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REPORT
117–308

NOAA WEATHER RADIO MODERNIZATION ACT OF 2021

MAY 6, 2022.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Ms. JOHNSON of Texas, from the Committee on Science, Space, and Technology, submitted the following

R E P O R T

[To accompany H.R. 5324]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 5324) to provide guidance for and investment in the upgrade and modernization of the National Oceanic and Atmospheric Administration Weather Radio All Hazards network, and for other purposes, having considered the same, reports favorably thereon with an amendment and recommends that the bill as amended do pass.

CONTENTS

		Page
I.	Amendment	2
II.	Purpose of the Bill	3
III.	Background and Need for the Legislation	3
IV.	Committee Hearings	4
V.	Committee Consideration and Votes	4
VI.	Summary of Major Provisions of the Bill	5
VII.	Section-By-Section Analysis (By Title and Section)	5
VIII.	Committee Views	6
IX.	Cost Estimate	6
X.	Congressional Budget Office Cost Estimate	6
XI.	Compliance with Public Law 104–4 (Unfunded Mandates)	8
XII.	Committee Oversight Findings and Recommendations	8
XIII.	Statement on General Performance Goals and Objectives	8
XIV.	Federal Advisory Committee Statement	8
XV.	Duplication of Federal Programs	8
XVI.	Earmark Identification	8
XVII.	Applicability to the Legislative Branch	8
XVIII.	Statement on Preemption of State, Local, or Tribal Law	8
XIX.	Changes in Existing Law Made by the Bill, As Reported	9
XX.	Proceedings of Full Committee Markup	10

29–006

I. AMENDMENT

The amendment is as follows:

Strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "NOAA Weather Radio Modernization Act of 2021" or "NWR Modernization Act of 2021".

SEC. 2. DEFINITIONS.

(a) ADMINISTRATOR.—The term "Administrator" means the Under Secretary of Commerce for Oceans and Atmosphere and Administrator of the National Oceanic and Atmospheric Administration.

(b) NOAA WEATHER RADIO.—The term "NOAA Weather Radio" means the National Oceanic and Atmospheric Administration Weather Radio All Hazards network.

SEC. 3. FINDINGS.

Congress finds the following:

(1) The NOAA Weather Radio is a nationwide network of transmitters that are critical to protecting life and property by broadcasting weather and other hazard alerts.

(2) NOAA Weather Radio broadcasts currently reach 95 percent of the United States population.

(3) NOAA Weather Radio broadcasts originate from all National Weather Service Offices, but are only available via a receiver located in sufficient proximity to a radio transmitting tower.

(4) There are limited options to obtain NOAA Weather Radio broadcasts via the Internet or mobile device application, which are provided by volunteer mechanisms obtaining the audio feed in an ad hoc manner.

(5) NOAA Weather Radio should provide equal access and availability to unimpeded broadcasts of weather and non-weather hazards to every person located within the United States, its territories, and tribal lands.

SEC. 4. UPGRADING EXISTING SYSTEMS.

(a) IN GENERAL.—The Administrator shall, to the maximum extent practicable, expand coverage of the NOAA Weather Radio and ensure its reliability. In doing so, the Administrator shall—

(1) maintain support for existing systems serving areas not covered by or having poor quality cellular service;

(2) ensure consistent maintenance and operations monitoring, with timely repairs to broadcast transmitter site equipment and antennas; and

(3) enhance the ability to amplify Non-Weather Emergency Messages via NOAA Weather Radio as necessary.

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $20,000,000 to remain available until expended.

(c) EXPANDING ACCESS.—As part of the activities in this section, the Administrator shall acquire additional transmitters as required to expand coverage to rural and underserved communities, national parks, and recreation areas.

SEC. 5. MODERNIZATION INITIATIVE.

(a) IN GENERAL.—In parallel to the activities under section 4, the Administrator shall, to the maximum extent practicable, enhance NOAA Weather Radio to ensure its capabilities and coverage remain valuable to the public. In carrying out these activities, the Administrator shall—

(1) upgrade the telecommunications infrastructure to accelerate the transition of broadcasts to Internet Protocol-based communications over non-copper media;

(2) accelerate software upgrades to the Advanced Weather Interactive Processing System, or the relevant system successors, in order to implement partial county notifications and alerts;

(3) consult with relevant stakeholders, including the private sector, to enhance accessibility and usability of NOAA Weather Radio data and feeds;

(4) develop options, including, but not limited to, satellite backup capability and commercial provider partnerships for NOAA Weather Radio continuity in the event of Weather Forecast Office outages;

(5) research and develop alternative options, including, but not limited to, microwave capabilities, to transmit NOAA Weather Radio signals to transmitters that are remote or do not have IP capability; and

(6) transition critical applications to the Integrated Dissemination Program, or the relevant program successors.

(b) PRIORITY.—In carrying out the objectives described in subsection (a), the Administrator shall prioritize practices, capabilities, and technologies recommended by the assessment in subsection (c), to maximize accessibility, particularly in remote and underserved areas of the country.

(c) ASSESSMENT FOR MANAGEMENT AND DISTRIBUTION.—Not later than 12 months after the date of enactment of this Act, the Administrator shall complete an assessment of access to NOAA Weather Radio. In conducting such an assessment, the Administrator shall take into consideration and provide recommendations on—

(1) the need for continuous, adequate, and operational real-time broadcasts of the NOAA Weather Radio in both urban and rural areas;

(2) solicited inputs from relevant stakeholders on the compatibility of NOAA Weather Radio data for third party platforms that provide online services, such as websites and mobile device applications, or deliver NOAA Weather Radio access;

(3) existing or new management systems, which promote consistent, efficient, and compatible access to NOAA Weather Radio;

(4) the ability of NOAA to aggregate real time broadcast feeds at one or more central locations;

(5) effective interagency coordination;

(6) the potential effects of an electromagnetic pulse or geomagnetic disturbance on NOAA Weather Radio; and

(7) any other function the Administrator deems necessary.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $40,000,000 to remain available until expended.

II. PURPOSE OF THE BILL

The purpose of H.R. 5324 is to expand coverage and increase reliability of the NOAA Weather Radio (NWR) by upgrading technologies and increasing the number of transmitters leading to modernization of the NOAA Weather Radio for the 21st Century.

III. BACKGROUND AND NEED FOR THE LEGISLATION

The National Oceanic and Atmospheric Administration (NOAA)'s National Weather Service (NWS) provides weather, water, and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy. Forecasters at Weather Forecasts Offices (WFOs) utilize the Advanced Weather Interactive Processing System (AWIPS) to create and distribute NWS weather warnings. When NWS disseminates warnings, they are sent out among several outlets and services—the Wireless Emergency Alerts (WEA) and NWR being two of the most effective and efficient methods.

Wireless Emergency Alerts are originated via the National Weather Service Telecommunication Gateway (NWSTG) and then sent to the Integrated Public Alert & Warning System (IPAWS). Once the alert reaches the IPAWS the alerts are then "pushed out" to commercial wireless carriers who broadcast the alert from cell towers in the threat area, straight to individuals' cellular devices. However, there is not complete commercial coverage from cellular towers and not every individual possesses a cellular device.

