



VIA ECFS

May 4, 2021

Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, S.W.
TW-A325
Washington D.C. 20554

Re: Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91]

Dear Ms. Dortch:

Enclosed for filing in the above-referenced Notice of Proposed Rulemaking and Notice of Inquiry are reply comments of the Rehabilitation Engineering Research Center for Wireless Inclusive Technologies (Wireless RERC).

Should you have any questions concerning this filing, please do not hesitate to contact me via email at helena.mitchell@cacp.gatech.edu.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "H. Mitchell", is written above the typed name.

Helena Mitchell
Principal Investigator, Wireless RERC
Center for Advanced Communications Policy
Georgia Institute of Technology

Enclosure

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Amendment of Part 11 of the Commission's Rules) PS Docket No. 15-94
Regarding the Emergency Alert System)
) PS Docket No. 15-91
Wireless Emergency Alerts)

REPLY COMMENTS OF
GEORGIA INSTITUTE OF TECHNOLOGY (GEORGIA TECH), CENTER FOR
ADVANCED COMMUNICATIONS POLICY (CACP)
AND THE REHABILITATION ENGINEERING RESEARCH CENTER FOR
WIRELESS INCLUSIVE TECHNOLOGIES (WIRELESS RERC)

Georgia Tech's Center for Advanced Communications Policy (CACP), in collaboration with the Rehabilitation Engineering Research Center for Wireless Inclusive Technologies¹ (Wireless RERC), hereby submits reply comments in the above-referenced *Notice of Proposed Rulemaking and Notice of Inquiry* released on March 19, 2021. CACP is recognized at the state and national level as a neutral authority that monitors and assesses technical developments, identifies future options, and provides insights into related legislative and regulatory issues. CACP evaluates technological trends that can impact issues as diverse as wearable technologies, the Internet of Things, emergency communications, and communications and technology access by people with disabilities.

CACP is the home of the Wireless RERC. The Wireless RERC mission is *to integrate established wireless technologies with emerging wirelessly connected devices and services for a transformative future where individuals with disabilities achieve independence, improved quality*

¹ The Rehabilitation Engineering Research Center for Wireless Inclusive Technologies (Wireless RERC) is sponsored by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90RE5025-01). NIDILRR is within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this filing do not necessarily represent the policy of NIDILRR, ACL, HHS, and you should not assume endorsement by the Federal Government.

of life, and enhanced community participation. Over the past 20 years, subject matter experts at CACP and the Wireless RERC have been actively involved with research and regulatory issues concerning accessible wireless technologies and services. Additionally, both entities have studied the accessibility of technologies and services used in the emergency communications domain. The comments respectfully submitted below are based on subject matter expertise developed over the past 20 years. Findings from our consumer surveys and focus groups, policy research, and development efforts inform the recommendations made herein.

Reply to comments made by CTIA; the jointly filed comments of the Telecommunications for the Deaf and Hard of Hearing, Inc and 14 other organizations (collectively referred to as Commenters); and The City of New York's Emergency Management Department (NYCEM).

The Wireless RERC supports comments made by CTIA, Commenters, and NYCEM regarding expanding the Presidential alert class to allow activation by FEMA. Further, NYCEM suggests that "other federal agencies that have responsibility for detecting and alerting emergencies of national significance (e.g., the Department of Defense, the Department of Homeland Security) also be allowed to activate the presidential alert class."² The Wireless RERC agrees for the same reasons that NYCEM puts forth. Namely, it would be more expedient to alert the nation if the agencies responsible for detecting the threat have the authority to issue the alert. For example, a review of WEA activations from June 2012 – September 2020 revealed that the primary WEA originator is the National Weather Service (NWS), which sent 50,734 messages, or 89%, of all emergency communication messages. NWS is the only entity that issues a WEA warning for weather emergencies. Most localities do not send weather-related emergency notifications unless it is a follow-up or urging residents to take action.

