

118TH CONGRESS
2D SESSION

S. 4901

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

JULY 31, 2024

Mr. SCHATZ (for himself and Mr. MARSHALL) 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 2024”.

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

7 (a) PROGRAM.—The Under Secretary of Commerce
8 for Oceans and Atmosphere shall maintain the National

1 Mesonet Program (referred to in this section as the “Pro-
2 gram”), which shall—

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

11 (2) establish means to integrate greater density
12 and more types of environmental observations into
13 the Program on an annual basis, including by en-
14 couraging local and regional networks of environ-
15 mental monitoring stations, in situ sensor networks,
16 including soil moisture and stream gage networks,
17 and satellite constellations, to participate in the Pro-
18 gram; and

19 (3) establish memoranda of understanding with
20 networks outside of the scope of the Program in fur-
21 therance of this section.

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

24 (1) increase data density by—

1 (A) improving and increasing the quantity
2 and density of environmental observations used
3 by the Administration and the National Weath-
4 er Service to support baseline forecasts, includ-
5 ing nowcasts, warnings, and hyper local fore-
6 casts that protect individuals, businesses, agri-
7 cultural production, food security, military, and
8 government agencies in the United States, and
9 enabling such individuals and entities to operate
10 in a safe, efficient, and orderly manner;

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

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

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

24 (2) monitor local meteorological conditions by—

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

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

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

18 (3) administer the Program by—

19 (A) obtaining data in furtherance of this
20 section only when demonstrably cost effective
21 and meeting or exceeding data quality stand-
22 ards available to the National Oceanic and At-
23 mospheric Administration (referred to in this
24 section as the “Administration”);

1 (B) subject to the requirement in subpara-
2 graph (A), leveraging existing networks of envi-
3 ronmental monitoring stations, including sup-
4 plemental radar systems, to increase the quan-
5 tity and density of environmental observations
6 and data available to the Administration;

7 (C) providing the critical technical and ad-
8 ministrative infrastructure needed to facilitate
9 rapid integration and sustained use of new and
10 emerging networks of environmental monitoring
11 stations anticipated in coming years from non-
12 Federal Government sources;

13 (D) coordinating with existing data devel-
14 oped by the Administration and used for fore-
15 casts, including data from the National Envi-
16 ronmental Satellite, Data, and Information
17 Service, the Integrated Ocean Observing Sys-
18 tem, the Global Ocean Monitoring and Observ-
19 ing Program, the National Data Buoy Center,
20 and the National Ocean Service; and

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

1 (c) FINANCIAL AND TECHNICAL ASSISTANCE.—

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

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

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

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

24 (A) technical assistance, project implemen-
25 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 1 entity to
7 operate such stations without such assistance.

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

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

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

1 to not fewer than 1 entity in an underrepresented or
2 remote area.

3 (d) ADVISORY COMMITTEE.—

4 (1) IN GENERAL.—The Under Secretary shall
5 ensure the Program has an active advisory com-
6 mittee of subject matter experts to make rec-
7 ommendations to the Administration on the identi-
8 fication, implementation, procurement, and tracking
9 of data needed to supplement the Program, and rec-
10 ommend improvements, expansions, and acquisitions
11 of available data.

12 (2) DESIGNATION OF EXISTING COMMITTEE.—
13 The Under Secretary may designate an existing ad-
14 visory committee, subcommittee, or working group of
15 the Federal Government, including the Science Advi-
16 sory Board of the Administration, to carry out the
17 requirement under paragraph (1).

18 (3) ACADEMIC EXPERTISE.—The advisory com-
19 mittee under paragraph (1), in consultation with the
20 Program, shall include expertise from 1 or more in-
21 stitutions of higher education (as defined in section
22 101 of the Higher Education Act of 1965 (20
23 U.S.C. 1001)) to assist the advisory committee to
24 identify, evaluate, and recommend potential partner-
25 ships, regional or subregional consortia, and collabo-

1 rative methods that would expand the number of
2 participants and volume of data in the Program.

3 (e) REGULAR BRIEFINGS.—

4 (1) IN GENERAL.—The Under Secretary shall
5 provide regular briefings, not less frequently than
6 twice annually, to the Committee on Commerce,
7 Science, and Transportation of the Senate and the
8 Committee on Science, Space, and Technology of the
9 House of Representatives on all activities under the
10 Program.

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

14 (A) Efforts to implement the activities de-
15 scribed in subsection (b).

16 (B) Any financial or technical assistance
17 provided pursuant to subsection (c).

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

21 (D) The potential need and associated ben-
22 efits of a coastal and ocean mesonet, or other
23 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, the terms “sea-
7 sonal”, “State”, “subseasonal”, “Under Secretary”, and
8 “weather enterprise” have the meanings given those terms
9 in section 2 of the Weather Research and Forecasting In-
10 novation Act of 2017 (15 U.S.C. 8501).

11 (g) AUTHORIZATION OF APPROPRIATIONS.—There
12 are authorized to be appropriated to the Under Secretary
13 to carry out this section—

14 (1) \$50,000,000 for fiscal year 2025;

15 (2) \$55,000,000 for fiscal year 2026;

16 (3) \$61,000,000 for fiscal year 2027;

17 (4) \$68,000,000 for fiscal year 2028; and

18 (5) \$70,000,000 for fiscal year 2029.

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