NWR provides coverage for the majority of the nation including the portions not covered by WEA. NWR consists of a nationwide network of over 1000 radio stations covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and U.S. Pacific Territories. NWR provides NWS official warnings, watches, forecasts, and other hazard information 24 hours a day, 7 days a week making it the comprehensive source for weather and emergency information to over 95% of the population. NWR provides services where cellular coverage is limited, when cellular broadcast

towers are out of commission, and when internet is unavailable. However, due to NWR transmitter sustainability there is a need for improving and modernizing NWR.

Operations and maintenance as well as tower transmitter leases are increasingly expensive as transmitters age. Furthermore, as populations shift it becomes difficult to ensure sufficient transmitters in the correct locations in addition to shifting consistent maintenance and timely repairs to those transmitters. There is also the need to transition from obsolete copper technology to Internet Protocol (IP)—or wireless based technologies. Transitioning to a modernized NWR will allow for greater precision with warnings and alerts. Implementing partial county alerting rather than broad warnings will reduce over-warning of areas which can lead to the warned individuals becoming complacent. Finally, modernizing NWR will provide the ability to enhance non-weather emergency messages via NWR at the request of authorized officials.

IV. COMMITTEE HEARINGS

Pursuant to House Rule XIII, clause 3(c)(6), the Committee designates the following hearings as having been used to develop or consider the legislation:

On September 23, 2021, the Subcommittee on the Environment held a hearing titled "Advancing Earth System Science and Stewardship at NOAA." Representative Bice and Representative Sherrill both discussed the NWR Modernization Act, which would expand and modernize a key tool in providing warnings on impending weather emergencies.

The following witness testified at the September 23, 2021 hearing:

- The Honorable Richard W. Spinrad, Ph.D., Under Secretary of Commerce for Oceans and Atmosphere, and Administrator, National Oceanic and Atmospheric Administration

On October 14, 2021 the Committee on Science, Space, and Technology held a hearing titled "The Future of Forecasting: Building a Weather-Ready Nation on All Fronts." Representative Bice discussed the NWR Modernization Act during her five minutes of questioning to the witnesses.

The following witnesses testified at the October 14, 2021 hearing:

- Dr. Louis Uccellini, Assistant Administrator for Weather Services and Director of the National Weather Service, National Oceanic and Atmospheric Administration
- Mr. Cardell Johnson, Acting Director, Natural Resources and Environment, U.S. Government Accountability Office
- Mr. John Werner, President, National Weather Service Employees Organization
- Mr. Erik Salna, Associate Director for Education and Outreach, International Hurricane Research Center, Extreme Events Institute, Florida International University

V. COMMITTEE CONSIDERATION AND VOTES

On Wednesday, September 22nd, 2021 H.R. 5324 the *NWR Modernization Act of 2021* was introduced in the House of Representatives by Representative Bice on September 22, 2021 with Representative Mikie Sherrill as the original co-sponsor, and is also co-

sponsored by Representatives Kilmer, LaTurner, Bonamici, and Ellzey.

The *NWR Modernization Act of 2021* was considered in a Full Committee Markup on Tuesday, November 16th, 2021. There were two amendments to the original bill text.

First, Ms. Bice of Oklahoma offered an Amendment in the Nature of a Substitute that made minor changes to reflect bipartisan agreement on language to clarify the intent of the bill. The second and final amendment was offered by Mr. Posey of Florida. The amendment would ensure existing NWR capabilities and coverage by providing commercial partnerships as an option for satellite backup capability. Additionally, it would require an assessment on the potential effects of an electromagnetic pulse or geomagnetic disturbance. The Posey amendment was *passed by voice vote.* The ANS, as amended, was also *passed by voice vote.* H.R 5324 the *NWR Modernization Act of 2021* was *favorably reported, as amended, by voice vote.*

VI. SUMMARY OF MAJOR PROVISIONS OF THE BILL

H.R. 5324 would require upgrades to existing systems to expand the coverage of NOAA Weather Radio and ensure reliability as well as increase reach to rural and underserved communities. It directs the NOAA Administrator to ensure existing NWR capabilities and coverage by upgrading telecommunication infrastructure, accelerating software upgrades, accessibility to stakeholders, and developing backup capabilities. The bill also requires the NOAA Administrator to conduct an assessment that provides recommendations on improving access to NWR. The bill also authorizes appropriations of $60,000,000 to remain available until expended to carry out the activities of the bill.

VII. SECTION-BY-SECTION ANALYSIS (BY TITLE AND SECTION)

Section 4. Upgrading existing systems

This section directs the NOAA Administrator to expand coverage of NWR and ensure its reliability through system support, maintenance, and acquisition of additional transmitters to reach rural and underserved communities. Additionally, this section authorizes $20 million in appropriations to carry out the activities of this section.

Section 5. Modernization initiative

This section directs the NOAA Administrator to undertake activities in parallel to those in Section 4 to ensure existing NWR capabilities and coverage remain valuable to the public, including upgrading the telecommunications infrastructure, accelerating software upgrades, ensuring accessibility of the data to stakeholders, developing backup capabilities, and more. Additionally, the Administrator is required to conduct an assessment that would provide recommendations on improving access to NWR, with input from relevant stakeholders, and those recommendations prioritized in carrying out activities to maximize accessibility. This section authorizes appropriations of $40 million to carry out this section.

VIII. COMMITTEE VIEWS

The Committee notes the importance of NWR to the protection of life and property of individuals in the United States and its Territories. NWR has provided continuous warnings, watches, forecasts, and additional hazard information for decades and is essential resource for the public, especially Americans who are often unable to access advanced products via internet communication or cellular devices. Modernization efforts for NWR authorized in this bill will help bring NWR into the 21st century and support reliable broadcasts of weather and non-weather hazards to Americans across the United States and its territories. Additional Committee views are incorporated throughout the report.

IX. COST ESTIMATE

Pursuant to clause 3(c)(2) of rule XIII of the Rules of the House of Representatives, the Committee adopts as its own the estimate of new budget authority, entitlement authority, or tax expenditures or revenues contained in the cost estimate prepared by the Director of the Congressional Budget Office pursuant to section 402 of the Congressional Budget Act of 1974.

X. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 5, 2022.

Hon. EDDIE BERNICE JOHNSON,
Chairwoman, Committee on Science, Space, and Technology,
House of Representatives, Washington, DC.

DEAR MADAM CHAIRWOMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 5324, the NWR Modernization Act of 2021.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Robert Reese.

Sincerely,

PHILLIP L. SWAGEL,
Director.

Enclosure.

H.R. 5324, NWR Modernization Act of 2021

As ordered reported by the House Committee on Science, Space, and Technology on November 16, 2021

By Fiscal Year, Millions of Dollars	2022	2022-2026	2022-2031
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	0	52	60

		Mandate Effects	
Statutory pay-as-you-go procedures apply?	No		
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

Under current law, the National Oceanic and Atmospheric Administration (NOAA) operates a nationwide network of radio stations that broadcast continuous weather information, called NOAA Weather Radio (NWR). Those radio stations also broadcast warning and post-event information for all types of hazards including earthquakes, avalanches, chemical releases, oil spills, AMBER alerts, and 911 outages.

