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National Alerts: A Primer and Selected Issues for Congress

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National Alerts: A Primer and Selected Issues for Congress

SUMMARY

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Sending emergency alerts before and during a regional or nationwide emergency to warn people of impending or ongoing danger could encourage them to take protective action that may save lives. The President has authority, including through Section 706 of the Communications Act, as amended, to communicate with the public during wartime or other national emergencies, to consider communications essential to national defense and security, and to direct communications to serve such interests. Alerts sent by the President, the Federal Emergency Management Agency (FEMA) Administrator, or the President's designees, referred to as "national alerts," would receive preference or priority when being disseminated.

If the President were to direct that a national alert be sent before or during a regional or national emergency, FEMA would originate the message and send it through broadcast- and internet-based distribution systems. These two distribution systems use different pathways to alert the public. The broadcast-based system would send alerts using primary entry point (PEP) stations—private or commercial radio broadcast stations—that connect directly to FEMA operations centers and would work with FEMA to send national alerts to the public. The internet-based system would use the Integrated Public Alert and Warning System (IPAWS), a FEMA-operated internet protocol (IP)-based system that acts as a gateway between the public officials authorized to send emergency alerts ("alerting authorities") and communications pathways (e.g., radio broadcasting and cellular networks). The Communications Act of 1934 grants the Federal Communications Commission (FCC) general rulemaking authority to carry out its regulatory responsibilities, which has over time been interpreted to include emergency alerting.

As technology and perceptions of emergency alerting have evolved, the FCC has promulgated rules that modernize national alerts; for example, in 2021, the FCC renamed "presidential alerts" to "national alerts." FEMA manages the nationwide activation, tests, and exercises of national alerts and confirms the proper functioning of the dissemination pathways. Although a national alert has never been sent outside of testing scenarios, maintaining an up-to-date alerting system that could be used in a regional or nationwide disaster contributes to a resilient public safety and national security infrastructure. Parts of the emergency alerting infrastructure discussed in this report are used to disseminate state and local alerts. Legislation has been introduced in the 119th Congress related to how emergency alerts, including national alerts, may be distributed. For example, the AM Radio for Every Vehicle Act of 2025 (e.g., H.R. 979, S. 315) would require that vehicles manufactured in the United States have AM radio, which would enhance the redundancy and resiliency of emergency alerting infrastructure by ensuring broadcasted alerts could reach the public if wireless and internet-based alerting systems are down. The Weather Alert Response and Notification (WARN) Act (H.R. 1076) would require the Comptroller General to conduct a study on the effectiveness of using social media to disseminate nationwide alerts.

In addition to these pending pieces of legislation, Congress may consider addressing potential security and public awareness concerns. For example, past incidents whereby bad actors accessed and compromised state and local alerting systems have prompted some stakeholders to express concern over the security of emergency alerting mobile applications. Further, survey-based experiments assessing the public's perception of emergency alerts indicate that people may express a lack of trust and understanding in emergency alerts and that people's perceptions of the alert's credibility may affect the likelihood that they would take protective action during an emergency. Congress may also consider the current criteria outlining when a national alert may be sent. Section 706 of the Communications Act of 1934, as amended, authorizes the President to issue alerts "at and for such times as he may determine." Given the breadth of this authority and the lack of past precedent, it remains unclear what specific circumstances may prompt a national alert. Congress might weigh whether the criteria for issuing national alerts have sufficiently broad scope for addressing potential emergency communication goals and consider whether the criteria should stay the same or be broadened or narrowed.

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Introduction

During events such as natural disasters, terrorist attacks, and other regional or nationwide emergencies, the President, the Federal Emergency Management Agency (FEMA) Administrator, or the President's designees could initiate *national alerts* to warn people of existing and impending danger. When disseminated quickly, efficiently, and effectively in appropriate circumstances, emergency alerts may save lives by increasing the likelihood that people take protective action.[1]

This report focuses on the President's authority to send national alerts (formerly known as presidential alerts), which could be issued in regional or nationwide emergencies, and provides an overview of the communications systems and pathways through which national alerts could be disseminated.[2] While a national alert has never been issued outside of testing, this report discusses selected issues for congressional consideration for doing so, including security concerns, potential ways to improve public trust about alerts, and the broad statutory authority vested in the President to originate and issue national alerts.

National alerts could be transmitted through two different systems. The broadcast-based distribution method leverages alerting infrastructure used in the Emergency Alert System (EAS). The internet-based distribution method employs the Integrated Public Alert and Warning System (IPAWS), an internet protocol (IP)-based system managed by FEMA. State and local authorities may use all or part of the emergency communications infrastructure discussed in this report to disseminate local and/or statewide emergency alerts. This report does not discuss such alerting protocols and associated issues. For additional background on emergency alerting, see CRS Report R48363, *The Integrated Public Alert and Warning System (IPAWS): Primer and Issues for Congress*, by Amanda H. Peskin, and CRS In Focus IF12998, *The Emergency Alert System: Status of Current Funding for Improvements*, by Amanda H. Peskin.

This report does not cover other federal alerting systems, such as the U.S. Geological Survey's ShakeAlerts, the National Oceanic and Atmospheric Administration's (NOAA's) Tsunami Warning System, or NOAA's National Weather Radio (NWR); state and local alerting systems (e.g., local siren systems, county alerting systems); or other commercial-off-the-shelf alerting systems (e.g., employer systems, university systems).

History of National Alerting

National alerting authorities have evolved over time, from exclusively presidential wartime powers to joint powers involving multiple federal agencies with specific roles relating to national emergency alerting more broadly.

The President's authority to issue alerts to the public stems from Section 706 of the Communications Act of 1934, as amended (codified at 47 U.S.C. §606), which provides for the President's communication powers during wartime or other national emergencies.[3] Through

[1] Abdul-Akeem Sadiq et al., "Public Alert and Warning System Literature Review in the USA: Identifying Research Gaps and Lessons for Practice," *Natural Hazards*, vol. 117 (April 2023), pp. 1711-1744, https://doi.org/10.1007/s11069-023-05926-x (hereinafter Sadiq et al., "Public Alert and Warning System Literature Review in the USA").