² Comments of NYCEM (p. 8). (2021). In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

Also, the Wireless RERC supports CTIA's and NYCEM's recommendation to relabel the alerts "Federal" as opposed to "Presidential" or "National." NYCEM contends that "Presidents, as can be the case with many elected office holders, can be polarizing figures, and one's perception toward the President may delay and/or detract from the critical public safety message that a national WEA activation would aim to galvanize."³ As reported in the news, public response to the first nationwide test of WEA in 2018 resulted in "[Disquiet about the test](#), including efforts to [power down phones](#), [cancel wireless plans](#), and otherwise [agitate against](#) the very idea of non-optional emergency notices."⁴ The Wireless RERC and Georgia Tech personnel were asked to observe the test and share their experiences. Some colleagues mentioned a preference for receiving the WEA test *without* the title "Presidential Alert" and would like to have seen the notification titled along the lines of "National WEA Test." That said, we agree that the term presidential is unfortunately inflammatory and may elicit responses contrary to the intention of the emergency message specifically (e.g., protective action) and the system entirely (i.e., public trust). As asserted by CTIA, "the effectiveness of emergency alerting will be lost if people simply ignore or opt-out of receiving these critical messages."⁵

However, relabeling the alerts as "National" implies nationwide reach, and we agree with NYCEM and CTIA that a Federal level alert may require regional distribution over nationwide distribution. "There may be instances when FEMA (in its role as an alert originator) may decide to select geocodes in which to send alerts to specific/targeted areas or regions."⁶ As such, the

³ Comments of NYCEM (p. 2). (2021). In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

⁴ Bogost, I. (2018). Trump is not texting you. *The Atlantic*. Available at <https://www.theatlantic.com/technology/archive/2018/10/femas-wireless-alert-test-testing-public-trust/571861/>

⁵ Comments of CTIA (p. 4). In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

⁶ Comments of CTIA (p. 7). In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

(continued . . .)

Wireless RERC recommends the term "Federal Alert" and further agrees that "Given the WEA system can support geotargeting broadly, NYCEM is unaware of any technical limitation related to sub-national targeting of "Presidential Alert" messages nor does NYCEM support any such limitation be permitted for the proposed "National Alert" class of messages."⁷

Finally, CTIA recommends that "the Commission and FEMA. . .educate the public about any new alert label, FEMA's role in originating WEA messages, why consumers may not opt-out of these messages and recommend that consumers take appropriate actions if such messages are received." The Wireless RERC agrees. Our previous WEA research hypothesized that greater awareness and exposure to WEA alerts would increase trust and appropriateness of individual responses to alerts. The analysis of the survey data confirmed the hypothesis. Individuals who were familiar with WEA were more likely to act immediately, less likely to be unsure of what action to take, and less likely to make judgments about whether the emergency alert applied to them.⁸ As a result, federal government stakeholders, such as the FCC and FEMA, should increase efforts to educate the public on WEA in general and any changes that occur as a result of this NPRM and NOI.

Reply to comments made by Commenters

Communications during active emergencies impact individuals' ability to prepare, respond and recover from disasters. However, as stated by the Commenters, "the harsh reality is that individuals who are deaf or hard of hearing are too often left out of the emergency alerting

⁷ Comments of NYCEM (p. 3). (2021). In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

⁸ LaForce, S., Bennett, D., Linden, M., Touzet, C. & Mitchell, H., (2016). Optimizing accessibility of wireless emergency alerts: 2015 survey findings, *Journal on Technology & Persons with Disabilities*, 4, 42-54.

process.⁹" This reality extends to people with disabilities, in general, as evidenced by people with disabilities' experiencing a higher chance of mortality during emergencies.¹⁰ Researchers have explored the experiences and unmet needs of people with disabilities during and after disaster events^{11,12,13,14} with some that specifically focus on emergency communications for people with disabilities.^{15,16,17,18,19} The Wireless RERC recommends that the FCC bring the academic research findings to bear on federal policy and regulations concerning the accessibility of emergency messages for people with disabilities.

The Commenters further state that "it is critical that communications are provided in plain and easy-to-understand language."²⁰ The Wireless RERC recently examined the Integrated Public Alert and Warning System (IPAWS) dataset that contained 56,513 WEA messages from

⁹ Commenters (p. 3). (2021) In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

¹⁰ Chou, Y.-J., Huang, N., Lee, C.-H., Tsai, S.-L., Chen, L.-S., & Chang, H.-J. (2004). Who is at risk of death in an earthquake? *American Journal of Epidemiology*, 160(7), 688-695.

¹¹ Tierney, K., Petak, W., Hahn, H. (1988). *Disabled Persons and Earthquake Hazards*. Institute of Behavioral Science: University of Colorado.

