I

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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

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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.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Protecting Coasts and Cities from Severe Weather Act''.

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

(a) IN GENERAL.—The Under Secretary of Commerce for Oceans and Atmosphere (in this Act referred to as the ''Under Secretary''), in collaboration with the United States weather industry (as such term is defined in section 2 of the Weather Research and Forecasting Innovation Act of 2017 (15 U.S.C. 8501)) and academic partners, shall establish a coastal flooding and storm surge forecast improvement program (in this section refer to as the ''program'').

(b) GOAL.—The goal of the program shall be to reduce the loss of life or property from coastal flooding, including high tide flooding, and storm surge events through the development and extension of accurate, effective, actionable, and probable forecasts and warnings.

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

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

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

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

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

(4) Developing probabilistic coastal flooding, including high tide flooding, and storm surge estimates to complement worst-case scenario estimates, including for use in long-term planning and risk management by States, Tribal governments, localities, and emergency managers in coordination with the Federal Emergency Management Agency, as appropriate.

(5) Establishing skill metrics for coastal inundation forecasting that quantify the benefits of dynamical modeling, data assimilation, and machine learning improvements in the probabilistic forecast of coastal flooding, including high tide flooding, and storm surge risk and impacts.

(6) Improving operational regional storm surge models and, in collaboration with the United States Geological Survey, wave prediction models to enhance probabilistic guidance and messaging.

(d) INNOVATIVE OBSERVATIONS AND MODELING.—The Under Secretary shall ensure the program periodically

examines, tests, and evaluates the value of incorporating enhanced model physics, hybrid dynamical or machine learning based prediction systems, and innovative observations, such as novel sensor technologies, observation networks, crewed or uncrewed systems, and hosted instruments on commercial aircrafts, vessels, and satellites, with respect to the improvement of coastal flooding, including high tide flooding, and storm surge forecasts, predictions, and warnings.

(e) PROGRAM PLAN.—Not later than 180 days after the date of the enactment of this Act, the Under Secretary shall develop a plan that details the specific research, development, data acquisition, and technology transfer activities, as well as corresponding resources and timelines, necessary to achieve the goal of the program under subsection (b).

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

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

(a) IN GENERAL.—The Under Secretary, in coordination with the Director of the National Weather Service

and the Administrator of the Federal Emergency Management Agency, in consultation with the United States weather industry, academic partners, and in accordance with activities implemented through existing regional atmospheric, coastal, ocean, and Great Lakes observing systems, shall carry out activities to ensure equitable and comprehensive weather observation coverage, impact-based decision support services, and emergency information sharing in the United States, including the following:

(1) Identifying regions in the United States and the territories of the United States that are underobserved or highly vulnerable to weather impacts that threaten human life, health, and the economy.

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

(3) Increasing weather observations and developing new weather observational capabilities, such as urban heat island mapping campaigns, with respect to the regions identified under paragraph (1).

(4) Establishing or supporting testbeds and deployments of decision-support services to Federal, State, and local emergency operations centers to develop and integrate new weather, water, and climate observation or emergency information sharing tools,

with respect to the regions identified under paragraph (1).

(5) To the maximum extent practicable, advancing weather and water forecasting and climate modeling capabilities for the regions identified under paragraph (1).

(6) Undertaking workforce development efforts for emergency management officials and meteorologists in the regions identified under paragraph (1).

(7) Using data-void-filling observations to better resolve extreme rainfall in complex topography.

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

(b) INTERAGENCY PARTNERSHIP TO SUPPORT PILOT PROJECTS.—In carrying out this section, the Under Secretary, acting through the Director of the National Weather Service and the Administrator of the Federal Emergency Management Agency, shall establish an interagency partnership to support pilot projects that accelerate coordination and use of localized weather data in infrastructure and emergency management decisions by Federal, State, and local officials.

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

of new tools and training for owners and operators of critical infrastructure (as such term is defined in section 1016(e) of Public Law 107–56 (42 U.S.C. 5195c(e))), such as dams, energy generation and distribution facilities, nuclear power plants, and transportation networks.

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