

117TH CONGRESS
1ST SESSION

S. _____

To amend the Weather Research and Forecasting Innovation Act of 2017 to require the Administrator of the National Oceanic and Atmospheric Administration to develop a plan and national guidance document to improve precipitation estimates, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. BOOKER (for himself and Mr. WICKER) introduced the following bill; which was read twice and referred to the Committee on

A BILL

To amend the Weather Research and Forecasting Innovation Act of 2017 to require the Administrator of the National Oceanic and Atmospheric Administration to develop a plan and national guidance document to improve precipitation estimates, 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 “Providing Research
5 and Estimates of Changes In Precipitation Act” or the
6 “PRECIP Act”.

1 **SEC. 2. AMENDMENT TO THE WEATHER RESEARCH AND**
2 **FORECASTING INNOVATION ACT OF 2017 TO**
3 **IMPROVE FEDERAL PRECIPITATION INFOR-**
4 **MATION.**

5 (a) IN GENERAL.—The Weather Research and Fore-
6 casting Innovation Act of 2017 (15 U.S.C. 8501 et seq.)
7 is amended by adding at the end the following:

8 **“TITLE VI—IMPROVEMENT OF**
9 **FEDERAL PRECIPITATION IN-**
10 **FORMATION**

11 **“SEC. 601. STUDY ON PRECIPITATION ESTIMATION.**

12 “(a) IN GENERAL.—Not later than 90 days after the
13 date of the enactment of the PRECIP Act, the Adminis-
14 trator, in consultation with other Federal agencies as ap-
15 propriate, shall seek to enter an agreement with the Na-
16 tional Academies under which the National Academies
17 shall—

18 “(1) conduct a study on the state of practice
19 and research needs for precipitation estimation, in-
20 cluding probable maximum precipitation estimation;
21 and

22 “(2) not later than 2 years after the date on
23 which such agreement is finalized—

24 “(A) submit to the Committee on Com-
25 merce, Science, and Transportation of the Sen-
26 ate and the Committee on Science, Space, and

1 Technology of the House of Representatives a
2 report on the results of the study conducted
3 under paragraph (1); and

4 “(B) make the report submitted under
5 subparagraph (A) publicly available on a
6 website.

7 “(b) REPORT ON STUDY.—The report submitted
8 under subsection (a)(2)(A) shall include the following:

9 “(1) An examination of the current state of
10 practice for precipitation estimation at scales appro-
11 priate for the needs of decisionmakers, and rationale
12 for further evolution of that field.

13 “(2) An evaluation of best practices for precipi-
14 tation estimation that—

15 “(A) are based on the best available
16 science, including assumptions of non-
17 stationarity; and

18 “(B) can be utilized by the user commu-
19 nity.

20 “(3) A framework for—

21 “(A) the development of a national guid-
22 ance document for estimating extreme precipi-
23 tation; and

24 “(B) evaluation of the strengths and chal-
25 lenges of the full spectrum of approaches for

1 such estimation, including for probable max-
2 imum precipitation studies.

3 “(4) A description of existing research needs in
4 the field of precipitation estimation in order to mod-
5 ernize current methodologies and incorporate the
6 best available science.

7 “(5) A description of in-situ, airborne, and
8 space-based observation requirements that could en-
9 hance precipitation estimation and development of
10 models, including an examination of the use of geo-
11 graphic information systems and geospatial tech-
12 nology for integration, analysis, and visualization of
13 precipitation data.

14 “(6) A recommended plan for a Federal re-
15 search and development program, including speci-
16 fications for costs, timeframes, and responsible agen-
17 cies for addressing identified research needs.

18 “(7) An analysis of the respective roles in pre-
19 cipitation estimation of various Federal agencies,
20 academia, State, tribal, territorial, and local govern-
21 ments, and other public and private stakeholders.

22 “(8) Recommendations for data management to
23 promote long-term needs such as enabling retrospec-
24 tive analyses and data discoverability, interoper-
25 ability, and reuse.

1 “(9) Recommendations for how data and serv-
2 ices from the entire enterprise can be best leveraged
3 by the Federal Government.

4 “(10) Such other topics as the Administrator or
5 the National Academies consider appropriate.

6 “(c) AUTHORIZATION OF APPROPRIATIONS.—There
7 is authorized to be appropriated to the National Oceanic
8 and Atmospheric Administration \$1,500,000 to carry out
9 the study under this section.