¹² McGuire, L.C., Ford, E.S., & Okoro, C.A. (2007). Natural Disasters and Older US Adults with Disabilities: Implications for Evacuation. *Disasters*. 31(1): 49-56.

¹³ Fox, M.H., White, G.W., Rooney, C., & Rowland, J. (2007). Disaster Preparedness and Response for Persons with Mobility Impairments: Results from the University of Kansas Nobody Left Behind Study. *Journal of Disability Policy Studies*. 17:196.

¹⁴ Rowland, J., Fox, M.H., White, G.W., & Rooney, C. (2007). Emergency Response Training Practices for People with Disabilities: Analysis of Some Current Practices and Recommendations for Future Training Programs. *Journal of Disability Studies*. 17(4): 216-222.

¹⁵ Brooks, M. (2006). Challenges for Warning Populations with Sensory Disabilities. Proceedings of the 3rd International ISCRAM Conference. Newark New Jersey.

¹⁶ Sullivan, H.T. & Hakkinen, M.T. (2006). Disaster Preparedness for Vulnerable Populations: Determining Effective Strategies for Communicating Risk, Warning and Response. Presented at the 3rd Annual Magrann Research Conference. New Brunswick, New Jersey.

¹⁷ Mitchell, H., Johnson, J., & LaForce, S. (2010). Wireless Emergency Alerts: An Accessibility Study. The Proceedings of the 7th International ISCRAM Conference. Seattle Washington USA.

¹⁸ Bennett, D. and LaForce, S., "Text-to-action: Understanding the interaction between accessibility of wireless emergency alerts and behavioral response," in *Risk Communication and Resilience*, pp. 9-26, (Kar, B. and Cochran, D. M., Eds.), New York: Routledge (2019).

¹⁹ LaForce, S., Bennett, D., Linden, M., Touzet, C. & Mitchell, H., "Optimizing accessibility of wireless emergency alerts: 2015 survey findings," *Journal on Technology & Persons with Disabilities*, vol. 4, pp. 42-54, October 2016.

²⁰ Commenters (p. 7). (2021) In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

June 1, 2012, to September 14, 2020, and identified factors that could potentially impact accessibility, utility, and comprehension. These included jargon, abbreviations, and acronyms; event type not included, no action or instructions given, no sending agency included, and vague message. Examples of jargon, phrases, abbreviations, and acronym occurrences in the WEA messages include "sudden whiteouts," "HST," "Blu," "Poss," "seda." These terms diminish user-friendliness and accessibility as the receiver must be familiar with the terms to fully understand the message's meaning and the associated risk.

Further, the use of jargon and abbreviations is problematic to American Sign Language (ASL) interpretation of WEA message details, and protective actions recommended for safety. Results of focus groups conducted with participants who were bilingual in ASL and English were presented with conventional text alerts, as well as text alerts coupled with video clips presenting an ASL interpretation showed the difficulty of understanding some phrases typically used in National Weather Service alerts, such as "take cover" or "low-lying area." According to the participants, these idiomatic expressions do not translate well into ASL, so the word choice used in text alerts should be carefully considered.²¹

The WEA dataset contained 148,359 instances of reduced accessibility in the short text versions. On December 18, 2019, "long text" messages were introduced for compatible mobile devices to receive extended text and information on the emergency. After introducing long-form text messages in December 2019 until September 2020, there was a significant decrease in the instances (8,802) of reduced accessibility impacting readability. This finding confirms earlier assertions that extending the character limitation would positively impact the accessibility of the messages.²² Nevertheless, non-plain language is still being used. As such, the Wireless RERC

²¹ Johnson, J., Mitchell, H., LaForce, S., Price, E., & Lucia, F. (2010). Mobile emergency alerting made accessible. *International Journal of Emergency Management*, 7(1), 88-99.

²² Mitchell, H., LaForce, S., Touzet, C., Price, E., Linden, M., Lucia, F. (2016). Comments filed in response to Improving Wireless Emergency Alerts and Community-Initiated Alerting [PS Docket No. 15-91]. Federal Communications Commission: Washington, DC, January 13, 2016.

recommends that emergency messaging best practices include a caution against the use of jargon and abbreviations. The FCC periodically sends Notices reminding entities of their obligations to ensure the accessibility of emergency messages. Within these reminders, the inclusion of regulatory requirements and evidence-based content guidelines will improve alert authors' capacity to effectively improve access to the messages they originate.