H.R. 5324 would authorize the appropriation of $20 million to expand NWR coverage to underserved areas through the acquisition and installation of additional transmission infrastructure. The bill also would authorize the appropriation of $40 million for NOAA to modernize the NWR by upgrading its legacy technology to Internet Protocol-based services, accelerating software upgrades, assessing and enhancing the access to and use of transmissions from NWR, among other things.

Recently, NOAA has begun to integrate some of the modernizations that would be required under H.R. 5324 in its current operations. For example, NOAA has begun transitioning to Internet Protocol-based services. In 2021, NOAA allocated $10 million to all NWR operation and improvement activities.

For this estimate, CBO assumes that H.R. 5324 will be enacted near the end of fiscal year 2022 and that the authorized amounts will be appropriated in 2023. Using historical spending patterns for similar activities, CBO estimates that implementing H.R. 5324 would cost $52 million over the 2022–2026 period and $8 million after 2026, assuming appropriation of the authorized amounts.

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 H.R. 5324

	By fiscal year, millions of dollars—					
	2022	2023	2024	2025	2026	2022–2026
Expand NWR Coverage:						
Authorization	0	20	0	0	0	20
Estimated Outlays	0	3	7	5	3	18
Modernize NWR Infrastructure:						
Authorization	0	40	0	0	0	40

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER H.R. 5324—Continued

	By fiscal year, millions of dollars—					
	2022	2023	2024	2025	2026	2022–2026
Estimated Outlays	0	2	8	16	8	34
Total Changes:						
Authorization	0	60	0	0	0	60
Estimated Outlays	0	5	15	21	11	52

NWR = National Oceanic and Atmospheric Administration Weather Radio.

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

XI. FEDERAL MANDATES STATEMENT

H.R. 5324 contains no unfunded mandates.

XII. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

The Committee's oversight findings and recommendations are reflected in the body of this report.

XIII. STATEMENT ON GENERAL PERFORMANCE GOALS AND OBJECTIVES

The goals and objectives of H.R. 5324 are to modernize the NWR to provide expanded coverage and increase reliability of the NWR by upgrading technologies and increasing the number of transmitters leading to modernization of NWR for the 21st Century.

XIV. FEDERAL ADVISORY COMMITTEE STATEMENT

H.R. 5324 does not create any advisory committees.

XV. DUPLICATION OF FEDERAL PROGRAMS

Pursuant to clause 3(c)(5) of rule XIII of the Rules of the House of Representatives, the Committee finds that no provision of H.R. 5324 establishes or reauthorizes a program of the federal government known to be duplicative of another federal program, including any program that was included in a report to Congress pursuant to section 21 of Public Law 111–139 or the most recent Catalog of Federal Domestic Assistance.

XVI. EARMARK IDENTIFICATION

Pursuant to clause 9(e), 9(f), and 9(g) of rule XXI, the Committee finds that H.R. 5324 contains no earmarks, limited tax benefits, or limited tariff benefits.

XVII. APPLICABILITY TO THE LEGISLATIVE BRANCH

The Committee finds that H.R. 5324 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

XVIII. STATEMENT ON PREEMPTION OF STATE, LOCAL, OR TRIBAL LAW

This bill is not intended to preempt any state, local, or tribal law.

XIX. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

This legislation does not amend any existing Federal statute.

XX. Proceedings of the Full Committee Markup

MARKUPS: H.R. 5781, THE NATIONAL WILDLAND FIRE RISK REDUCTION PROGRAM ACT; H.R. 1437, THE PROVIDING RESEARCH AND ESTIMATES OF CHANGES IN PRECIPITATION (PRECIP) ACT; H.R. 5324, THE NOAA WEATHER RADIO MODERNIZATION ACT OF 2021

MARKUP

BEFORE THE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

OF THE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

NOVEMBER 16, 2021

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C O N T E N T S

Tuesday, November 16, 2021

	Page
H.R. 5781—the *National Wildland Fire Risk Reduction Program Act*	6
H.R. 1437—the *Providing Research and Estimates of Changes in Precipitation (PRECIP) Act*	181
H.R. 5324—the *NWR Modernization Act of 2021*	207

Appendix: Additional Material for the Record

Markup Results	232
Endorsements for H.R. 5781, the *National Wildland Fire Risk Reduction Program Act*	236
Endorsements for H.R. 1437, the *Providing Research and Estimates of Changes in Precipitation (PRECIP) Act*	249

H.R. 5781, THE NATIONAL WILDLAND FIRE RISK REDUCTION ACT

Amendment number	Sponsor	Title	Page number
1	Ms. Lofgren	Amendment in the Nature of a Substitute	46
2	Mr. Obernolte	Ensures that the new National Wildland Fire Risk Reduction Program considers and informs land management services.	86
3	Mr. Perlmutter	Amends the strategic plan to include a description of opportunities for multi-hazard approaches to building design.	89
4	Mr. Casten	Assessing the need for a National Academies of Science to identify research areas for further study.	92
5	Ranking Member Lucas	Establish an advisory committee of non-government stakeholders for the inter-agency coordinating committee established in this act.	96
6	Mr.Bera	Improves R&D of firefighting decontamination methods and peer-support resources for wildland fire fighters.	101
7	Ms. Kim	Directs NIST to conduct research on wildland fire communications.	105
8	Mr. Perlmutter	Ensures federal agencies are coordinating on fire weather alerts and warnings.	109
9	Ms. Kim	Directs the NWS to develop a roadmap for overcoming IMET staffing challenges.	111
10	Mr. Obernolte	Ensures Collaboration between Wildland Fire Incident Research Database and the National Interagency Fire Center.	114
11	Mr. Garcia	Strikes Sec. 6 (c)(4) and replaces it with Rep. Garcia's bipartisan FIRE Act.	116
12	Mr. Babin	Provides data buy authority for the NOAA	122
13	Mr. LaTurner	Authorize NOAA to support research for prescribed fires and establish one or more national centers on prescribed fires.	129
14	Mr. Weber	DOE Wildfire Utility Coordination	132
15	Mr. Bera	Adds wildfire impacts on drinking water and freshwater ecosystems to EPA R&D activities in the bill.	137

H.R. 5781, THE NATIONAL WILDLAND FIRE RISK REDUCTION ACT—Continued

Amendment number	Sponsor	Title	Page number
16	Mr. Garcia	Strikes parts of Sec. 6 (g) to clarify that DOE's goal should be to reduce the need for emergency power shutoffs.	139
17	Mr. Feenstra	Utilizing biomass produced by wildland fire risk mitigation and recovery for bioenergy, including biofuels.	143
18	Mr. Perlmutter	Adds a section to DOE's activities that includes fire modeling, forecasting spread, and ecosystem impacts.	146
19	Mr. Babin	Calls for a National Academy of Public Administration report on the Civil Applications Committee and the USGS National Civil Applications Program to evaluate its current mission, authorities, policies, and responsibilities.	148
20	Mr. Babin	Provides data buy authority for the Department of Interior under the LANDSAT program that was established by the Committee in the Land Remote Sensing Policy Act of 1992.	153
21	Mr. Babin	Codifies the Civil Applications Committee and the National Civil Applications Program Charter in statute.	158
22	Mr. Garcia	Inserts a new section with the text of Mr. Garcia's Protect Act, H.R. 4516.	171
23	Mr. Perlmutter	Expands the ability for agencies to purchase and utilize commercial data sources under the bill.	178

