technology trans-
- 2 fer initiative described in section 3(b)(3).