The Commenters also state that "Many members of the deaf and hard of hearing community also depend on WEAs on their mobile devices...as a reliable source of emergency alerts. However, according to preliminary research performed by TDI, approximately 45% of deaf and hard of hearing individuals are unaware of WEAs. Moreover, 69% are unsure of whether they have WEA capability on their smartphones. Accordingly, the Commenters support designating National Alerts as a non-optional category of alerts.²³" The Wireless RERC agrees. Our research supports TDI's preliminary findings outlined above, which found that while a majority of all respondents (60%) had heard of WEA prior to completing the survey, respondents without a disability were twice as likely to report having heard of WEA (69%) than those respondents with a disability (53%) ($p < 0.01$). Further, variations in the level of WEA awareness by the disability type is as follows: Blind/Low Vision (56%), Anxiety (52%), Mobility (52%), Speaking (51%), Deaf/Hard of Hearing (49%), Concentration (49%), Dexterity (44%), Reach/using hands and arms (41%). These data suggest that there is significant room for growth regarding outreach to people with disabilities on the availability of WEA. Further, due to the differing awareness levels based on disability type, targeted outreach may be necessary, as well as ensuring that outreach materials and methods are appropriate and accessible to the target population. In the absence of these targeted awareness campaigns, requiring the "Federal/National" alerts to retain the Presidential designation of non-optional would ensure the delivery of these messages to WEA-capable devices.

²³ Commenters (p. 4). (2021) In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.

Moving beyond message delivery to message utility and ability to elicit the desired actions, the Wireless RERC also agrees with the Commenters recommendation for the "National Alerts (including Presidential and FEMA alerts) include a link to a website where individuals can access more information about the subject alert. Such information should be made available (at a minimum) in ASL and other languages. The medium should be accessible such as having any video be captioned to ensure that deaf and hard-of-hearing consumers, and speakers of other languages, are able to access and understand the content of these critically important alerts."²⁴ We add that any videos provided via these links should contain both ASL interpretation and captions. ASL is a distinct language used by individuals of the Deaf community and is grammatically dissimilar to English.²⁵ Some people who are Deaf (and not bilingual) rely primarily on ASL for communication and may have difficulty translating written English in a similar manner to a person whose primary language is French would have difficulty understanding text written in English.^{26,27} Other people who are Deaf and bilingual are comfortable with written English and have no problem with the difference in grammar and syntax. Due to the language diversity within the deaf and hard of hearing community, emergency information should simultaneously include ASL and captions. To that end, the Wireless RERC also agrees with the Commenters regarding disability representation on State Emergency Communications Committees (SECCs). "Providing a seat at the table to this community will go a long way toward resolving outstanding accessibility issues and ensuring that the needs of individuals with disabilities are addressed as SECCs make changes to the way emergency alerts

²⁴ Ibid.

²⁵ Neidle, C. J. (2000). *The Syntax of American Sign Language: Functional Categories and Hierarchical Structure*. MIT Press.

²⁶ Mitchell, Ross E, and Karchmer, M.A. (2011). "Demographic and Achievement Characteristics of Deaf and Hard-of-Hearing Students." *Oxford handbook of Deaf studies, language, and education*. 1: 18-31.

²⁷ Schein, Jerome D. (1989). *At Home among Strangers*. Gallaudet University Press Washington, DC.

are provided in the future.²⁸"

In closing, the Wireless RERC recommends the term "Federal Alert" replace Presidential alert because of the critical nature of disasters and the need for response efforts to begin quickly regardless of politics. The Wireless RERC also emphasizes the need to inform emergency communications stakeholders on the relationship between language, disability, and accessible emergency messaging, especially for those for whom ASL is their primary language. We commend efforts to continuously improve emergency communications systems by considering message elements and modalities that positively impact public trust in both WEA and EAS.

Respectfully submitted,



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²⁸ Commenters (p. 5). (2021) In the matter of Amendment of Part 11 of the Commission's Rules Regarding the Emergency Alert System; Wireless Emergency Alerts [PS Docket No.s 15-94 and 15-91. Washington, D.C., April 20, 2021.