H.R. 1437, THE PROVIDING RESEARCH AND ESTIMATES OF CHANGES IN PRECIPITATION (PRECIP) ACT

Amendment number	Sponsor	Title	Page number
1	Ms. Sherrill	Amendment in the Nature of a Substitute	195

H.R. 5324, THE NOAA WEATHER RADIO MODERNIZATION ACT OF 2021

Amendment number	Sponsor	Title	Page number
1	Ms. Bice	Amendment in the Nature of a Substitute	216
2	Mr. Posey	Ensure existing NOAA Weather Radio capabilities and coverage by providing commercial partnerships as an option for satellite backup capability. Require an assessment on the potential effects of an electromagnetic pulse or geomagnetic disturbance.	223

H.R. 5781, THE NATIONAL WILDLAND FIRE RISK REDUCTION PROGRAM ACT

H.R. 1437, THE PROVIDING RESEARCH AND ESTIMATES OF CHANGES IN PRECIPITATION (PRECIP) ACT

H.R. 5324, THE NOAA WEATHER RADIO MODERNIZATION ACT OF 2021

TUESDAY, NOVEMBER 16, 2021

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Committee met, pursuant to notice, at 10:12 a.m., in room 2318 of the Rayburn House Office Building and via Zoom, Hon. Eddie Bernice Johnson [Chairman of the Subcommittee] presiding.

Chairwoman JOHNSON. And good morning to all. The Committee will come to order, and, without objection, the Chair is authorized to declare recess at any time. Pursuant to *Committee Rule 2E* and *House Rule 11,* the Chair announces that she may postpone roll call votes. Today the Committee is meeting virtually. I want to announce a couple of reminders for the Members about the conduct of this meeting. First, Members should keep their video feed on as long as they are present in the meeting. Members are responsible for their own microphones. Please also keep your microphones muted until you are speaking. Finally, if Members have documents they wish to submit to the record, please e-mail them to the Committee Clerk, whose e-mail address was circulated prior to the meeting.

Pursuant to notice, the Committee meets to consider the following measures. H.R. 5781, the *National Wildland Fire Risk Reduction Program Act,* H.R. 1437, the *Providing Research and Estimates of Changes in Precipitation*, as the *PRECIP Act*, and H.R. 5324, the *NOAA Weather Radio Modernization Act of 2021.*

Let me welcome everyone to today's markup of these bills that address critical issues facing our Nation. First we will consider H.R. 5781, the *National Wildland Fire Risk Reduction Program Act.* I want to thank Representative Lofgren for introducing this common-sense bill, and I also want to thank our colleagues, Representative Bonamici, Mr. McNerney, and Mr. Perlmutter, for join-

ing Representative Lofgren in introducing this bill. This bill builds on the strength of our Federal science agencies to better address the growing threat of wildland fires across our country.

Our cutting-edge Federal research and operational programs provide crucial support to the first responders. These first responders are on the front lines, battling the intense wildland fires in what has become a seemingly year-round fire season. H.R. 5781 will strengthen Federal coordination of research and operational efforts across multiple science agencies. The legislation will support a more efficient and effective whole-of-government response to reducing wildland fire risk through Federal coordination and collaboration. This is a good bill, and I am proud to co-sponsor it.

Next we will consider bipartisan legislation introduced by the Environmental Subcommittee Chair, Ms. Sherrill, H.R. 1437, the *PRECIP Act.* I'm proud to co-sponsor this bill, along with Full Committee Ranking Member Lucas, and Environmental Subcommittee Ranking Member Bice. I appreciate Chairwoman Sherrill's leadership on this Committee on issues related to heavy precipitation and flooding. These types of extreme weather events are becoming more intense due to climate change and impacting communities across the country. We saw the effects in Texas during Hurricane Harvey in 2017. And, unfortunately, we saw the deadly effects of heavy precipitation earlier this year due to Hurricane Ida. Despite making landfall on the Gulf Coast, Ida dumped water all the way up to New York City, and left a path of devastation in its wake. NOAA (National Oceanic and Atmospheric Administration) has a responsibility to provide the most accurate and up to date precipitation data. The updates that are authorized in this bill will be critical to preparing our cities and our communities for future extreme weather.

Last, we will consider another bipartisan bill led by the Environmental Subcommittee Ranking Member Bice, and co-sponsored by Chairwoman Sherrill. The *NOAA Weather Radio Modernization Act* would help to upgrade and modernize NOAA Weather Radio (NWR). NOAA Weather Radio provides critical weather information 24 hours a day, 7 days a week. Additionally, NOAA Weather Radio supports the broadcasting of public safety alerts, and warnings for other natural hazards. This bill would provide authorization to update, modernize, and in some cases expand the current NOAA Weather Radio program. This modernization will improve NOAA's current broadcast delivery, and help this critical program better reach underserved communities.

I want to thank the Members for their interest in these bills, and I look forward to a productive markup.

[The prepared statement of Chairwoman Johnson follows:]

I want to welcome everyone this morning to our markup of three bills that address critical issues facing our nation.

First, we will consider H.R. 5781, the *National Wildland Fire Risk Reduction Program Act.* I want to thank Representative Lofgren for introducing this commonsense bill. I also want to thank our colleagues Representatives Bonamici, McNerney, and Perlmutter for joining Representative Lofgren in introducing this bill. This bill builds on the strength of our federal science agencies to better address the growing threat of wildland fires across our country. Our cutting-edge federal research and operational programs provide crucial support to first-responders. These first-responders are on the frontlines battling the intense wildland fires in what has become a seemingly year-round fire season.

H.R. 5781 will strengthen federal coordination of research and operational efforts across multiple science agencies. The legislation will support a more efficient and effective whole-of-government response to reducing wildland fire risk through federal coordination and collaboration. This is a good bill, and I am proud to co-sponsor it.

Next, we will consider bipartisan legislation introduced by Environment Subcommittee Chairwoman Sherrill. H.R. 1437, the *PRECIP (pre-SIP) Act.* I am proud to co-sponsor this bill, along with Full Committee Ranking Member Lucas, and Environment Subcommittee Ranking Member Bice. I appreciate Chairwoman Sherrill's leadership on this Committee on issues related to heavy precipitation and flooding. These types of extreme weather events are becoming more intense due to climate change and impacting communities across the country. We saw the effects in Texas during Hurricane Harvey in 2017. And unfortunately, we saw the deadly effects of heavy precipitation earlier this year due to Hurricane Ida. Despite making landfall on the Gulf Coast, Ida dumped water all the way up to New York City and left a path of devastation in its wake. NOAA has a responsibility to provide the most accurate and up-to date precipitation data. The updates that are authorized in this bill will be critical to preparing our cities and communities for future extreme weather.

Last, we will consider another bipartisan bill led by our Environment Subcommittee Ranking Member Bice and cosponsored by Chairwoman Sherrill. The *NOAA Weather Radio Modernization Act* would help to upgrade and modernize NOAA Weather Radio. NOAA Weather Radio provides critical weather information 24 hours a day, 7 days a week. Additionally, NOAA Weather Radio supports the broadcasting of public safety alerts and warnings for other natural hazards. This bill would provide authorization to update, modernize, and in some cases, expand the current NOAA Weather Radio Program. This modernization will improve NOAA's current broadcast delivery and help this critical program better reach underserved communities.