[2] Prior to a Federal Communications Commission (FCC) rule in 2021, national alerts were referred to as "presidential alerts." FCC, *Third Report and Order: In the Matter of Review of the Emergency Alert System*, February 2, 2011, p. 2, https://docs.fcc.gov/public/attachments/FCC-11-12A1.pdf.

[3] 47 U.S.C. §606.

Section 606(c), the President may suspend or amend rules and regulations applicable to any or all transmitters or devices capable of emitting electromagnetic radiation "upon proclamation by the President that there exists war or a threat of war, or a state of public peril or disaster or other national emergency, or in order to preserve the neutrality of the United States."[4] Under Section 606(a) of Title 47, the President is authorized to direct that communications considered essential to the national defense and security receive preference or priority in their dissemination by any carrier via radio transmissions.[5]

Before 1951, there was no way for the U.S. government to communicate directly with the public during emergencies.[6] For example, during the attack on Pearl Harbor on December 7, 1941, a local radio station in Honolulu called a station in New York, which then broadcast the call to the nation.[7] On December 10, 1951, President Harry S. Truman signed Executive Order (E.O.) 10312, allowing the President to terminate government and nongovernment radio transmissions that foreign adversaries could use to identify areas for a potential attack, through the program Control of Electromagnetic Radiation (CONELRAD). E.O. 10312 also authorized federal agencies, including the Federal Communications Commission (FCC), to issue rules and regulations to implement this program.[8] CONELRAD allowed the President to designate specific frequencies for AM radio stations to operate in, preventing enemies from using broadcast transmissions of other stations to guide targeted attacks.[9] Under CONELRAD, defense agencies would first telephone notifications to key radio stations, which would then notify four relay stations to stop transmitting; these relay stations would notify four more stations and so on until all were informed. The key stations could broadcast the emergency message intermittently to prevent enemy airplanes from homing in on a signal.[10] Throughout the 1950s, the time between the issuance of a CONELRAD message and the initial receiving stations to pass on the defense message and get all stations off the air was about 20 minutes,[11] whereas emergency alerts could now be sent in a matter of seconds.[12]

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[4] 47 U.S.C. §606(c).

[5] 47 U.S.C. §606(c). A carrier is a person or entity "engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or interstate or foreign radio transmission of energy," and radio broadcasters are not considered to be carriers. 47 U.S.C. §153(11).

[6] During World War II, President Truman refrained from operating a federal civil defense organization—which would have handled emergency alerting—as he "concluded that civil defense was basically a State and local responsibility." B. Wayne Blanchard, *American Civil Defense 1945-1984: The Evolution of Programs and Policies*, 1985, p. 2, https://www.civildefensemuseum.com/docs/AmericanCivilDefense1945-1984.pdf.

[7] "'This Is No Joke: This Is War': A Live Radio Broadcast of the Attack on Pearl Harbor," History Matters: The U.S. Survey Course on the Web, https://historymatters.gmu.edu/d/5167.

[8] Executive Order (E.O.) 10312 of December 10, 1951, "Providing for Emergency Control over Certain Government and Non-Government Stations Engaged in Radio Communication or Radio Transmission of Energy," 16 *Federal Register* 12452, December 12, 1951, https://archives.federalregister.gov/issue_slice/1951/12/12/12449-12496.pdf#page=4.

[9] FCC, *Notice of Proposed Rulemaking: In the Matter of Review of the Emergency Alert System*, August 4, 2004, https://transition.fcc.gov/eb/Orders/2004/FCC-04-189A1.html.

[10] Susan L. Brinson, "CONELRAD on the Front Line of Cold War Defense," *Media, War & Conflict*, vol. 2, no. 3 (December 2009), p. 344 (hereinafter Brinson, "CONELRAD on the Front Line of Cold War Defense").

[11] Many stations could not afford to update the technology needed to decrease the lag time, as improvements were costly without federal assistance. Brinson, "CONELRAD on the Front Line of Cold War Defense," p. 347.

[12] The Emergency Alert System (EAS) is a public warning system commonly used by state and local authorities; it can also be used to disseminate national alerts. The Integrated Public Alert and Warning System (IPAWS) is an internet-protocol-based network acting as a gateway between official entities needing to communicate an emergency alert and relevant public audiences. EAS participants—radio and television broadcasters, cable systems, satellite radio and television providers, and wire line video providers—must wait to send an alert in legacy format at least 10 seconds after (continued...)

Since President Truman's 1951 E.O. on emergency communications, subsequent Presidents have refined their authority to issue national alerts. On February 26, 1963, through E.O. 11092, "Assigning Emergency Preparedness Functions to the Federal Communications Commission," the Kennedy Administration created the Emergency Broadcast System (EBS), which replaced CONELRAD and transitioned the use of emergency alerting from a wartime tool to an emergency preparedness tool. E.O. 11092 required the FCC to develop plans and procedures for the activation or deactivation of radio and satellite broadcasting facilities and services; the authorization, operation, and use of safety and special radio services and facilities; and the assignment of radio frequencies in an emergency. The EBS required AM radio stations to transmit emergency alerts using their assigned frequencies.[13] The E.O. also directed the FCC to develop emergency preparedness programs implemented by and "covering provisions of service by common carriers, broadcasting facilities, and the safety and special radio services."[14]

In 1976, the FCC, the National Weather Service (NWS), the Defense Civil Preparedness Agency,[15] and the National Industry Advisory Committee[16] signed a memorandum of understanding (MOU) that defined a framework for interagency cooperation to develop and evaluate effective EBS plans and state and local operational capabilities.[17] The MOU also supported the implementation of a two-tone EBS signal for state and local emergencies, helping modernize the EBS. In 1982, the parties updated the MOU to reflect the establishment of FEMA per President Carter's executive branch reorganization plan, giving FEMA the authority to maintain and operate the United States' alerting systems.[18]

receiving it, unless they confirm in the IPAWS feed that the matching Common Alerting Protocol (CAP)—an international standard used to format digital alerts—version of the message exists. FCC, *Report and Order: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, September 29, 2022, p. 5, https://docs.fcc.gov/public/attachments/FCC-22-75A1.pdf.

