VIA ECFS

June 11, 2018

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

Re: FCC Seeks Comment about Multimedia Content in WEA Messages [GN Docket Nos. 15-91; 15-94]

Dear Ms. Dortch:

      Enclosed for filing in the above-referenced Public Notice 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,

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

Enclosure

In the Matter of	)
	)
PARTIES ASKED TO REFRESH THE RECORD	)
ON FACILITATING	) PS Docket Nos. 15-91 and 15-94
MULTIMEDIA CONTENT IN 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 Technologies[1] (Wireless RERC)

hereby submits reply comments in the above-referenced *Public Notice* released on March 28, 2018.

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, emergency communications, and smart environments 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 of life, and enhanced

community participation. Over the past 17 years, subject matter experts at CACP and the Wireless RERC

have been actively involved with research and regulatory issues concerning accessible wireless

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[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.

technologies and services. Additionally, both entities have been studying the accessibility of wireless emergency alerting, notifications, and messages for people with disabilities and the legislative and regulatory framework which led to the creation of the WARN Act and subsequent WEA alerting capacities. Findings from our consumer surveys, focus groups, usability studies, policy research, and development efforts inform the contents of this submission.

The Wireless RERC is in general agreement with comments that support the inclusion of multimedia content in WEA messages. Specifically, comments made by the Consumer Groups, California Coalition of Agencies Serving the Deaf and Hard of Hearing (CCASDHH), and Gallaudet University RERC on Technology for the Deaf and Hard of Hearing (joint filing); the Association of Public-Safety Communications Officials (APCO); FEMA; Big City Emergency Managers, National Emergency Management Association, and the International Association of Emergency Managers (Emergency Managers Associations) (joint letter); and NOAA/National Weather Service. Despite sometimes having different rationales, all indicate the importance of multimedia message content in motivating people to take appropriate protective actions[2,3] and/or advancing accessibility of WEAs to people with disabilities.[4,5,6]

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[2] APCO. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. APCO International: Alexandria, VA

[3] NOAA/National Weather Service. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. APCO International: Silver Spring, MD

[4] FEMA. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. APCO International: Washington, D.C.

[5] Emergency Managers Associations. 2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. Big City Emergency Managers: Washington, D.C.

[6] Consumer Groups, California Coalition of Agencies Serving the Deaf and Hard of Hearing (CCASDHH), and Gallaudet University RERC on Technology for the Deaf and Hard of Hearing. (2018, May 30). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. Morgan, Lewis & Bockius LLP: Washington, D.C.

Reply to comments made separately by AT&T and CTIA.

The Wireless RERC also acknowledges the comments of AT&T and CTIA that discuss the technical difficulty and level of effort and resources it would require of wireless industry stakeholders to realize embedded multimedia content.[7,8] We urge wireless stakeholders to *continue* to embrace the changing expectations of public safety officials and the public with regards to an expanded suite of WEA capabilities. A 2005 National Council on Disability report emphasized that emergency communication systems "are typically designed for people without disabilities, for whom escape or rescue involves walking, running, driving, seeing, hearing, and quickly responding to instructions, alerts, and evacuation announcements.[9]" This may have been true in 2005, but the 2006 WARN ACT dictated that the nation's integrated public alert and warning system be designed to be accessible to people with disabilities. Indeed, since 2012 when WEAs were first deployed, they have become increasingly more accessible. The most recent updates allowing for increased character length and the inclusion of URLs are expected to have a positive impact on the accessibility of the message and by extension behavioral response. Adding embedded multimedia content would further enhance WEA messages for people with disabilities and language differences, allowing for multiple cognitive and sensory pathways (visual, auditory, and linguistic) to be automatically engaged for more efficient information processing and reaction.

In edging closer to the ubiquitous use of wireless communications, public expectations have been responsive to the increasingly elegant provision of a vast array of services and features. As the use of wireless services has become more pervasive within the population, the consumer response has been to expect ever-increasing access across all life contexts (home, school, work, community, medical, emergency, and so on). As wireless networks have evolved and new services have proliferated, people

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[7] AT&T. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. Wiley Rein LLP, AT&T Services, Inc.: Washington, D.C.

[8] CTIA. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. CTIA: Washington, D.C.