I want to thank Members for their interest in these bills, and I look forward to a productive markup.

Chairwoman JOHNSON. I now recognize our Ranking Member, Mr. Lucas, for opening remarks.

Mr. LUCAS. Thank you, Chairwoman Johnson. This morning we're considering three bills, and I wish I could say that all of the bills under consideration were bipartisan, but unfortunately I cannot. Over the last 3 years we've worked together on the Science Committee to produce thoughtful, consensus legislation to advance the competitiveness of the United States, and to address national goals. We'd been deliberate and collaborative in drafting our legislation.

Since I became a Ranking Member, I've made a—it a priority to return this Committee to an atmosphere of mutual respect where we can work together to achieve our shared goals. My friend, Chairwoman Johnson, has been a tremendous partner in this effort, and I think our results speak for themselves. We passed dozens of bipartisan bills on research and development (R&D), conservation, STEM education, advanced technologies. Last year we passed the first comprehensive update of our energy policy in more than a decade. This year we developed landmark R&D bills to double our basic research investments at NSF (National Science Foundation), DOE (Department of Energy), and NIST (National Institute of Standards and Technology).

This kind of valuable legislation doesn't always make the most headlines, but it makes a real difference. We're able to do this because we don't operate like other Committees. And while we may not be able to reconcile our differences on every bill that we consider, we aren't trying to score political points against each other. Two of the three bills on the agenda today are truly bipartisan Committee products that have been through our usual collaborative process, with Committee staff working across the aisle, and along-

side all Members of this Committee to develop good proposals. The *PRECIP Act* and the *NOAA Weather Radio Modernization Act* are thoughtful bills, which have been informed by stakeholder feedback, and involve extensive discussions and negotiations between our staff. I'll discuss those bills more when they're brought up for consideration.

Unfortunately, the *National Wildland Fire Risk Reduction Program Act* has not been through that process. Wildfires are a critical issue in the West and Midwest. Members on both sides of the aisle want to be—to do productive work to mitigate their damage, so this could've been a productive and bipartisan bill. Instead, the bill was developed behind closed doors, with little input from Republicans on the Committee. The behind the scenes partisanship on this bill was unnecessary, unprecedented, and counterproductive to a healthy legislative environment at this Committee. Instead of working together, Republican staff weren't given the bill draft text until just days before it was introduced. We were given little opportunity to provide input, or improve ahead of the time.

So that's why we'll be offering a number of amendments today. The process didn't have to be this way. Wildfires know no political boundaries. I can't think of a more pressing issue for Members in the West. I would've thought an issue that—like this could rise above politics. It would be addressing preventing and reducing wildfires, saving lives and property. For instance, California Representative Mike Garcia has been a leader on this issue on our Committee, a Member with a district deeply impacted by wildland fires, and a prime example of the urban/wildland interface. He introduced a bipartisan bill in August, the *Fire Information and Reaction Enhancement Act,* or the *FIRE Act.* His legislation improves NOAA's wildfire forecasting capacities, and was developed with input from NOAA, and the support of numerous stakeholders. It has bipartisan support, and a number of Democrats have co-sponsored it. It's unfortunate that this bill could not have been incorporated into legislation today, but the gentleman will offer an amendment to do so later in the markup.

Now, I understand that this bipartisanship—partisanship, I should say, is typical for some Committees in Congress, but I believe the Science Committee can, and should, be better than that. Members like serving on the Science Committee because we're the fun Committee, tackling the problems of the future. Let's not lose sight of our Committee's mission to harness innovation to improve the lives of all Americans.

So, that all being said, today's markup is going to take a little longer than it should have. We have a number of Members offering thoughtful, productive amendments to try and improve the underlying legislation. We'll get through today's markup, and then I look forward, hopefully, on moving ahead for the rest of the Congress together to advance science and technology. And with that, Madam Chair, I yield back the balance of my time.

[The prepared statement of Mr. Lucas follows:]

Thank you, Chairwoman Johnson. This morning we are considering 3 bills. I wish I could say that all of the bills under consideration are bipartisan, but unfortunately, I cannot.

Over the last three years, we have worked together on the Science Committee to produce thoughtful, consensus legislation to advance the competitiveness of the

United States and address national challenges. We have been deliberative and collaborative in drafting our legislation.

Since I became Ranking Member, I've made it a priority to return this Committee to an atmosphere of mutual respect where we can work together to achieve our shared goals. My friend Chairwoman Johnson has been a tremendous partner in that effort, and I think our results speak for themselves.

We've passed dozens of bipartisan bills on research and development, conservation, STEM education, and advanced technologies. Last year we passed the first comprehensive update of our energy policy in more than a decade. This year we developed landmark R&D bills to double our basic research investments at NSF, DOE, and NIST.

This kind of valuable legislation doesn't always make the most headlines, but it does make a real difference. We're able to do this because we don't operate like other Committees. And while we may not be able to reconcile our differences on every bill we consider, we aren't trying to score political points against each other.

Two of the three bills on the agenda today are truly bipartisan committee products that have been through our usual collaborative process, with committee staff working across the aisle and alongside all Members of this Committee to develop good proposals. The *PRECIP Act* and the *NOAA Weather Radio Modernization Act* are thoughtful bills, which have been informed by stakeholder feedback and involved extensive discussions and negotiations between our staff. I will discuss these bills more when brought up for consideration.

Unfortunately, the *National Wildland Fire Risk Reduction Program Act* has not been through that process. Wildfires are a critical issue in the West and Midwest. Members on both sides of the aisle want to do productive work to mitigate their damage. So this could have been a productive and bipartisan bill.

Instead, the bill was developed behind closed doors by the Democrats with little to no input from Republicans on the committee. The behind-the-scenes partisanship on this bill was unnecessary, unprecedented and counterproductive to a healthy legislative environment at this committee.

Instead of working together, Republican staff weren't given the draft bill text until just days before it was introduced. We were given little opportunity to provide input or improvements ahead of time. So that's why we'll be offering a number of amendments today.

The process didn't have to be this way. Wildfires know no political boundaries. I can't think of a more pressing issue for our Members in the West. I would have thought if any issue could rise above politics, it would be addressing preventing and reducing wildfires and saving lives and property. For instance, California Representative Mike Garcia has been a leader on this issue on our Committee. A Member with a district deeply impacted by wildland fires and a prime example of the urban-wildland interface, he introduced a bipartisan bill in August: the *"Fire Information and Reaction Enhancement Act"* or the *"FIRE Act."*

His legislation improves NOAA's wildfire forecasting capabilities, and was developed with input from NOAA, and with the support of numerous stakeholders. It has strong bipartisan support and a number of Democrats have cosponsored it. It's unfortunate that his bill could not have been incorporated into this legislation today. But the gentleman will offer an amendment to do so later in the markup.

I understand that this partisanship is typical for some Committees in Congress, but I believe the Science Committee can and should be better than that Members like serving on the Science Committee because we're the "fun committee", tackling the problems of the future. Let's not lose sight of our Committee's mission to harness innovation to improve the lives of all Americans.