10 **“SEC. 602. IMPROVING PROBABLE MAXIMUM PRECIPITA-**
11 **TION ESTIMATES.**

12 “(a) IN GENERAL.—Not later than 90 days after the
13 date on which the National Academies makes publicly
14 available the report under section 601, the Administrator,
15 shall, in consideration of the recommendations included in
16 the report and in consultation with relevant partners, in-
17 cluding users of the data, develop a plan to—

18 “(1) not later than 6 years after the completion
19 of the report submitted under section 601 and not
20 less frequently than once every 10 years thereafter,
21 update probable maximum precipitation estimates
22 for the United States, such that each update in-
23 cludes estimates that incorporate assumptions of
24 non-stationarity;

1 “(2) coordinate with partners to conduct re-
2 search in the field of extreme precipitation esti-
3 mation, in accordance with the research needs iden-
4 tified in the report submitted under section 601;

5 “(3) make publicly available, in a searchable,
6 interoperable format, all probable maximum precipi-
7 tation studies developed by the National Oceanic and
8 Atmospheric Administration that the Administrator
9 has the legal right to redistribute and considers to
10 be at an appropriate state of development on an
11 internet website of the National Oceanic and Atmos-
12 pheric Administration; and

13 “(4) ensure all probable maximum precipitation
14 estimate data, products, and supporting documenta-
15 tion and metadata developed by the National Oce-
16 anic and Atmospheric Administration are preserved,
17 curated, and served by the National Oceanic and At-
18 mospheric Administration, as appropriate.

19 “(b) NATIONAL GUIDANCE DOCUMENT FOR THE DE-
20 VELOPMENT OF PROBABLE MAXIMUM PRECIPITATION
21 ESTIMATES.—The Administrator, in collaboration with
22 Federal agencies, State, territorial, tribal and local gov-
23 ernments, academia, and other partners the Administrator
24 considers appropriate, shall develop a national guidance
25 document that—

1 “(1) provides best practices that can be fol-
2 lowed by Federal and State regulatory agencies, pri-
3 vate meteorological consultants, and other users that
4 perform probable maximum precipitation studies;

5 “(2) considers the recommendations included in
6 the report submitted under section 601;

7 “(3) facilitates review of probable maximum
8 precipitation studies by regulatory agencies;

9 “(4) provides confidence in regional and site-
10 specific probable maximum precipitation estimates;
11 and

12 “(5) includes such other topics as the Adminis-
13 trator considers appropriate.

14 “(c) PUBLICATION.—Not later than 2 years after the
15 date on which the National Academies makes publicly
16 available the report under section 601, the Administrator
17 shall make publicly available the national guidance docu-
18 ment developed under subsection (b) on an internet
19 website of the National Oceanic and Atmospheric Admin-
20 istration.

21 “(d) UPDATES.—The Administrator shall update the
22 national guidance document developed under subsection
23 (b) not less frequently than once every 10 years after the
24 publication of the document under subsection (c) and

1 make such updates publicly available in accordance with
2 such subsection.

3 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated to the National Oceanic
5 and Atmospheric Administration to carry out this section
6 amounts as follows:

7 “(1) \$13,000,000 for fiscal year 2022.

8 “(2) \$14,000,000 for fiscal year 2023.

9 “(3) \$14,000,000 for fiscal year 2024.

10 “(4) \$2,000,000 for fiscal year 2025.

11 “(5) \$2,000,000 for fiscal year 2026.

12 “(6) \$2,000,000 for fiscal year 2027.

13 **“SEC. 603. DEFINITIONS.**

14 “ In this title:

15 “(1) ADMINISTRATOR.—The term ‘Adminis-
16 trator’ means the Under Secretary of Commerce for
17 Oceans and Atmosphere and the Administrator of
18 the National Oceanic and Atmospheric Administra-
19 tion.

20 “(2) NATIONAL ACADEMIES.—The term ‘Na-
21 tional Academies’ means the National Academies of
22 Sciences, Engineering, and Medicine.

23 “(3) UNITED STATES.—The term ‘United
24 States’ means, collectively, each State of the United
25 States, the District of Columbia, the Commonwealth

1 of Puerto Rico, American Samoa, Guam, the Com-
2 monwealth of the Northern Mariana Islands, the
3 Virgin Islands of the United States, and any other
4 territory or possession of the United States.”.

5 (b) CONFORMING AMENDMENT.—The table of con-
6 tents in section 1(b) of the Weather Research and Fore-
7 casting Innovation Act of 2017 (Public Law 115–25; 131
8 Stat. 91) is amended by adding at the end the following:

“TITLE VI—IMPROVEMENT OF FEDERAL PRECIPITATION
INFORMATION

“Sec. 601. Study on precipitation estimation.

“Sec. 602. Improving probable maximum precipitation estimates.

“Sec. 603. Definitions.”.