

119TH CONGRESS
1ST SESSION

H. R. 3771

To increase observations, understanding, and forecasting of coastal flooding and storm surge events, to address weather observation gaps in highly vulnerable areas, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 5, 2025

Mr. KEAN introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To increase observations, understanding, and forecasting of coastal flooding and storm surge events, to address weather observation gaps in highly vulnerable areas, 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 “Protecting Coasts and
5 Cities from Severe Weather Act”.

1 **SEC. 2. COASTAL FLOODING AND STORM SURGE FORECAST**
2 **IMPROVEMENT PROGRAM.**

3 (a) IN GENERAL.—The Under Secretary of Com-
4 merce for Oceans and Atmosphere (in this Act referred
5 to as the “Under Secretary”), in collaboration with the
6 United States weather industry (as such term is defined
7 in section 2 of the Weather Research and Forecasting In-
8 novation Act of 2017 (15 U.S.C. 8501)) and academic
9 partners, shall establish a coastal flooding and storm
10 surge forecast improvement program (in this section refer
11 to as the “program”).

12 (b) GOAL.—The goal of the program shall be to re-
13 duce the loss of life or property from coastal flooding, in-
14 cluding high tide flooding, and storm surge events through
15 the development and extension of accurate, effective, ac-
16 tionable, and probable forecasts and warnings.

17 (c) PRIORITY.—In implementing the program, the
18 Under Secretary shall prioritize activities that carry out
19 the following:

20 (1) Improve understanding and capacity for
21 real-time operational prediction of the ocean’s role in
22 coastal flooding, including high tide flooding, and
23 storm surge events.

24 (2) Improve the capacity to mitigate, adapt to,
25 or prevent the impacts of coastal flooding, including
26 high tide flooding, and storm surge events, including

1 by improving the understanding and capacity of
2 coastal communities to perceive, comprehend, and
3 respond to forecast information.

4 (3) Incorporating data from in situ distributed
5 sensors into predictive models and re-analyses.

6 (4) Developing probabilistic coastal flooding, in-
7 cluding high tide flooding, and storm surge esti-
8 mates to complement worst-case scenario estimates,
9 including for use in long-term planning and risk
10 management by States, Tribal governments, local-
11 ities, and emergency managers in coordination with
12 the Federal Emergency Management Agency, as ap-
13 propriate.

14 (5) Establishing skill metrics for coastal inun-
15 dation forecasting that quantify the benefits of dy-
16 namical modeling, data assimilation, and machine
17 learning improvements in the probabilistic forecast
18 of coastal flooding, including high tide flooding, and
19 storm surge risk and impacts.

20 (6) Improving operational regional storm surge
21 models and, in collaboration with the United States
22 Geological Survey, wave prediction models to en-
23 hance probabilistic guidance and messaging.

24 (d) INNOVATIVE OBSERVATIONS AND MODELING.—

25 The Under Secretary shall ensure the program periodically

1 examines, tests, and evaluates the value of incorporating
2 enhanced model physics, hybrid dynamical or machine
3 learning based prediction systems, and innovative observa-
4 tions, such as novel sensor technologies, observation net-
5 works, crewed or uncrewed systems, and hosted instru-
6 ments on commercial aircrafts, vessels, and satellites, with
7 respect to the improvement of coastal flooding, including
8 high tide flooding, and storm surge forecasts, predictions,
9 and warnings.

10 (e) PROGRAM PLAN.—Not later than 180 days after
11 the date of the enactment of this Act, the Under Secretary
12 shall develop a plan that details the specific research, de-
13 velopment, data acquisition, and technology transfer ac-
14 tivities, as well as corresponding resources and timelines,
15 necessary to achieve the goal of the program under sub-
16 section (b).

17 (f) ANNUAL BUDGET FOR PLAN SUBMISSION.—After
18 the development of the plan pursuant to subsection (e),
19 the Under Secretary shall, not less frequently than annu-
20 ally, submit to Congress a proposed budget corresponding
21 with the activities identified in such plan.

22 **SEC. 3. DATA VOIDS IN HIGHLY VULNERABLE AREAS OF**
23 **THE UNITED STATES.**

24 (a) IN GENERAL.—The Under Secretary, in coordi-
25 nation with the Director of the National Weather Service

1 and the Administrator of the Federal Emergency Manage-
2 ment Agency, in consultation with the United States
3 weather industry, academic partners, and in accordance
4 with activities implemented through existing regional at-
5 mospheric, coastal, ocean, and Great Lakes observing sys-
6 tems, shall carry out activities to ensure equitable and
7 comprehensive weather observation coverage, impact-
8 based decision support services, and emergency informa-
9 tion sharing in the United States, including the following:

10 (1) Identifying regions in the United States and
11 the territories of the United States that are under-
12 observed or highly vulnerable to weather impacts
13 that threaten human life, health, and the economy.

14 (2) Identifying any challenges that contribute to
15 the lack of operations under paragraph (1).

16 (3) Increasing weather observations and devel-
17 oping new weather observational capabilities, such as
18 urban heat island mapping campaigns, with respect
19 to the regions identified under paragraph (1).

20 (4) Establishing or supporting testbeds and de-
21 ployments of decision-support services to Federal,
22 State, and local emergency operations centers to de-
23 velop and integrate new weather, water, and climate
24 observation or emergency information sharing tools,

1 with respect to the regions identified under para-
2 graph (1).

3 (5) To the maximum extent practicable, ad-
4 vancing weather and water forecasting and climate
5 modeling capabilities for the regions identified under
6 paragraph (1).

7 (6) Undertaking workforce development efforts
8 for emergency management officials and meteorolo-
9 gists in the regions identified under paragraph (1).

10 (7) Using data-void-filling observations to bet-
11 ter resolve extreme rainfall in complex topography.

12 (8) Contributing to a national integrated heat
13 health information system.

14 (b) INTERAGENCY PARTNERSHIP TO SUPPORT PILOT
15 PROJECTS.—In carrying out this section, the Under Sec-
16 retary, acting through the Director of the National Weath-
17 er Service and the Administrator of the Federal Emer-
18 gency Management Agency, shall establish an interagency
19 partnership to support pilot projects that accelerate co-
20 ordination and use of localized weather data in infrastruc-
21 ture and emergency management decisions by Federal,
22 State, and local officials.

23 (c) PRIORITY.—At least one pilot project under sub-
24 section (b) shall address key science challenges to using
25 mesonet data in local decision making and development

1 of new tools and training for owners and operators of crit-
2 ical infrastructure (as such term is defined in section
3 1016(e) of Public Law 107–56 (42 U.S.C. 5195c(e))),
4 such as dams, energy generation and distribution facili-
5 ties, nuclear power plants, and transportation networks.

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