So that all being said, today's markup is going to take a little longer than it should have. We have a number of members offering thoughtful, productive amendments, to try and improve the underlying legislation. We'll get through today's markup, and then I look forward to hopefully moving ahead for the rest of the Congress together to advance science and technology.

Thank you, I yield back Madam Chair.

We now will consider H.R. 5324, the *NOAA Weather Radio Modernization Act of 2021.* The Clerk will report the bill.

The CLERK. H.R. 5324, a bill to provide guidance for and investment in the upgrade and modernization of the National Oceanic and——

[The bill follows:]

I

117TH CONGRESS
1ST SESSION

H. R. 5324

To provide guidance for and investment in the upgrade and modernization of the National Oceanic and Atmospheric Administration Weather Radio All Hazards network, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 22, 2021

Mrs. BICE of Oklahoma (for herself and Ms. SHERRILL) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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A BILL

To provide guidance for and investment in the upgrade and modernization of the National Oceanic and Atmospheric Administration Weather Radio All Hazards network, 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 "NOAA Weather Radio Modernization Act of 2021" or the "NWR Modernization Act of 2021".

SEC. 2. DEFINITIONS.

In this Act:

1 (1) ADMINISTRATOR.—The term "Adminis-
2 trator" means the Administrator of the National
3 Oceanic and Atmospheric Administration.
4 (2) NOAA WEATHER RADIO.—The term
5 "NOAA Weather Radio" means the National Oce-
6 anic and Atmospheric Administration Weather Radio
7 All Hazards network.

8 **SEC. 3. FINDINGS.**

9 Congress finds the following:
10 (1) The NOAA Weather Radio is a nationwide
11 network of transmitters that are critical to pro-
12 tecting life and property by broadcasting weather
13 and other hazard alerts.
14 (2) NOAA Weather Radio broadcasts currently
15 reach 95 percent of the United States population.
16 (3) NOAA Weather Radio broadcasts originate
17 from all National Weather Service Offices, but are
18 only available via a receiver located in sufficient
19 proximity to a radio transmitting tower.
20 (4) There are limited options to obtain NOAA
21 Weather Radio broadcasts via the Internet or mobile
22 device application, which are provided by volunteer
23 mechanisms obtaining the audio feed in an ad hoc
24 manner.

1 (5) NOAA Weather Radio should provide equal
2 access and availability to unimpeded broadcasts of
3 weather and non-weather hazards to every person lo-
4 cated within the United States, its territories, and
5 tribal lands.

6 **SEC. 4. UPGRADING EXISTING SYSTEMS.**

7 (a) IN GENERAL.—The Administrator shall, to the
8 maximum extent practicable, expand coverage of the
9 NOAA Weather Radio and ensure its reliability. In doing
10 so, the Administrator shall—

11 (1) maintain support for existing systems serv-
12 ing areas not covered by cellular service or having
13 poor quality cellular service;

14 (2) ensure consistent maintenance of, and time-
15 ly repairs to, broadcast towers and antennas; and

16 (3) enhance the ability to amplify Non-Weather
17 Emergency Messages via NOAA Weather Radio as
18 necessary.

19 (b) AUTHORIZATION OF APPROPRIATIONS.—There is
20 authorized to be appropriated to carry out this section
21 $20,000,000, to remain available until expended.

22 **SEC. 5. MODERNIZATION INITIATIVE.**

23 (a) IN GENERAL.—In parallel to the activities under
24 section 4, the Administrator shall, to the maximum extent
25 practicable, provide upgrades to the NOAA Weather Radio

1 to ensure its capabilities and coverage remain valuable to
2 the public. In carrying out these activities, the Adminis-
3 trator shall—

4 (1) provide upgrades to the telecommunications
5 infrastructure to accelerate the transition of broad-
6 casts to Internet Protocol-based communications
7 over non-copper media;

8 (2) accelerate software upgrades to the Ad-
9 vanced Weather Interactive Processing System in
10 order to implement partial county notifications and
11 alerts;

12 (3) consult with private sector entities to ensure
13 that NOAA Weather Radio data and feeds are easily
14 accessible in a format and manner most beneficial
15 for use by third-party products;

16 (4) develop options, including satellite backup
17 capability, for NOAA Weather Radio continuity in
18 the event of Weather Forecast Office outages;

19 (5) research and develop alternative options, in-
20 cluding microwave capabilities, to transmit NOAA
21 Weather Radio signals to transmitters that are re-
22 mote or that do not have Internet Protocol capa-
23 bility; and

24 (6) transition critical applications to the Inte-
25 grated Dissemination Program.

1 (b) PRIORITY.—In carrying out the objectives de-
2 scribed in subsection (a), the Administrator shall prioritize
3 practices, capabilities, and technologies most capable of
4 making real-time warning information and broadcasts
5 available online.

6 (c) ASSESSMENT FOR MANAGEMENT AND DISTRIBU-
7 TION.—Not later than 12 months after the date of enact-
8 ment of this Act, the Administrator shall complete an as-
9 sessment of access to NOAA Weather Radio. In con-
10 ducting such an assessment, the Administrator shall take
11 into consideration and provide recommendations on—

12 (1) the need for continuous, adequate, and
13 operational real-time broadcasts of the NOAA
14 Weather Radio in both urban and rural areas;

15 (2) the availability of online services, such as
16 websites and mobile device applications, that require
17 NOAA Weather Radio access;

18 (3) existing or new management systems, which
19 promote consistent, efficient, and compatible access
20 to NOAA Weather Radio;

21 (4) the ability of the National Oceanic and At-
22 mospheric Administration to aggregate real time
23 broadcast feeds at one or more central locations;

24 (5) effective interagency coordination; and

1 (6) any other function the Administrator deems
2 necessary.
3 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
4 authorized to be appropriated to carry out this section
5 $40,000,000, to remain available until expended.

○

Chairwoman JOHNSON. Without objection, the bill is considered as read, and open to amendment at any point. Does anyone wish to be recognized to speak on the underlying bill?

Mrs. BICE. Madam Chairwoman, I do.

Chairwoman JOHNSON. Mrs.——

VOICE. Bice.

Chairwoman JOHNSON [continuing]. Bice is recognized.

Mrs. BICE. Thank you, Chairwoman Johnson, and thank you to my colleague on the Environment Subcommittee, Chairwoman Sherrill, for co-sponsoring this bill with me. The NOAA Weather Radio All Hazards, known as NWR, is a highly successful nationwide network of stations that broadcast natural, environmental, and public safety alerts. Simply put, NWR is the single source for comprehensive weather and emergency information. That's because it consists of more than 1,000 stations broadcasting 24 hours a day, seven days a week, to 95 percent of the population. Like many of my constituents in Oklahoma, I have a receiver in my home, and I can tell you, it's nearly impossible to sleep through it, or ignore its loud alerts, especially during tornado season in Oklahoma.

The devices themselves are inexpensive, around $20 in their most basic form, and can operate where cell coverage is limited, or completely lost, which is likely in the midst of any major disaster. But they have limitations. Receivers must be within 40 miles of a transmitter, and terrain or building interference can reduce that radius. Additionally, the NWR network last received upgrades to its capabilities in the late 1990's. Since that time, operations and maintenance costs have increased, and technology has greatly advanced.