[13] E.O. 11092 of February 26, 1963, "Assigning Emergency Preparedness Functions to the Federal Communications Commission," 28 *Federal Register* 1847, February 28, 1963, https://archives.federalregister.gov/issue_slice/1963/2/28/1842-1849.pdf#page=6 (hereinafter E.O. 11092, "Assigning Emergency Preparedness Functions to the Federal Communications Commission").

[14] E.O. 11092, "Assigning Emergency Preparedness Functions to the Federal Communications Commission." According to the FCC, President Kennedy directed the agency to oversee "the development, structure, and administration of national, state and local plans relating to the Emergency Broadcast System (EBS)." FCC, *Notice of Proposed Rulemaking: In the Matters of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System and Wireless Emergency Alerts*, January 28, 2016, p. 7, https://docs.fcc.gov/public/attachments/FCC-16-5A1.pdf.

[15] The Defense Civil Preparedness Agency was a part of the Department of Defense that was abolished on July 20, 1979, pursuant to E.O. 12148 of July 20, 1979, "Federal Emergency Management," 44 *Federal Register* 43239, July 24, 1979, https://archives.federalregister.gov/issue_slice/1979/7/24/43239-43248.pdf.

[16] The National Industry Advisory Committee was established by the FCC in 1963 to advise on emergency alerting and assist in preparing plans for the continuity of broadcasting during a national emergency. See FCC, Department of Defense (Office of Civil Defense), and Office of Emergency Planning, "Annex XIV," in *Emergency Broadcast System Plan*, January 6, 1964, p. XIV-3, https://www.worldradiohistory.com/Archive-Catalogs/Miscellaneous-Manufacturers/EBS-Manual-1964.pdf.

[17] "State and Local Emergency Broadcasting System (EBS) Memorandum of Understanding Among Federal Emergency Management Agency, Federal Communications Commission, the National Oceanic and Atmospheric Administration, and the National Industry Advisory Committee," April 21, 1982 (hereinafter Memorandum of Understanding on State and Local Emergency Broadcasting System, April 21, 1982). Provided to CRS by the FCC on October 23, 2024.

[18] FCC, *Report and Order and Further Notice of Proposed Rulemaking: Amendment of Part 73, Subpart G, of the Commission's Rules Regarding the Emergency Broadcast System*, December 9, 1994; Memorandum of Understanding on State and Local Emergency Broadcasting System, April 21, 1982; and Reorganization Plan No. 3 of 1978, 43 *Federal Register* 41943, 92 Stat. 3788, https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title5a-
(continued...)

In 1994, the FCC promulgated a rule that replaced the EBS with the EAS. In doing so, the FCC required broadcast stations and cable systems to install and operate new equipment to be used for national alerts. The new EAS included mandatory codes and protocol to construct messages, mandated new equipment compatible with AM and FM radio and cable TV, and shortened the length of the two-tone EBS warning.[19]

Systems to Disseminate National Alerts

The President, the FEMA Administrator, or the President's designees could send national alerts through the emergency alerting communications infrastructure.[20] Before or during a regional or national emergency, the President, the FEMA Administrator, or the President's designees could decide whether to issue a national alert.[21] If they directed that a national alert be sent, FEMA could act as the origination source and send the message through both the broadcast-based and internet-based alert distribution methods. Each system would distribute national alerts simultaneously using a different communications path to create redundancy. **Figure 1** illustrates the two pathways to send national alerts.

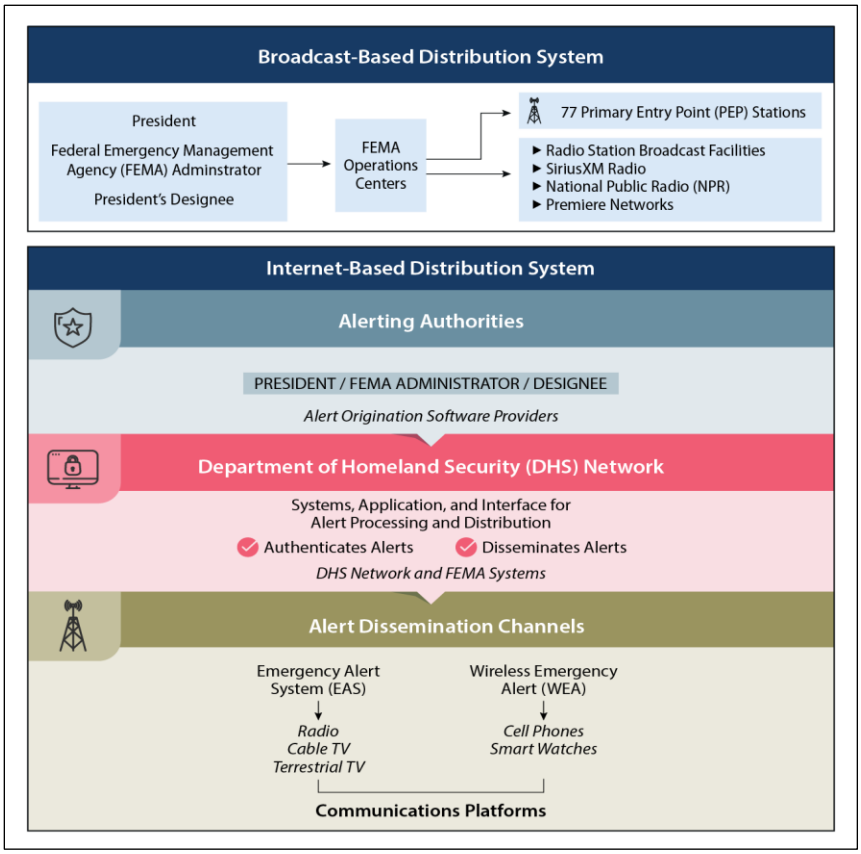
node35-leaf138&num=0&edition=prelim (in which President Carter created the Federal Emergency Management Agency [FEMA] and transferred to it all powers related to the EBS).

