

119TH CONGRESS
1ST SESSION

S. 590

To require the Under Secretary of Commerce for Oceans and Atmosphere to maintain the National Mesonet Program, and for other purposes.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 13, 2025

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

A BILL

To require the Under Secretary of Commerce for Oceans and Atmosphere to maintain the National Mesonet Program, 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 “Improving Flood and
5 Agricultural Forecasts Act of 2025”.

6 **SEC. 2. NATIONAL MESONET PROGRAM.**

7 (a) PROGRAM.—The Under Secretary shall maintain
8 the National Mesonet Program (referred to in this section
9 as the “Program”), which shall—

1 (1) obtain observations to improve under-
2 standing of and forecast capabilities for atmospheric,
3 drought, fire, and water events, with a prioritization
4 on leveraging available commercial, academic, and
5 other non-Federal Government environmental data
6 to enhance coordination across the private, public,
7 and academic sectors of the weather enterprise in
8 the United States;

9 (2) establish means to integrate greater density
10 and more types of environmental observations into
11 the Program on an annual basis, including by en-
12 couraging local and regional networks of environ-
13 mental monitoring stations and in situ sensor net-
14 works, including soil moisture and ground-based
15 profilers, to participate in the Program;

16 (3) establish memoranda of understanding with
17 networks outside of the scope of the Program in fur-
18 therance of this section; and

19 (4) coordinate with satellite data and services
20 acquired under section 302 of the Weather Research
21 and Forecasting Innovation Act of 2017 (15 U.S.C.
22 8532).

23 (b) PROGRAM ELEMENTS.—In carrying out the Pro-
24 gram, the Under Secretary shall—

25 (1) increase data density by—

1 (A) improving and increasing the quantity
2 and density of environmental observations used
3 by the National Oceanic and Atmospheric Ad-
4 ministration (referred to in this section as the
5 “Administration”) and the National Weather
6 Service to support baseline forecasts, including
7 nowcasts, warnings, and hyper local forecasts
8 that protect individuals, businesses, agricultural
9 production, food security, military, and govern-
10 ment agencies in the United States, and ena-
11 bling such individuals and entities to operate in
12 a safe, efficient, and orderly manner;

13 (B) yielding increased quantities of bound-
14 ary-layer data to improve numerical weather
15 prediction performance, including in subsea-
16 sonal to seasonal timescales;

17 (C) identifying available terrestrial or ma-
18 rine environmental data, or quantifiable gaps in
19 such data, to improve the understanding of air-
20 sea interactions; and

21 (D) supporting the National Weather Serv-
22 ice in reaching its target of a 30-minute warn-
23 ing time for severe weather through better pre-
24 dictive model algorithms driven by increasingly
25 effective observations;

1 (2) monitor local meteorological conditions by—

2 (A) acquiring soil and moisture data to
3 monitor soil moisture, vegetation water content,
4 and moisture loss from evaporation, in support
5 of operational forecasting, the National Inte-
6 grated Drought Information System, and local
7 commercial, agricultural, and emergency man-
8 agement needs;

9 (B) supporting the National Coordinated
10 Soil Moisture Monitoring Network in acquiring
11 soil moisture and related data to support the
12 development of decision-support products and
13 other information services; and

14 (C) expanding and enhancing environ-
15 mental observational networks in the roadway
16 environment to provide real-time road weather
17 and surface conditions for surface transpor-
18 tation and related economic sectors; and

19 (3) administer the Program by—

20 (A) obtaining data in furtherance of this
21 section only when demonstrably cost effective
22 and meeting or exceeding data quality stand-
23 ards available to the Administration;

24 (B) subject to the requirement in subpara-
25 graph (A), leveraging existing networks of envi-

ronmental monitoring stations, including supplemental radar systems, to increase the quantity and density of environmental observations and data available to the Administration;

(C) providing the critical technical and administrative infrastructure needed to facilitate rapid integration and sustained use of new and emerging networks of environmental monitoring stations anticipated in coming years from non-Federal Government sources;

(D) coordinating with existing data developed by the Administration and used for forecasts, including data from the National Environmental Satellite, Data, and Information Service, the Integrated Ocean Observing System, the Global Ocean Monitoring and Observing Program, the National Data Buoy Center, and the National Ocean Service; and

(E) identifying and communicating to the Office of Oceanic and Atmospheric Research and other partners priorities of research and development needed to advance observations in the Program.

(c) FINANCIAL AND TECHNICAL ASSISTANCE.—

1 (1) IN GENERAL.—In furtherance of the Pro-
 2 gram, in a fiscal year, the Under Secretary may
 3 award not less than 15 percent of the amount appro-
 4 priated for the Program for that fiscal year for fi-
 5 nancial assistance to State, Tribal, private, and aca-
 6 demic entities seeking to build, expand, or upgrade
 7 equipment and capacity of mesonet systems.

8 (2) OTHER FEDERAL AWARDS.—Financial as-
 9 sistance under this subsection may be made in co-
 10 ordination with and in addition to awards from
 11 other Federal agencies.