As the world becomes more digitized, we must ensure that the protection of life and property doesn't get lost in the shuffle. That is why I introduced this legislation. The NWR is consistent and trusted as a result of saving numerous lives, but it needs to be upgraded and modernized to remain effective for the future. My bill, H.R. 5324, authorizes upgrades to the existing system through timely repairs to broadcast transmitter sites and antennas. This will ensure that reliable systems in place are not abandoned, and outages become less common.

This legislation also enables a modernization initiative for broadcasts to transmit to IP (Internet Protocol)-based communications, and develop options for backup capabilities to enhance signal transmission. This paves the way for the future, and provides failsafe options so that NWR is never down for an extended period of time. Last, but not least, my bill requires NOAA to—NWR access. These will ensure that these modernization efforts are successful, and that people across the country have easy, reliable access in a manner that is in line with modern technology. While covering 95 percent of the population is great, we should always strive for 100 percent equal access. The three main tenets of my bill put us on the path to achieving that very goal.

The benefits of NWR are numerous. The signal can be easily reached—can easily reach and educate vulnerable communities. It can cover both land and marine warnings, and when a disaster is over, NWR can issue an all clear for a community that might be battered, but whose people are safe. I want to again thank Chair-

woman Sherrill for co-sponsoring this bill, working in a bipartisan manner to perfect it, and helping bring this valuable service into the 21st century. I urge all of my colleagues to support this legislation, and I reserve the balance of my time. I yield back, Madam Chair.

Chairwoman JOHNSON. Thank you. Ms. Sherrill is recognized.

Ms. SHERRILL. Madam Chair, I move to strike the last word.

Chairwoman JOHNSON. You're recognized——

Ms. SHERRILL. I——

Chairwoman JOHNSON [continuing]. For five minutes.

Ms. SHERRILL. Thank you. I'm pleased that we're also advancing the *NOAA Weather Radio Modernization Act* today. I was happy to work on a bipartisan basis with Ranking Member Bice on this important legislation, and on the amendment in the nature of a substitute. NOAA Weather Radio provides continuous coverage of weather information and broadcasts National Weather Service warnings, watches, and forecasts. NOAA Weather Radio also broadcasts warning and coast event information for other hazards, like national disasters, environmental hazards, or public safety alerts.

This bill will expand coverage of NOAA Weather Radio by directing the NOAA Administrator to acquire additional transmitters to ensure that underserved communities are within range. It also directs NOAA to update related telecommunications infrastructure and software so that Americans across the country, no matter their circumstances, can be prepared for severe weather events, and authorizes funding to support these activities.

Ensuring our communities have the best information possible about impending storms before, during, and after they hit is critical to making sure that they have what they need to make it through safely. Thank you so much, thank you to Ranking Member Bice, and I yield back.

Chairwoman JOHNSON. Thank you very much. Mr. Lucas is recognized.

Mr. LUCAS. Thank you, Chairwoman Johnson. I also want to thank the Ranking Member of the Environmental Subcommittee, and my esteemed colleague from Oklahoma, Representative Bice, for introducing this legislation. Just last month Oklahoma broke its previous record for the number of tornadoes in a single month, with 28 confirmed touchdowns. We had more tornadoes than the rest of the year combined. But there's a bright side to this story. There were zero deaths resulting from these storms. This is due in large part to the prediction capacities and advanced warning systems we have in place. The NOAA Weather Radio is one of the most prominent among them.

It is undeniable that NWR saves lives. Day or night, power or no power, in a rural area or in the heart of a city, NWR device will loudly alert you and your family if severe weather is on its way. Oklahomans have grown up listening to these announcements. We take them seriously, and we act on them. That saves lives. But some areas, especially those with extreme terrain, or densely packed buildings, do not have the same widespread access to NOAA's Weather Radio because of interference. Our ultimate goal should be for all U.S. citizens to have unimpeded access to the life-

saving alerts this system provides. That's why I am fully supportive of Representative Bice's legislation to expand and modernize the NOAA Weather Radio.

In addition to access needs, aging infrastructure has led to increased maintenance costs and more weather radio outages. The copper wiring that connects broadcast transmitters to weather service stations is becoming obsolete and expensive, and more powerful storms require backup options and stronger signals in case of extensive damage to mission critical facilities. This bill addresses all of those concerns, and sets up the NWR to be just as useful in the 21st century as it has been since 1975, when it was designated the sole government provider of direct warning to private homes.

I want to again thank the leadership of the Environmental Subcommittee Ranking Member Bice, and Chairwoman Sherrill, for leading on this critical issue. I urge my colleagues to support this bill, and I yield back the balance of my time, Madam Chair.

Chairwoman JOHNSON. Thank you very much. We now will proceed with the amendments in the order of the roster.

Mrs. BICE. Madam Chair, I have an amendment at the desk.

Chairwoman JOHNSON. The first amendment on the roster is an amendment offered by the gentlelady from Oklahoma, Mrs. Bice, and you are now recognized to offer your amendment.

Mrs. BICE. Thank you, Chairwoman Johnson. This amendment in the nature of a substitute makes minor changes——

Chairwoman JOHNSON. The Clerk—report the amendment.

The CLERK. Amendment Number One, amendment in the nature of a substitute to H.R. 5324, offered by Mrs. Bice.

[The amendment of Mrs. Bice follows:]

AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 5324

OFFERED BY M__. _____

Strike all after the enacting clause and insert the following:

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the "NOAA Weather Radio
3 Modernization Act of 2021" or "NWR Modernization Act
4 of 2021".

5 **SEC. 2. DEFINITIONS.**

6 (a) ADMINISTRATOR.—The term "Administrator"
7 means the Under Secretary of Commerce for Oceans and
8 Atmosphere and Administrator of the National Oceanic
9 and Atmospheric Administration.

10 (b) NOAA WEATHER RADIO.—The term "NOAA
11 Weather Radio" means the National Oceanic and Atmos-
12 pheric Administration Weather Radio All Hazards net-
13 work.

14 **SEC. 3. FINDINGS.**

15 Congress finds the following:

16 (1) The NOAA Weather Radio is a nationwide
17 network of transmitters that are critical to pro-

1 tecting life and property by broadcasting weather
2 and other hazard alerts.
3 (2) NOAA Weather Radio broadcasts currently
4 reach 95 percent of the United States population.
5 (3) NOAA Weather Radio broadcasts originate
6 from all National Weather Service Offices, but are
7 only available via a receiver located in sufficient
8 proximity to a radio transmitting tower.
9 (4) There are limited options to obtain NOAA
10 Weather Radio broadcasts via the Internet or mobile
11 device application, which are provided by volunteer
12 mechanisms obtaining the audio feed in an ad hoc
13 manner.
14 (5) NOAA Weather Radio should provide equal
15 access and availability to unimpeded broadcasts of
16 weather and non-weather hazards to every person lo-
17 cated within the United States, its territories, and
18 tribal lands.

