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

6 In the Matter of)
7)
8 Wireless Emergency Alerts) PS Docket No. 15-91
9)
10 Amendments to Part 11 of the)
11 Commission’s Rules) PS Docket No. 15-94
12 Regarding the Emergency Alert System)
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Comments from the Federal Emergency Management Agency (FEMA)

19 FEMA appreciates the partnership with the Federal Communications Commission (FCC)
20 and existing efforts to implement multilingual Wireless Emergency Alerts (WEAs). FEMA is
21 required to maintain the integrity of the public alert and warning system.¹ FEMA submits these
22 comments in response to the Notice of Proposed Rulemaking in accordance with its obligation
23 under the Integrated Public Alert and Warning System Modernization Act of 2015, which
24 requires FEMA to “provide timely and effective warnings regarding natural disasters, acts of
25 terrorism, and other man-made disasters or threats to public safety” and “modernize the
26 integrated public alert and warning system of the United States.”² The Act further charges
27 FEMA with “[adopting], as appropriate ... standards, terminology, and operating procedures for
28 the public alert and warning system” and states that FEMA shall “consult and coordinate with
29 the Federal Communications Commission, taking into account rules and regulations promulgated

¹ 6 U.S.C. §321o-1 – Integrated public alert and warning system (2022).
² Public Law 114–143 Section.

30 by the Federal Communications Commission.”³ FEMA is also responsible for providing
31 guidance on the categories of public emergencies that warrant an alert.⁴

32 **Discussion**

33 FEMA supports the FCC’s initiative to create a framework that allows WEAs to be
34 disseminated in multiple languages to promote advances in diversity, equity, inclusion, and
35 accessibility. The first goal of FEMA’s 2022-2026 Strategic Plan is to instill equity as a
36 foundation of emergency management. FEMA recognizes that disasters affect individuals and
37 communities differently and commits to reducing barriers to access and delivering equitable
38 outcomes for all we serve.⁵ FEMA supports the FCC’s effort to expand WEAs to communities
39 that speak languages other than English or Spanish and to those with disabilities.

40 **Regarding the FCC request for comment on “The proposed templates in Appendix C.”**

41 FEMA recommends consideration of additional message content, as appropriate, in the
42 Appendix C templates. FEMA commissioned the Research Foundation for the State University
43 of New York at Albany to conduct research on risk communication and behavioral science. This
44 research determined that hazard information, location, time, source, and guidance information
45 increases message recipients’ understanding, belief, and personalization and improves (public)
46 protective action decision-making.⁶ As a result, FEMA released the Message Design Dashboard
47 (MDD) in 2024 to assist Alerting Authorities (AAs) in the creation of effective alerts. The MDD

³ Public Law 114–143 Section.

⁴ Public Law 116-92 Section 1756.

⁵ FEMA Strategic Plan 2022-2026 pg. 3.

⁶ Sutton, J., & Kuligowski, E. D. (2019). Alerts and warnings on short messaging channels: Guidance from an expert panel process. *Natural Hazards Review*, 20(2). [https://doi.org/10.1061/\(asce\)nh.1527-6996.0000324](https://doi.org/10.1061/(asce)nh.1527-6996.0000324) 5.

48 is a guided template-based tool created from findings in The Warning Lexicon.⁷ The Warning
49 Lexicon stated that “a common set of statements about hazard impacts and their associated
50 recommended protective actions that can be used to quickly write effective warning message
51 contents.” FEMA will work with the FCC to brief the MDD and Lexicon Report in order to help
52 inform the crafting of templates or modifications to the Dashboard.

53 FEMA looks forward to working with the FCC, industry partners, AAs, and the affected
54 communities on the content of the templates in Appendix C to help ensure recipients take the
55 necessary protective actions regardless of event. FEMA recommends that AAs be included in the
56 development of templates.