[19] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Amendment of Part 73, Subpart G, of the Commission's Rules Regarding the Emergency Broadcast System*, November 10, 1994, p. 1813, 1815, 1819, https://docs.fcc.gov/public/attachments/FCC-94-288A1.pdf.

[20] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, June 17, 2021, p. 6, https://docs.fcc.gov/public/attachments/FCC-21-77A1.pdf.

[21] FCC, *Report and Order and Further Notice of Proposed Rulemaking: Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, June 17, 2021, p. 6, https://docs.fcc.gov/public/attachments/FCC-21-77A1.pdf (hereinafter FCC, *Report and Order and Further Notice of Proposed Rulemaking: Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, June 17, 2021).

Figure 1. Overview of the National Alert Process



Source: CRS, adapted from a figure provided by FEMA.

Notes: The Integrated Public Alert and Warning System Open Platform for Emergency Networks (IPAWS-OPEN) is a component within IPAWS that receives and authenticates alerts from authorized sources and then routes the alerts to communications pathways.

Broadcast-Based Distribution System

To disseminate a broadcast-based national alert, the President, the FEMA Administrator, or the President's designees, through FEMA, would issue a "national emergency message" via the EAS. The EAS is a national public warning system that requires participants, including radio and TV broadcasters, cable TV, wireless cable systems, and satellite providers, to provide the President with the capability of addressing the American public during a national emergency—within 10 minutes of notification.[22] If the President were to direct FEMA to send a national alert, the agency would transmit the national emergency message through the EAS using a preestablished hierarchy of broadcast, cable, and satellite systems, starting with delivery to 77 National Public Warning System (NPWS) stations. NPWS stations, commonly referred to as "primary entry point (PEP) stations," are private or commercial radio broadcast stations that FEMA has designated to serve as primary broadcast sources for national alerts. Because of the critical role that PEP stations would play in distributing national alerts, FEMA connects directly to each station via a secure telephone (wire line) connection and maintains supplementary communications equipment

[22] FEMA, "Emergency Alert System," October 30, 2023, https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/emergency-alert-system.

and power generators at these stations that are intended to ensure resiliency during and after national disasters.[23]

Upon receiving notification from FEMA, the PEP stations would broadcast the message throughout their listening areas.[24] Together, the existing 77 FEMA-designated PEP stations would directly reach over 90% of the U.S. population.[25]

The emergency message broadcast by the PEP stations would be received and subsequently retransmitted by EAS participants using what is often referred to as a "daisy-chain" method of distribution.[26] In the daisy-chain sequence, local primary stations—select EAS participants, radio and TV broadcasters, cable systems, wire line video providers, and radio and TV satellite providers who send EAS messages and monitor PEP stations—would then broadcast the alert to EAS participants in their listening areas, who would then transmit the alert to the public. EAS participant radio stations are required to disseminate national alerts.

Internet-Based Distribution System

The President, the FEMA Administrator, or the President's designees could also send national alerts through an internet-based distribution system—IPAWS. IPAWS is an IP-based system managed by FEMA. IPAWS has the capacity to connect the President, the FEMA Administrator, or the President's designees with the communications pathways (e.g., radio broadcasting, cellular networks, and NOAA weather radio) that could deliver those alerts to the affected public audience.[27] The President, the FEMA Administrator, or the President's designees would send the national alert to the Integrated Public Alert and Warning System Open Platform for Emergency Networks (IPAWS-OPEN), which would receive and authenticate messages and then distribute them simultaneously across different communications pathways, such as radio and TV broadcasting and satellite networks (via EAS) and cell phone networks (via the Wireless Emergency Alert [WEA] system); see **Figure 1**.

EAS participants are required to monitor the IPAWS-OPEN feed so that after a national alert is sent to IPAWS-OPEN, devices at EAS participant stations could immediately download and insert the message into their programming.

Wireless Emergency Alerts

The President, the FEMA Administrator, or the President's designees could use IPAWS to send emergency alerts to wireless service provider networks for distribution to individual cell phones. This communication pathway is called the WEA system.[28] The Warning, Alert, and Response

[23] FCC, *Report: October 4, 2023 Nationwide Emergency Alert Test*, June 2024, p. 29, https://docs.fcc.gov/public/attachments/DOC-403500A1.pdf (hereinafter FCC, *Report: October 4, 2023 Nationwide Emergency Alert Test*); and 47 C.F.R. §11.18(a).

[24] Audio messages disseminated to and from primary entry point (PEP) stations may be of an unlimited length. In contrast, alerts sent through IPAWS must follow the CAP format, which creates a two-minute limit on EAS audio messages and 360-character limit on text alerts. EAS CAP Industry Group (ECIG), *ECIG Recommendations for a CAP EAS Implementation Guide*, p. 15, 17, http://www.eas-cap.org/ECIG-CAP-to-EAS_Implementation_Guide-V1-0.pdf.

[25] PEP stations include Sirius XM, the National Public Radio content distribution network, and Premiere Networks content distribution network. Based on CRS discussions with FEMA's Congressional Affairs Division, April 5, 2025.

[26] FCC, *Report: October 4, 2023 Nationwide Emergency Alert Test*, p. 8.

[27] CRS Report R48363, *The Integrated Public Alert and Warning System (IPAWS): Primer and Issues for Congress*, by Amanda H. Peskin.

[28] Through the Wireless Emergency Alert (WEA) system, members of the public can receive geographically targeted (continued...)

Network Act (WARN Act; P.L. 109-347), signed into law on October 13, 2006, expanded the country's emergency alerting infrastructure to wireless devices through commercial mobile service (CMS) providers who voluntarily transmit alerts to their cell phone users. Under the WARN Act, Congress required the FCC to promulgate rules of technical standards, protocols, and procedures for mobile service providers who elect to participate. Users of these participating mobile services are allowed to opt out of alerts other than those issued by the President.[29]

The WEA system uses cell towers to broadcast alerts to any WEA-enabled mobile device in an entire impacted region. If a national alert were sent through WEA, FEMA would transmit the WEA message—using the designated handling code to distinguish the alert from other classes of WEA messages—through IPAWS for distribution to CMS providers, who would then disseminate the national alert to their subscribers.[30] If a CMS provider sends the alert, its network system should generate the header and menu text "national alert"[31] and transmit the alert immediately upon receipt, preempting other alerting messages.[32]

Table 1 summarizes some key differences between the broadcast- and internet-based distribution systems for national alerts.