19 **SEC. 4. UPGRADING EXISTING SYSTEMS.**

20 (a) IN GENERAL.—The Administrator shall, to the
21 maximum extent practicable, expand coverage of the
22 NOAA Weather Radio and ensure its reliability. In doing
23 so, the Administrator shall—

1 (1) maintain support for existing systems serv-
2 ing areas not covered by or having poor quality cel-
3 lular service;
4 (2) ensure consistent maintenance and oper-
5 ations monitoring, with timely repairs to broadcast
6 transmitter site equipment and antennas; and
7 (3) enhance the ability to amplify Non-Weather
8 Emergency Messages via NOAA Weather Radio as
9 necessary.
10 (b) AUTHORIZATION OF APPROPRIATIONS.—There is
11 authorized to be appropriated to carry out this section
12 $20,000,000 to remain available until expended.
13 (c) EXPANDING ACCESS.—As part of the activities in
14 this section, the Administrator shall acquire additional
15 transmitters as required to expand coverage to rural and
16 underserved communities, national parks, and recreation
17 areas.
18 **SEC. 5. MODERNIZATION INITIATIVE.**
19 (a) IN GENERAL.—In parallel to the activities under
20 section 4, the Administrator shall, to the maximum extent
21 practicable, enhance NOAA Weather Radio to ensure its
22 capabilities and coverage remain valuable to the public. In
23 carrying out these activities, the Administrator shall—
24 (1) upgrade the telecommunications infrastruc-
25 ture to accelerate the transition of broadcasts to

1 Internet Protocol-based communications over non-
2 copper media;
3 (2) accelerate software upgrades to the Ad-
4 vanced Weather Interactive Processing System, or
5 the relevant system successors, in order to imple-
6 ment partial county notifications and alerts;
7 (3) consult with relevant stakeholders, including
8 the private sector, to enhance accessibility and
9 usability of NOAA Weather Radio data and feeds;
10 (4) develop options, including, but not limited
11 to, satellite backup capability, for NOAA Weather
12 Radio continuity in the event of Weather Forecast
13 Office outages;
14 (5) research and develop alternative options, in-
15 cluding, but not limited to, microwave capabilities, to
16 transmit NOAA Weather Radio signals to transmit-
17 ters that are remote or do not have IP capability;
18 and
19 (6) transition critical applications to the Inte-
20 grated Dissemination Program, or the relevant pro-
21 gram successors.
22 (b) PRIORITY.—In carrying out the objectives de-
23 scribed in subsection (a), the Administrator shall prioritize
24 practices, capabilities, and technologies recommended by
25 the assessment in subsection (c), to maximize accessibility,

1 particularly in remote and underserved areas of the coun-
2 try.

3 (c) ASSESSMENT FOR MANAGEMENT AND DISTRIBU-
4 TION.—Not later than 12 months after the date of enact-
5 ment of this Act, the Administrator shall complete an as-
6 sessment of access to NOAA Weather Radio. In con-
7 ducting such an assessment, the Administrator shall take
8 into consideration and provide recommendations on—

9 (1) the need for continuous, adequate, and
10 operational real-time broadcasts of the NOAA
11 Weather Radio in both urban and rural areas;

12 (2) solicited inputs from relevant stakeholders
13 on the compatibility of NOAA Weather Radio data
14 for third party platforms that provide online serv-
15 ices, such as websites and mobile device applications,
16 or deliver NOAA Weather Radio access;

17 (3) existing or new management systems, which
18 promote consistent, efficient, and compatible access
19 to NOAA Weather Radio;

20 (4) the ability of NOAA to aggregate real time
21 broadcast feeds at one or more central locations;

22 (5) effective interagency coordination; and

23 (6) any other function the Administrator deems
24 necessary.

1 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
2 authorized to be appropriated to carry out this section
3 $40,000,000 to remain available until expended.

Chairwoman JOHNSON [continuing]. Consent to dispense with the reading. Without objection, so ordered. I now recognize the gentlelady for five minutes to explain her amendment.

Mrs. BICE. Thank you, Chairwoman Johnson. This amendment in the nature of a substitute makes minor changes based on feedback from NOAA and the NWR Program. One change I am particularly happy to see is the addition of language tasking the NOAA Administrator with acquiring additional broadcast transmitters. This is focused on reaching that last 5 percent of the U.S. population that is currently outside of the NWR coverage. This is largely extreme rural land and land adjacent to national parks or recreation areas, but the addition also includes underserved communities that might lack a single transmitter in the area. Based on our conversations with NOAA, this is a welcome addition, and makes this the most effective legislation possible.

I want to again highlight to bipartisan process that led to this being—bill being marked up today, and thank Chairwoman Sherrill and Committee Staff for their willingness to negotiate the language. I urge all of my colleagues to support this amendment and the underlying bill, and I reserve the balance of my time. I yield back.

Chairwoman JOHNSON. Thank you. Any further discussion on the amendment? If there are no additional comments, we will move to the next amendment, and vote on the substitute later.

The next amendment on the roster is an amendment offered by the gentleman from Florida, Mr. Posey. Mr. Posey, you're recognized to offer your amendment.

Mr. POSEY. Thank you, Madam Chair. I have an amendment at the desk.

Chairwoman JOHNSON. The Clerk will report the amendment.

The CLERK. Amendment Number Two, amendment to the amendment in the nature of a substitute to H.R. 5324, offered by Mr. Posey——

[The amendment of Mr. Posey follows:]

AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 5324 OFFERED BY MR. POSEY OF FLORIDA

Page 4, line 11 after "capability" insert "and commercial provider partnerships".

Page 5, line 22, strike "and".

Page 5, after line 22, insert the following:

1 (6) the potential effects of an electromagnetic
2 pulse or geomagnetic disturbance on NOAA Weather
3 Radio; and

Page 5, line 23, strike "(6)" and insert "(7)".

Chairwoman JOHNSON [continuing]. Unanimous consent to dispense with the reading. Without objection, so ordered. I recognize the gentleman for 5 minutes to explain his amendment.

Mr. POSEY. Thank you, Chairwoman Johnson. This amendment amends two parts of the bill. The first part will make sure NOAA includes commercial partners when they develop options concerning satellite backup capability for NOAA Weather Radio. This will help ensure a continuity of the radio service during extreme weather events. The second part addresses the electromagnetic pulse, or geomagnetic disturbance concerns. It will require an assessment, and provide recommendations on the potential effects of an electromagnetic pulse or a geomagnetic disturbance from the NOAA Weather Radio. I urge my colleagues to support this amendment, and yield back the balance of my time.

Chairwoman JOHNSON. Thank you very much. Any further discussion on the amendment? If there's no further discussion, the vote occurs on the amendment. All those in favor say aye. Those opposed say no. The ayes have it, and the amendment is agreed to.

We will now vote on the amendment in the nature of a substitute, as amended. The vote occurs on the amendment. All those in favor say aye. Those opposed say no. The ayes have it, and the amendment is agreed to.

A reporting quorum being present, I move that the Committee on Science, Space, and Technology report H.R. 5324, as amended, to the House, with the recommendation that the bill be approved. Those in favor of the motion will signify by saying aye. Those opposed say no. Was that——

VOICE. It's fine.

Chairwoman JOHNSON. The bill is favorably reported. Without objection, the motion to reconsider is laid upon the table, and I ask unanimous consent that staff be authorized to make any necessary technical and conforming changes to the bill. Without objection, so ordered. Members will have two subsequent calendar days in which to submit supplementary—supplemental, minority, or additional views on the measure.

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