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SENATE

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{ 118-140

NATIONAL WEATHER SERVICE
COMMUNICATIONS IMPROVEMENT ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 1414



DECEMBER 19, 2023.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED EIGHTEENTH CONGRESS

FIRST SESSION

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NATIONAL WEATHER SERVICE COMMUNICATIONS
IMPROVEMENT ACT

DECEMBER 19, 2023.—Ordered to be printed

Ms. CANTWELL, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 1414]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1414) to improve the instant messaging service used by the National Weather Service, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of S. 1414, the National Weather Service Communications Improvement Act, is to amend the Weather Research and Forecasting Innovation Act of 2017¹ to improve the reliability of the National Weather Service's (NWS) internal messaging system during extreme weather events such as floods, fires, tornadoes, and tsunamis, by authorizing the use of a commercial cloud communications service.

BACKGROUND AND NEEDS

The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) provides weather, water, and climate data as well as forecasts, warnings, and impact-based decision support services for the purposes of protecting life and property and enhancing the national economy. The National Weather Service Communications Improvement Act would direct the NWS to improve its instant messaging service by requiring the NWS to implement a commercial off-the-shelf (COTS) communications solu-

¹ 15 U.S.C. 8541 et seq.; Public Law 115-25.

tion hosted on the public cloud to accommodate future growth and improve alert system performance. This bill would increase reliability of the internal messaging system between NWS forecasters and regional weather offices to improve forecasts and real-time data-sharing between NWS personnel, and therefore improve accuracy and timeliness of hazard communications with the public.

NWS currently uses NWSSchat, an instant messaging service, to share important weather information and decision expertise with partners across all levels of government, emergency managers, and media.² This service allows multiple users to communicate with each other in chat rooms and gives each NWS office its own specific chat room.³ NWSSchat is utilized to improve decision-making during discussions related to severe weather events, to provide real-time feedback to partners, and to communicate significant event reports back to NWS personnel for effective warning decisions.⁴

COMMERCIAL OFF-THE-SHELF COMMUNICATIONS SOLUTION

A COTS communications solution is a pre-packaged, ready-to-use communications system that is commercially available and can be easily integrated into an organization’s existing infrastructure.⁵ They are often lower in cost, require less development time, can be readily integrated into existing systems, and can lower lifecycle costs resulting from using readily available and up-to-date product.⁶

SUMMARY OF PROVISIONS

If enacted, S. 1414 would amend title IV of the Weather Research and Forecasting Innovation Act of 2017⁷ by doing the following:

- Require the Director of the NWS to improve instant messaging services used by the NWS by fiscal year 2028.
- Require the improved internal instant messaging services used by forecasters and other NOAA personnel to be hosted on the public cloud.

LEGISLATIVE HISTORY

S. 1414, the National Weather Service Communications Improvement Act, was introduced on May 3, 2023, by Senator Cantwell (for herself and Senator Cruz) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On May 10, 2023, the Committee met in open Executive Session and, by voice vote, ordered S. 1416 reported favorably without amendment.

On March 9, 2023, H.R. 1496, a House companion bill to S. 1414, was introduced by Representative Feenstra (for himself and 13 cosponsors) and was referred to the Committee on Science, Space, and Technology of the House of Representatives. Three additional

²“Frequently Asked Questions,” NOAA, National Weather Service (<https://nwschat.weather.gov/FAQ.php>).

³Ibid.

⁴Ibid.

⁵Christopher Trick, “What Is COTS (Commercial-off-the-Shelf)?,” Trenton Systems (<https://www.trentonsystems.com/blog/what-is-cots-commercial-off-the-shelf#:text=COTS%2C%20or%20commercial%2Doff%2Dinteroperate%20with%20existing%20system%20components>).

⁶Firoz Irani, “Commercial Off-The-Shelf (COTS) vs Custom Software Development,” MotoCMS (<https://www.motocms.com/blog/en/commercial-off-the-shelf/>).