Table 1. Comparison Between Broadcast- and Internet-Based Distribution Systems for National Alerts

Category of Comparison	Broadcast Based	Internet Based
Initiator and originator	The President, the Federal Emergency Management Agency (FEMA) Administrator, or the President's designees would initiate the alert and tell FEMA to originate the alert.	The President, the FEMA Administrator, or the President's designees would initiate the alert and tell FEMA to originate the alert.
Pathway for sending alert	Alerts would be sent through the National Public Warning System (NPWS) primary entry point (PEP) stations.	Alerts would be sent through the Integrated Public Alert and Warning System (IPAWS).
Priority and preemption	National alerts would take priority over other messages.	Emergency Alert System (EAS) participant stations would immediately download and insert the message into their programming.
Voluntary nature of alert	EAS participants must send alerts.	EAS participants must send alerts.
Message format	Message may be of unlimited length.	Message must comply with the Common Alerting Protocol (CAP) format.

messages warning them of nearby or imminent threats. The four classes of alert messages are national alerts, imminent threat alerts, America's Missing: Broadcast Emergency Response (AMBER) Alerts, and public safety messages. FCC, "Wireless Emergency Alerts," https://www.fcc.gov/public-safety-and-homeland-security/policy-and-licensing-division/alerting/general/wireless; 47 C.F.R. §10.4.

[29] WARN Act §602(b)(E).

[30] FCC, *Notice of Proposed Rulemaking and Notice of Inquiry: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, March 17, 2021, p. 8, https://docs.fcc.gov/public/attachments/FCC-21-36A1.pdf.

[31] 47 C.F.R. §10.11(b).

[32] 47 C.F.R. §10.41.

Source: CRS discussions with FEMA's Congressional Affairs Division, April 5, 2025.

Notes: A national alert initiator would be the President, the FEMA Administrator, or the President's designees. After initiation, an alert originator would compose and issue the emergency alert.

National Alerts and Federal Agencies

FEMA and the FCC manage the systems that disseminate national alerts—namely, the EAS (through the broadcast-based distribution system and IPAWS-OPEN) and WEA (through IPAWS-OPEN).

The Role of the FCC in National Alerts

The FCC regulates radio and television broadcasters and wireless service providers, including their role in sending emergency alerts to the public. The Communications Act of 1934 authorizes the FCC to regulate "interstate and foreign commerce in communication by wire and radio so as to make available ... to all the people of the United States ... a rapid, efficient, Nation-wide and world-wide wire and radio communication service ... for the purpose of national defense, [and] for the purpose of promoting safety of life and property through the use of wire and radio communications."[33] The law provides the FCC with general rulemaking authority to carry out its regulatory responsibilities.[34]

Modernization and Expansion of Alerting Capabilities by the FCC

The FCC has promulgated rules to improve and modernize the national alerting system. As new technologies have emerged, the FCC has adopted rules to expand alerting to new communication pathways. In 1994, the FCC adopted rules to replace the EBS with the EAS.[35] To implement the EAS and modernize the alerting infrastructure, the FCC required television and radio broadcasting stations and cable service providers to install and operate specialized equipment capable of receiving signals that indicate the type of, and targeted location for, the alert.[36] Thus, the EAS uses technologies with flexibility for mass communications and compatibility with different transmission systems.[37] Through the EAS, a national alert could reach the public more quickly and efficiently than it could via the EBS.

In 2002, the FCC adopted rules that allow broadcast stations to air audio of presidential EAS messages from a source other than the audio received by an EAS message decoder,[38] as some experts had indicated that audio received on an EAS decoder "may be of questionable quality."[39]

[33] 47 U.S.C. §151.

[34] 47 U.S.C. §303(r).

[35] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Amendment of Part 73, Subpart G, of the Commission's Rules Regarding the Emergency Broadcast System*, November 10, 1994, p. 1788, https://docs.fcc.gov/public/attachments/FCC-94-288A1.pdf.

[36] 47 C.F.R. §11.

[37] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Amendment of Part 73, Subpart G, of the Commission's Rules Regarding the Emergency Broadcast System*, November 10, 1994, pp. 1798-1799, https://docs.fcc.gov/public/attachments/FCC-94-288A1.pdf.

[38] An EAS decoder can receive and decode the EAS message header codes and convert CAP-formatted EAS messages into alert messages. 47 C.F.R. §11.52; 47 C.F.R. §11.33.

[39] FCC, *Report and Order: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, February 22, 2002, p. 23, https://docs.fcc.gov/public/attachments/FCC-02-64A1.pdf.

In 2009, the FCC adopted another rule that requires CMS providers to transmit presidential alerts with "the highest priority ... without any delay" and to preempt other pending alerts.[40]

The FCC is also involved in continuous testing of alerts, including national alerts. In 2011, the FCC required the first national EAS test using the Emergency Alert Notification (EAN) event code for national alerts.[41] The FCC, in partnership with FEMA, has conducted tests of alerting systems, including a test of the broadcast-based distribution system for the EAS in 2021 and a test of the IPAWS distribution method for the EAS in 2023.[42]

In 2016, the FCC required CMS providers participating in WEA to send national alerts immediately upon receipt,[43] and in 2018, the FCC created the Alert Reporting System, which sought to improve the efficiency and effectiveness of how national and other alerts are delivered.