12 (3) AGREEMENTS.—Before receiving financial
 13 assistance under paragraph (1), the State, Tribal,
 14 private, or academic entity seeking financial assist-
 15 ance under this subsection shall enter into an agree-
 16 ment with the Under Secretary to provide data to
 17 the Program, subject to verification by the Program
 18 of the relative operational value and evaluation of
 19 the cost of such data, for use in weather prediction,
 20 severe weather warnings, and emergency response.

21 (4) ASSISTANCE AND OTHER SUPPORT.—The
 22 Under Secretary may provide—

23 (A) technical assistance, project implemen-
 24 tation support, and guidance to State, Tribal,

1 private, and academic entities seeking financial
2 assistance under this subsection; and

3 (B) technical and financial assistance for
4 maintenance of monitoring stations in under-
5 represented or remote areas of the country
6 where it is financially unfeasible for one entity
7 to operate such stations without such assist-
8 ance.

9 (5) TERMS.—In providing financial assistance
10 under this subsection, the Under Secretary shall es-
11 tablish terms to ensure that each State, Tribal, pri-
12 vate, or academic entity that receives financial as-
13 sistance under this subsection receives a level of sup-
14 port commensurate with the quality and other char-
15 acteristics of the data to be provided.

16 (6) DETERMINATION.—A State, Tribal, private,
17 or academic entity may only receive financial assist-
18 ance under this subsection if the Under Secretary
19 determines such entity will provide sufficient finan-
20 cial support from non-Federal Government sources
21 and fully maintain the quality of the mesonet system
22 and associated data standards required by the Pro-
23 gram for a period of not less than 5 years.

24 (7) PRIORITY.—The Under Secretary shall
25 prioritize providing assistance under paragraph (1)

1 to not fewer than one entity in a remote area or an
2 area that has a lack of environmental monitoring
3 stations described in subsection (a)(2).

4 (d) ADVISORY COMMITTEE.—

5 (1) IN GENERAL.—The Under Secretary shall
6 ensure the Program has an active advisory com-
7 mittee of subject matter experts to make rec-
8 ommendations to the Administration on—

9 (A) the identification, implementation, pro-
10 curement, and tracking of data needed to sup-
11 plement the Program; and

12 (B) improvements, expansions, and acqui-
13 sitions of available data.

14 (2) DESIGNATION OF EXISTING COMMITTEE.—

15 The Under Secretary may designate an existing ad-
16 visory committee, subcommittee, or working group of
17 the Federal Government, including the Science Advi-
18 sory Board of the Administration, to carry out the
19 requirement under paragraph (1).

20 (3) ACADEMIC EXPERTISE.—The advisory com-
21 mittee under paragraph (1), in consultation with the
22 Program, shall include expertise from one or more
23 institutions of higher education (as defined in sec-
24 tion 101 of the Higher Education Act of 1965 (20
25 U.S.C. 1001)) to assist the advisory committee to

1 identify, evaluate, and recommend potential partner-
2 ships, regional or subregional consortia, and collabo-
3 rative methods that would expand the number of
4 participants and volume of data in the Program.

5 (e) REGULAR BRIEFINGS.—

6 (1) IN GENERAL.—Not less frequently than an-
7 nually through 2035, the Under Secretary shall pro-
8 vide regular briefings to the Committee on Com-
9 merce, Science, and Transportation of the Senate
10 and the Committee on Science, Space, and Tech-
11 nology of the House of Representatives on all activi-
12 ties under the Program.

13 (2) BRIEFING CONTENT.—Each briefing re-
14 quired under paragraph (1) shall include informa-
15 tion relating to the following:

16 (A) Efforts to implement the activities de-
17 scribed in subsection (b).

18 (B) Any financial or technical assistance
19 provided pursuant to subsection (c).

20 (C) Efforts to address recommendations
21 received from the advisory committee under
22 subsection (d), if any.

23 (D) The potential need and associated ben-
24 efits of a coastal and ocean mesonet, or other
25 emerging areas of weather data needs.

1 (E) Progress toward eliminating gaps in
 2 weather observation data in States and regions
 3 of the United States.

4 (F) Any other topic the Under Secretary
 5 determines relevant.

6 (f) DEFINITIONS.—In this section:

7 (1) SEASONAL, STATE, SUBSEASONAL, UNDER
 8 SECRETARY, WEATHER ENTERPRISE.—the terms
 9 “seasonal”, “State”, “subseasonal”, “Under Sec-
 10 retary”, and “weather enterprise” have the mean-
 11 ings given such terms in section 2 of the Weather
 12 Research and Forecasting Innovation Act of 2017
 13 (15 U.S.C. 8501).

14 (2) WEATHER DATA.—The term “weather
 15 data” means information used to track and predict
 16 weather conditions and patterns, including forecasts,
 17 observations, and derivative products from such in-
 18 formation.

19 (g) AUTHORIZATION OF APPROPRIATIONS.—From
 20 amounts authorized to be appropriated to the National
 21 Weather Service, there shall be available not more than
 22 the following amounts to carry out this section:

23 (1) \$50,000,000 for fiscal year 2025.

24 (2) \$55,000,000 for fiscal year 2026.

25 (3) \$61,000,000 for fiscal year 2027.

- 1 (4) \$68,000,000 for fiscal year 2028.
- 2 (5) \$70,000,000 for fiscal year 2029.

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