57 **Regarding the FCC request for comment on “The specific text used in the templates, as
58 well as their translations.”**

59 FEMA noted that the length of messages on templates stored on the device can be
60 unlimited (longer than the 360-character limit for WEA). We recommend conducting additional
61 research on the impact of receiving both 360 and unlimited-character messages. FEMA looks
62 forward to partnering with the FCC on a proof-of-concept for the use of additional characters to
63 ensure system compatibility, as well as to validate message accuracy and effectiveness and other
64 additional benefits to the public. FEMA looks forward to working with the FCC, experts in the
65 academic community, AAs, mobile carriers, mobile phone manufacturers and the public.

66 **Regarding the FCC request for comment on “Whether multilingual templates should be
67 displayed on their own or accompanied by the English-language version of the alert.”**

⁷ Jeannette Sutton, Michele K. Olson, Nicholas A. Waugh, October 2023, *The Warning Lexicon: A Multiphased Study to Identify, Design, and Develop Content for Warning Messages*, Publication: Natural Hazards Review Volume 25, Issue 1

68 How the public would respond to the English-language message accompanying a
69 template in another language is currently unknown. FEMA recommends further assessing the
70 need for an English-language version of the alert to accompany the translated message by
71 conducting research in collaboration with FEMA, experts in the academic community,
72 emergency managers, industry partners, and the public. Findings in future research will better
73 determine whether multilingual templates should be displayed on their own or accompanied by
74 the English-language version of the alert any significant impacts that may result. We also
75 recommend that the FCC, in collaboration with FEMA, consult with a cross-section of AAs,
76 behavioral scientists, mobile carriers, mobile phone manufacturers, and other industry partners
77 who have experience with multilingual communities who can provide expertise on the
78 effectiveness of different alert messaging practices.

79 **Regarding the FCC request for comment on “Whether templates can be customizable to**
80 **include event-specific information. We seek comment on whether this is feasible.”**

81 FEMA recommends additional research on the potential benefits of including event-
82 specific information in customizable templates. We understand the importance of customizing
83 the templates to include event-specific information because no two events are identical. Research
84 shows that when people receive specific characteristics of event-specific information, their
85 protective action decision-making is faster and improved, resulting in more time to take
86 protective action.⁸ During seismic-related events, due to the unpredictability and speed of the
87 event, there may be only seconds of lead time to provide life-preserving instructions.⁹ FEMA has

⁸ Olson, M. K., Sutton, J., Cain, L. B., & Waugh, N. (2023). A Decade of Wireless Emergency Alerts: A Longitudinal Assessment of Message Content and Completeness. *Journal of Contingencies and Crisis Management*, 5.

⁹ McBride, S. K., Smith, H., Morgoch, M., Sumy, D., Jenkins, M., Peek, L., Bostrom, A., Baldwin, D., Reddy, E., de Groot, R., Becker, J., Johnston, D., & Wood, M. (2022). Evidence-based guidelines for protective actions and earthquake early warning systems. *Geophysics*, 87, 79-80.

88 not collected sufficient data to show that there are meaningful benefits of delaying a message by
89 modifying it to input event-specific information instead of immediately sending an alert.
90 Whether the person sending the alert (Alert Originator (AO)) should modify the alert, even if it
91 impacts the time it takes to send the alert, depends on the circumstances of each event. FEMA
92 would welcome working with the FCC, AOs, and other partners to further research the
93 implications of customizable templates.

94 **Regarding the FCC request for comment on “The incorporation of four fillable elements:**
95 **Sending Agency, Area Affected, Expiration Time, and (if desired) a URL.”**

96 FEMA seeks further clarification from the FCC on this request for comment. FEMA
97 would like to work with the FCC to better understand how these four fillable elements would be
98 input into the message template in English or if they would be translated into the template
99 language, and if they were to be translated, where would that translation occur. We recommend
100 that the FCC, in collaboration with FEMA, consult with a cross-section of AAs, AOs, behavioral
101 scientists, mobile carriers, mobile phone manufacturers, and other industry partners on this issue
102 to assess the effectiveness and feasibility of implementation. FEMA raises for awareness that
103 such a change will take time and training. As well as technical requirements for mobile carriers
104 and mobile phone manufacturers to test and implement this function. This process will need to
105 ensure that the alerts are filled in properly, transition smoothly through the Integrated Public
106 Alert and Warning System (IPAWS) aggregator, integrate with existing templates on the device,
107 and are translated accurately on the device that the public will see. This process would also have
108 to include those assistive technologies and tools used for the Access and Functional Needs
109 community and those with limited English proficiency.