In 2021, the FCC changed the name of presidential alerts to "national alerts" and expanded the list of approved initiators to include the FEMA Administrator and the President's designees.[44] In 2022, the FCC required that EAS participants transmit an alert using an IP-based Common Alerting Protocol, where available, to improve the quality of audio messages.[45]

The Role of FEMA in National Alerts

FEMA manages the nationwide activation, tests, and exercises of the broadcast- and internet-based distribution systems for national alerts. It also confirms the proper functioning of the WEA and EAS communication pathways, both of which would be used to disseminate national alerts. FEMA also handles the procurement, construction, and improvements of IPAWS.

In FY2022, Congress appropriated $40 million in funding to be used for the Next Generation Warning System and Grant Program (NGWSGP) to help public media entities replace and upgrade aging infrastructure, which would allow them to increase the use of the IPAWS distribution format, in order to enhance alerting and warning capabilities.[46] After FEMA, which manages the program, paused grant payments to the Corporation for Public Broadcasting (CPB)—the solicitor of subgrant applications for the program—the CPB filed a lawsuit against FEMA. On April 24, 2025, FEMA released the $40 million in funding, allowing the CPB to

[40] FCC, *First Report and Order: In the Matter of the Commercial Mobile Alert System*, April 9, 2008, p. 13, https://docs.fcc.gov/public/attachments/FCC-08-99A1.pdf.

[41] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, February 2, 2011, p. 2.

[42] In the 2021 test of the legacy-based distribution system, 89.3% of EAS participants received the test message, and 87.1% of retransmissions were successful. Six PEP stations experienced issues with their audio transmission. FCC, *Report: August 11, 2021 Nationwide EAS Test*, December 2021, p. 3, https://docs.fcc.gov/public/attachments/DOC-378861A1.pdf. In the 2023 test of IPAWS, the FCC found that the system had a retransmission rate of 93.6%, an increase compared to the 2021 test. In 2023, 23% of participants used outdated software or equipment, which had the lowest receipt and retransmission rates of all tested equipment and no longer supported software updates. FCC, *Report: October, 4, 2023 Nationwide Emergency Alert Test*, December 2021, p. 4, https://docs.fcc.gov/public/attachments/DOC-403500A1.pdf.

[43] FCC, *Report and Order and Further Notice of Proposed Rulemaking: In the Matter of Wireless Emergency Alerts*, September 29, 2016, p. 40, https://docs.fcc.gov/public/attachments/FCC-16-127A1.pdf.

[44] FCC, *Report and Order and Further Notice of Proposed Rulemaking: Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, June 17, 2021, p. 6.

[45] FCC, *Report and Order: In the Matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System*, September 29, 2022, p. 2, https://docs.fcc.gov/public/attachments/FCC-22-75A1.pdf.

[46] The NGWSGP is a competitive grant program that mitigates the cost to public television and radio broadcasters of replacing and upgrading EAS equipment to enhance the alert, warning, and interoperability of EAS participants. Congress appropriated the funding through the Consolidated Appropriations Act, 2022 (P.L. 117-103).

resume grant review and reimbursement. For more information, see CRS In Focus IF12998, *The Emergency Alert System: Status of Current Funding for Improvements*, by Amanda H. Peskin.

Selected Legislation from the 119th Congress

In the 119th Congress, legislation has been introduced related to how emergency alerts, including national alerts, may be disseminated. One example is the Weather Alert Response and Notification (WARN) Act, H.R. 1076. This bill calls for the Comptroller General to conduct a study on the effectiveness of local, state, territorial, and federal emergency alerting systems. Specifically, the bill would require that the study evaluate the "efficacy of various alert mediums, including platforms such as social media, to disseminate emergency alerts."

In the national alert infrastructure, FEMA has selected certain AM stations as the PEP stations that would retransmit initial alerts, while other AM stations would receive the alerts from those PEP stations as part of the daisy chain. AM radio stations also serve as backup communications systems in the event that a disaster disrupts wireless and internet-based alerting systems, providing redundancy.[47] In the 118th Congress, some Members introduced the AM Radio for Every Vehicle Act of 2023 and 2024 (H.R. 3413 and H.R. 8449, respectively). Similar legislation has been introduced in the 119th Congress in both the House and the Senate (H.R. 979, S. 315). If enacted, the legislation would require that every standard passenger motor vehicle manufactured in the United States be able to receive signals and play content transmitted by AM broadcast stations, giving drivers and passengers the ability to receive alerts distributed through the EAS. The stated goal of this bill is to provide people with a "steadfast and easily accessible [method to receive] alerts," considering that "cell service and internet connections can fail."[48]

Both H.R. 979 and S. 315 would direct the Comptroller General to conduct a study on (1) the role of passenger motor vehicles in IPAWS communications, including by providing access to AM stations; (2) the capability of other communications technologies to reach at least 90% of the U.S. population in a crisis scenario; and (3) the advantages, effectiveness, limitations, resiliency, and accessibility of existing IPAWS communication pathways, including AM stations in passenger motor vehicles, as well as of AM broadcast stations relative to other IPAWS communication pathways.[49]

Selected Congressional Considerations

Although a national alert has never been sent outside of testing scenarios, Congress may examine the national alert system's capabilities in the context of modern standards by evaluating the discretionary language used in the authorizing statute, security concerns, and public awareness of national alerts.

Presidential Authority in National Alerts

Section 706 of the Communications Act of 1934, as amended, provides presidential power over the country's communications systems during wartime. The President may instruct that certain

[47] CRS Report R48315, *AM Broadcast Radio in Motor Vehicles*, by Dana A. Scherer, p. 12.

[48] H.Rept. 118-740.