⁷Public Law 115–25.

cosponsors were later added. On May 16, 2023, H.R. 1496 was reported favorably without amendment.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 1414, National Weather Service Communications Improvement Act			
As ordered reported by the House Committee on Commerce, Science, and Transportation on May 10, 2023			
By Fiscal Year, Millions of Dollars	2024	2024-2028	2024-2033
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	2	11	not estimated
Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2034?	No	Statutory pay-as-you-go procedures apply? No	
		Mandate Effects	
Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2034?	No	Contains intergovernmental mandate? No	
		Contains private-sector mandate? No	

S. 1414 would require the National Weather Service (NWS) to replace its current instant messaging system with an updated, cloud-based system. The NWS uses instant messages to share critical warning decisions and other types of significant weather information with public safety officials, emergency personnel, and the media. In 2022, NWS started to replace the instant messaging system and allocated \$3 million in 2023 to continue those activities.

Using information from the NWS and spending patterns for similar activities, CBO estimates that implementing S. 1414 would cost \$11 million over the 2024–2028 period; any spending would be subject to the availability of appropriated funds.

The costs of the legislation, detailed in Table 1, fall within budget function 300 (natural resources and environment).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER S. 1414

	By fiscal year, millions of dollars—					
	2024	2025	2026	2027	2028	2024–2028
Estimated Authorization	3	3	3	3	0	12
Estimated Outlays	2	2	3	3	1	11

On May 11, 2023, CBO transmitted a cost estimate for H.R. 1496, the National Weather Service Communications Improvement Act, as ordered reported by the House Committee on Science, Space, and Technology on March 29, 2023. The two pieces of legislation are similar, and CBO’s estimates of their budgetary effects are the same.

The CBO staff contact for this estimate is Aurora Swanson. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

PHILLIP L. SWAGEL,
Director, Congressional Budget Office.

REGULATORY IMPACT STATEMENT

Because S. 1414 does not create any new programs, the legislation will have no additional regulatory impact, and will result in no additional reporting requirements. The legislation will have no further effect on the number or types of individuals and businesses regulated, the economic impact of such regulation, the personal privacy of affected individuals, or the paperwork required from such individuals and businesses.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title

This section would provide that the bill may be cited as the “National Weather Service Communications Improvement Act”.

Section 2. National Weather Service communications

Section 2 would add a new section 415 to title IV of the Weather Research and Forecasting Innovation Act of 2017.

Subsection (a) of this new section 415 would add a requirement for the Director of the NWS to improve instant messaging services used within the NWS by October 1, 2027. The subsection would also require the new instant messaging service to be a commercial off-the-shelf communications solution that replaces NWSChat and is hosted on the public cloud. The subsection would also require the Director of the NWS to ensure the communications solution would accommodate future growth, perform successfully with increased users, is easy to use and is similar to current systems already in use. The subsection further would define the term “public cloud”.

Subsection (b) of this new section 415 would clarify that funds for this section can only come from amounts authorized to NOAA before the date of enactment of this Act.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

WEATHER RESEARCH AND FORECASTING INNOVATION ACT OF 2017

* * * * *

[15 U.S.C. 8541 et seq.]

TITLE IV—FEDERAL WEATHER COORDINATION

SEC. 401. * * *

SEC. 415. NATIONAL WEATHER SERVICE COMMUNICATIONS.

(a) IMPROVEMENT OF INSTANT MESSAGING SERVICE.—

(1) IN GENERAL.—The Director of the National Weather Service shall improve the instant messaging service used by personnel of the National Weather Service by implementing by October 1, 2027, a commercial off-the-shelf communications solution that replaces the instant messaging service commonly referred to as “NWSChat”.

(2) REQUIREMENTS.—The communications solution implemented under paragraph (1) shall—

(A) be hosted on the public cloud; and

(B) satisfy requirements set forth by the Director to ensure that the solution—

(i) best accommodates future growth;

(ii) performs successfully with increased numbers of users;

(iii) is easy to use for the majority of users; and

(iv) is similar to systems already in commercial use.

(3) DEFINITION OF PUBLIC CLOUD.—In this subsection, the term “public cloud” means an information technology model in which service providers make computing services, including compute and storage and develop-and-deploy environments and applications, available on-demand to organizations and individuals over the public internet.

(b) NO ADDITIONAL FUNDS AUTHORIZED.—Funds to carry out this section may only come from amounts authorized to be appropriated to the National Oceanic and Atmospheric Administration before the date of the enactment of the National Weather Service Communications Improvement Act.

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