110 FEMA also notes that this approach may require new development, end-to-end testing,
111 alert origination software changes, training for AAs and AOs, and significant operational
112 changes, to include potential changes to the IPAWS Specification to the Common Alerting
113 Protocol (CAP).¹⁰

114 **Regarding the FCC request for comment on “On the implementation of ASL Templates.”**

115 We support this effort and recommend that the FCC, in collaboration with FEMA,
116 partner with members of the American Sign Language (ASL) community to find effective and
117 equitable alerting solutions. This is an opportunity to work with the community early in
118 developing and implementing effective multilingual WEAs. FEMA values the FCC’s effort to
119 address the needs of those best served by receiving ASL alerts. FEMA defers to any comments
120 submitted by representatives of the ASL community that they may submit in response to this
121 Notice.

122 **Regarding the FCC request for comment on “The benefits of allowing customization of**
123 **multilingual alerts by leveraging form-fillable templates.”**

124 FEMA appreciates the FCC’s desire to consider form-fillable templates. As we
125 understand, this approach would complement the proposed templates in Appendix C, allowing
126 local authorities to have a fillable template when the existing templates no longer meet the need
127 and changes are required to adapt to real-world events. We recommend that the FCC partner with
128 FEMA, AOs, and industry partners to mitigate the potential risks of having multiple languages,
129 associated dialects, and custom templates in the Alert, Warning, and Notification (AWN)
130 ecosystem. Additionally, we seek clarification on the deciding body to approve a fillable

¹⁰ [CAP v1.2 Integrated Public Alert and Warning System Profile v1.0 CS01, 13 October 2009](#)

131 template change, management of these forms, standardization of specific message content, and
132 the frequency and responsibility of updating the form-fillable templates before, during, and after
133 implementation.

134 **Regarding the FCC request for comment “On the benefits of fillable templates and cost of**
135 **implementing fillable templates.”**

136 FEMA currently does not have enough data to determine the benefits or costs of fillable
137 templates. We have focused on how artificial intelligence (AI) and machine learning (ML) can
138 be used to translate alerts from English to other languages since the accuracy of the translation
139 requires human intervention and an inaccurate translation may seriously misinform WEA
140 recipients during an emergency.¹¹

141 We invite the FCC to partner with FEMA and the National Weather Service (NWS) on
142 ongoing AI and ML research to explore viable future opportunities for automated language
143 translation. FEMA is working closely with Department of Homeland Security (DHS) Science
144 and Technology (S&T) to research whether AI and ML are viable technologies for sending
145 AWNs in the upcoming year. A FEMA and DHS S&T meeting held in May of 2024 indicated
146 that the promise of these technologies in the next three to four (3-4) years, with or without
147 human intervention, could significantly improve alert and warning.

148 FEMA recommends an incremental approach to implementing multilingual WEA. The
149 first step is to develop a set of requirements, then use these requirements to determine the most
150 efficient approach on a subset of the 13 languages (i.e., three of the most used languages based
151 on census data), review the templates in Appendix C, develop solutions in a sandbox
152 environment, conduct a proof of concept and end to end testing, and when all requirements have

¹¹ [wea-fcc-multistate-letter.pdf \(ny.gov\)](#)

153 been met, field the capability. A phased approach will mitigate the risk of implementing all
154 languages at once and allow advancements in AI and ML to be integrated at a later date. FEMA
155 looks forward to partnering with the FCC, DHS S&T, and NWS on AI and ML research in the
156 months ahead.

157 FEMA believes that, given the challenges involved in implementation, the FCC's
158 proposed 36-month window could be delayed unless a phased approach is adopted for
159 incremental fielding of the capability to incorporate proven principles of experience and research
160 on responses to AWNs, systems and software engineering, and adopting new capabilities. FEMA
161 looks forward to working with the FCC, emergency managers, AAs, AOs, mobile carriers,
162 mobile phone manufacturers, communities of interest, and the public to move quickly while
163 mitigating any risks identified during this comment period.

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