[49] H.R. 979; S. 315.

essential communications be given priority when sent by carriers during wartime.[50] The President may also give these directions "at and for such times as he may determine."[51]

Congress may consider prompting the President in legislation to issue guidelines, a memorandum, or similar products to clarify when a national alert could be sent, and to establish a standard procedure for issuing national alerts, without amending the law. Considering that, to date, no alerts under the Section 706 authority have been sent, questions may arise as to when such an alert would be appropriate and necessary. For example, in 2018, after a WEA that turned out to be false was sent in Hawaii about an incoming missile, Senator Schatz of Hawaii asked whether such a message would be appropriate for a national alert. The Senator contended that an incoming missile would be the type of emergency warranting the "highest priority alert and, therefore, perfect for a Presidential alert."[52]

Security Concerns About Alerting Systems

Emergency alerting systems that could be used to instruct large populations to take particular actions may be the target of attacks by bad actors, as evidenced by security breaches in the past. For example, in 2016, hackers compromised the EAS at a local television station in Utica, New York, to broadcast a false alarm about a hazardous material.[53] The station determined that the breach resulted from an error in their EAS message decoder. In 2017, a different group of hackers in Dallas, Texas, accessed the city's siren system through radio frequencies.[54] Some experts have raised concerns that cyberterrorists could compromise emergency alerting systems to, for instance, "send a false message directing citizens to move to a designated staging area and then attack the citizens staging there."[55]

Mobile applications are becoming an increasingly popular channel to send emergency alerts, which would include national alerts. However, the rise in use of emergency alert applications has raised security concerns.[56] User data privacy, application integrity (e.g., maintaining up-to-date software that can prevent attackers from altering application code or data), and resiliency of design (e.g., designing the application to be resilient against malicious input that can interfere with data) are some of the concerns stakeholders have raised.[57] Users expect an alerting mobile application to provide support and accurate information during disaster scenarios, and maintaining application integrity can mitigate the risk of a bad actor sending a false alarm to the

[50] 47 U.S.C. §606(a), as amended.

[51] 47 U.S.C. §606(a), as amended.

[52] U.S. Congress, Senate Committee on Commerce, Science, and Transportation, *This Is Not a Drill: An Examination of Emergency Alerts*, hearings, 115th Cong., 2nd sess., January 25, 2018, S.Hrg. 115-653, p. 30, https://www.congress.gov/115/chrg/CHRG-115shrg37299/CHRG-115shrg37299.pdf.

[53] Andrew W. Green et al., "Responding to Cybersecurity Challenges: Securing Vulnerable U.S. Emergency Alert Systems," *Communications of the Association for Information Systems*, vol. 46 (2020), p. 190, https://doi.org/10.17705/1CAIS.04608 (hereinafter Green et al., "Responding to Cybersecurity Challenges: Securing Vulnerable U.S. Emergency Alert Systems").

[54] Green et al., "Responding to Cybersecurity Challenges: Securing Vulnerable U.S. Emergency Alert Systems," p. 190.

[55] Green et al., "Responding to Cybersecurity Challenges: Securing Vulnerable U.S. Emergency Alert Systems," p. 191.

[56] Marc Schönefeld and Malte Schönefeld, "IT-Security Awareness of Emergency Alert Apps," *Information Systems for Crisis Response and Management*, 2020, p. 396, https://idl.iscram.org/files/marcschoenefeld/2020/2239_MarcSchoenefeld+MalteSchoenefeld2020.pdf (hereinafter Schönefeld and Schönefeld, "IT-Security Awareness of Emergency Alert Apps").

[57] Schönefeld and Schönefeld, "IT-Security Awareness of Emergency Alert Apps," p. 398.

application's users. Congress could consider requiring cybersecurity protections and controls to reduce this risk. For example, Congress could require the FCC to study the accuracy and security effects of introducing additional approvals or password entries prior to sending an alert.[58] Congress may consider holding a hearing to assess the need for improved security, training, and awareness of cybersecurity concerns related to emergency alerts.

The broadcast of national alerts could be susceptible to *spoofing*[59]—where hackers send a false message to every device within the range of a black-market cell tower that hackers unlawfully created. To mitigate the risk of spoofed alerts, Congress may direct the FCC to issue technical standards requiring that a trusted carrier authenticate an alert in order for it to appear on a cellular device[60] and that the FCC provide practical measures within the alert that would allow users to validate the content of the message.[61] To ensure that alerts can be attributed to their actual originator, Congress could direct the FCC to issue security credentials to disseminate alerts to individual alerting authorities, rather than to an entire jurisdiction or an agency, as is the current practice.[62] For example, after the false-missile alert in Hawaii in 2018, the Hawaii Emergency Management Agency began requiring two credentialed individuals to separately log in and approve transmission of a missile launch alert.[63] Congress may consider investigating whether there are any existing barriers to providing alert originators an individual security credential for sending alerts, as well as reasons for providing credentials on a jurisdictional or an agencywide basis.

Public Reception of National Alerts

Members of the public are more likely to act upon receiving an emergency alert that they understand and trust than one they are skeptical about.[64] Studies have shown that, in general, members of the public are more trusting and approving of political actors who belong to the same

[58] Some experts say that having to generate the text to an alert, insert a password, and then transmit the alert would create added security. Lisa Demer, "Alaska Emergency Alert System Less Vulnerable to False Alarms Than Hawaii's, Officials Believe," *Anchorage Daily News*, January 15, 2018, https://www.adn.com/alaska-news/military/2018/01/15/alaska-officials-think-the-states-emergency-system-avoids-false-alarms-like-in-hawaii/.

[59] Gyuhong Lee et al., "Spoofing Presidential Alerts," University of Colorado Boulder, Department of Computer Science, https://systems.cs.colorado.edu/headlines/cmas.html (hereinafter Lee et al., "Spoofing Presidential Alerts"); Daniel Strain et al., "The New 'Spoofing' Scam: National Emergency Alerts," Association of American Universities, July 16, 2019, https://www.aau.edu/research-scholarship/featured-research-topics/new-spoofing-scam-national-emergency-alerts.

[60] A "trusted" carrier is one that protects its customers' communications data, along with its own network. Leonardo A. Martucci et al., "Privacy, Security and Trust in Cloud Computing: The Perspective of the Telecommunication Industry," paper presented at the Ninth International Conference on Ubiquitous Intelligence and Computing and Ninth International Conference on Autonomic and Trusted Computing, Fukuoka, Japan, September 2012, p. 629, https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6332058.

[61] Lee et al., "Spoofing Presidential Alerts."

[62] National Academies of Sciences, Engineering, and Medicine (NASEM), *Emergency Alert and Warning Systems: Current Knowledge and Future Research Directions*, May 2018, p. 71 (hereinafter NASEM, *Emergency Alert and Warning Systems: Current Knowledge and Future Research Directions*).