[9] National Council on Disability. 2005. Saving Lives: Including People with Disabilities in Emergency Planning. Washington, DC.

have come to expect rich media content on their mobile devices. Consumers' expectations of wireless connectivity and features have not reached its ceiling, and this expectancy extends to emergencies. The demand for rich media content likely multiplies in the periods directly preceding, during, and after large-scale emergencies. In this environment, for most users, the boundary between where a private good ends and a public service begins is indistinguishable. As such, the Wireless RERC supports APCO's recommendation to "adopt an approach to enhancing WEA that eliminates the disparity between what's broadly available for wireless network users and what's available for WEA.[10]"

Efforts to harness the computing power of the device (as suggested by NOAA/National Weather Service[11]), the reach and speed of the wireless networks, and the capabilities of IPAWS-OPEN and associated alert originator software (as suggested by FEMA[12]) to deliver embedded multimedia content in WEAs should remain a priority of stakeholders until such time that a technical solution(s) and regulatory framework to support the solution(s) are defined and implemented. In the meantime, as recommended by CTIA and AT&T, utilizing the URLs in the WEA message to deliver multimedia content is currently a viable solution that can be implemented today. As the Wireless RERC has stated in a prior filing, URLs can contain the additional information the public seeks, including American Sign Language (ASL) videos, emergency management websites or social media feeds, and more.[13]

Reply to comments made jointly by Consumer Groups, California Coalition of Agencies Serving the Deaf and Hard of Hearing (CCASDHH), and Gallaudet University RERC on Technology for the Deaf and Hard of Hearing.

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[10] APCO, p. 1

[11] NOAA/National Weather Service. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. NOAA/National Weather Service: Silver Spring, M.D.

[12] FEMA. (2018, May 29). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. APCO International: Washington, D.C.

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

"Multimedia capabilities offer critical public safety benefits to the deaf and hard of hearing community because photos, images, captioned images, and streaming video enable immediate comprehension and interpretation. Perhaps most important, multimedia WEA messaging would allow emergency information to be quickly and efficiently imparted to the deaf and hard of hearing community through American Sign Language.[14]" The Wireless RERC agrees that multimedia WEA messages would be particularly beneficial to people whose primary language is ASL. In a recently published journal article, *American Sign Language & Emergency Alerts: The Relationship between Language, Disability, and Accessible Emergency Messaging*,[15] extensive reasoning is provided as to why the provision of ASL-translated emergency messages is critical. In sum, as asserted by the above-referenced commenters, WEA messages delivered as an ASL video would allow for immediate and independent access to the message content, as opposed to having either partial understanding or relying on a friend, relative or coworker to impart the message.

People, in general, tend to verify emergency messages. In 2015, researchers at the Center for Advanced Communications Policy, under contract with the Department of Homeland Security, Science and Technology Directorate (DHS S&T), conducted a national online survey (*2015 WEA Survey*) to gain a greater understanding of how people with disabilities and those with access and functional needs respond to WEA messages. The results of the inquiry about actions taken after receiving a WEA message indicated that 45% of respondents with disabilities, and 39% of respondents without disabilities verified the alert.[16] This behavior creates a lag between receipt of the message and protective actions. For people whose primary language is ASL, the time between receipt and action may be unnecessarily lengthened

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[14] Consumer Groups, California Coalition of Agencies Serving the Deaf and Hard of Hearing (CCASDHH), and Gallaudet University RERC on Technology for the Deaf and Hard of Hearing. (2018, May 30). Comments submitted in response to FCC Public Notice, Parties Asked to Refresh the Record on Facilitating Multimedia Content in Wireless Emergency Alerts [PS Docket Nos. 15-94; 15-91]. Morgan, Lewis & Bockius LLP: Washington, D.C.

[15] Bennett, D., LaForce, S., Touzet, C., & Chiodo, K. (2018). American Sign Language & Emergency Alerts: The Relationship between Language, Disability, and Accessible Emergency Messaging. *International Journal of Mass Emergencies and Disasters, 36*(1), 71-87.

[16] Center for Advanced Communications Policy. (2015) [Wireless Emergency Alerts – measures of awareness, availability, and accessibility levels and behavioral responses] Unpublished raw data.

due to the fact that the message is in English text. Consequences of delayed action can be dire.

To address the language barrier for ASL users, the Wireless RERC is currently developing a method to improve message content comprehension by displaying IPAWS symbology with ASL-interpreted WEA messages. Previous research using the IPAWS symbology set indicated that some of the more common emergency events (Flood Warning, Hurricane Warning, Tornado Warning) were universally understood by the study participants and helped with text comprehension. Building on that early work, in partnership with Deaf Link, LLC, the recent development work resulted in an app that provides ASL interpretation of a standard WEA message by concatenating pre-recorded ASL Video clips about the nature of emergency, the time of the emergency, and the recommended protective action at the time an alert is received. Further development work that considers the inclusion of URLs in WEA messages will allow ASL interpretation of any free-form text that would be provided. This app, and other services that present ASL-interpreted messages, have the potential to reduce the lag between message receipt and protective actions for people who rely on ASL.

In closing, we look forward to continuing the dialog on the provision of multimedia content in WEA messages. Through these exchanges, we are optimistic that industry, government, academic, and consumer stakeholders will together, develop the technical, policy and practice solutions that will bring accessible multimedia WEA content to fruition.

Respectfully submitted,

S. LaForce

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Dated this 11th day of June 2018