[63] FCC, *Report and Recommendations: Hawaii Emergency Management Agency January 13, 2018 False Alert*, April 2018, p. 23, https://docs.fcc.gov/public/attachments/DOC-350119A1.pdf.

[64] Carol Woody and Robert Ellison, *Maximizing Trust in the Wireless Emergency Alerts (WEA) Service*, Software Engineering Institute, February 2014, p. 1, https://apps.dtic.mil/sti/tr/pdf/ADA609838.pdf.

political party as they do.[65] For example, a 2021 study found that "partisans" were more likely to believe the legitimacy of an alert when it was attributed to a leader of their political party.[66]

In another study examining the public perception of trustworthiness of alerts sent by the President, the researchers found that participants viewed messages with the title "national alert" as more trustworthy than those entitled "presidential alert."[67] The study also found that 27.4% of participants "mostly" understood what types of emergencies could induce a national alert, and 28.7% expressed a desire to opt out of alerts sent by the President.[68] In addition, a commenter on an FCC proceeding to change the name of "presidential alert" to "national alert" supported the change to "better represent the *purpose* of the alert as opposed to the *originator* of the alert ... [to] remove any perceived political party influence."[69] Others have found that while media coverage after the first national test of the WEA system in 2018 suggested that the alert would prompt partisan backlash, "any immediate partisan division over the alert appeared minimal."[70] A literature review designed to identify research gaps in public alert and warning systems discussed one study that found that people's perceptions of the accuracy and credibility of the warning increased the likelihood that they would take protective action during the emergency.[71]

First responders have found that misinformation on social media has posed challenges to ensuring that the public has accurate information during an emergency.[72] During emergencies, some individuals rely on social media platforms for information and support.[73] Some public safety entities, like those in Los Angeles County and Los Angeles City, use social media platforms to send alert messages to the public, providing a method of "easily accessible, interactive, two-way communication" available to anyone.[74] Some proponents state that the ability to crowdsource and share a lot of information over social media is advantageous when responding to an emergency.[75]

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[65] Daniel A. N. Goldstein and Johannes Wiedemann, "Who Do You Trust? The Consequences of Partisanship and Trust for Public Responsiveness to COVID-19 Orders," *Perspectives on Politics*, vol. 20, no. 2 (April 16, 2021), p. 414, https://doi.org/10.1017/S1537592721000049.

[66] Hamilton Bean and Nels Grevstad, "Wireless Emergency Alerts: Public Understanding, Trust, and Preferences Following the 2021 US Nationwide Test," *Journal of Contingencies and Crisis Management*, vol. 31, no. 2 (June 2023), p. 276, https://doi.org/10.1111/1468-5973.12438 (hereinafter Bean and Grevstad, "Wireless Emergency Alerts: Public Understanding, Trust, and Preferences Following the 2021 US Nationwide Test").

[67] Bean and Grevstad, "Wireless Emergency Alerts: Public Understanding, Trust, and Preferences Following the 2021 US Nationwide Test," p. 273.

[68] Bean and Grevstad, "Wireless Emergency Alerts: Public Understanding, Trust, and Preferences Following the 2021 US Nationwide Test," p. 280.

[69] REC Networks comment on FCC proceeding, *In the Matter of Amendment of Party 11 of the Commission's Rules Regarding the Emergency Alert System, Wireless Emergency Alerts*, p. 2, https://www.fcc.gov/ecfs/document/104202996618115/1.

[70] Brian Guay and Jesse Lopez, "Partisan Bias in Bipartisan Places? A Field Experiment Measuring Attitudes Toward the Presidential Alert in Real Time," *Public Opinion Quarterly*, vol. 85, no. 1 (Spring 2021), p. 170, https://research.ebsco.com/c/cncs2l/viewer/pdf/wmuo4oogdv?route=details.

[71] Sadiq et al., "Public Alert and Warning System Literature Review in the USA."

[72] NASEM, *Emergency Alert and Warning Systems: Current Knowledge and Future Research Directions*, p. 72; and Linda Plotnick and Starr Roxanne Hiltz, "Barriers to Use of Social Media by Emergency Managers," *Journal of Homeland Security and Emergency Management*, vol. 13, no. 2 (2016), p. 263, https://doi.org/10.1515/jhsem-2015-0068.

[73] Danielle E. M. van Dijl et al., "Integrating Social Media Features into a Cell Phone Alert System for Emergency Situations," *Journal of Contingencies and Crisis Management*, vol. 27, no. 3 (September 2019), p. 214, https://doi.org/10.1111/1468-5973.12251 (hereinafter van Dijl et al., "Integrating Social Media Features into a Cell Phone Alert System for Emergency Situations").

[74] van Dijl et al., "Integrating Social Media Features into a Cell Phone Alert System for Emergency Situations," p. 215.

[75] Khristina Maksudovna Vafaeva et al., "The Synergy of Emergency Alerts and Social Media: An Evaluation with the (continued...)

Critics say that the risks of spreading rumors and misinformation about an emergency, creating an information overload, and marginalizing people without internet access are drawbacks to using social media to disseminate alerts.[76]

Congress may consider requiring FEMA to undertake a public awareness campaign to address the lack of consumer understanding and interest in receiving national alerts. For instance, Congress could consider requiring FEMA to expand educational outreach before and during emergencies for the purpose of increasing public awareness and trust. Congress also could consider encouraging alerting authorities to develop protocols that address misinformation online, including on social media, during emergencies.

Emergency Alert and Social Media Engagement Test," *BIO Web of Conferences*, vol. 86 (2024), p. 3, https://doi.org/10.1051/bioconf/20248601074 (hereinafter Vafaeva et al., "The Synergy of Emergency Alerts and Social Media: An Evaluation with the Emergency Alert and Social Media Engagement Test").

[76] Vafaeva et al., "The Synergy of Emergency Alerts and Social Media: An Evaluation with the Emergency Alert and Social Media Engagement Test," p. 3.

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