U.S. Department of Homeland Security

United States Coast Guard

Before the
Federal Communications Commission
Washington, DC 20554

In the matter of	**)**	**PS Docket No. 15-91**
	)	
Improving Wireless Emergency Alerts and Community-Initiated Alerting	**)**	
	)	

To: The Commission

The United States Coast Guard, pursuant to Section 1.415 of the FCC's Rules, 47 C.F.R. § 415, hereby submits these Comments in the above-referenced Notice of Proposed Rulemaking (NPRM) proceeding. *See Federal Communications Commission, Improving Wireless Emergency Alerts and Community-Initiated Alerting*, 80 Fed. Reg. 77289 (Dec. 14, 2015).

At the outset, the Coast Guard wishes to commend the Federal Communications Commission for its efforts in creating a successful Wireless Emergency Alert program, based essentially on voluntary cooperation from the nation's wireless carriers. A program that received substantial resistance not too long ago from some quarters is now widely seen as an enormous success, one that serves an important public safety function at essentially no cost to consumers. The FCC's efforts in this rulemaking proceeding to build upon and improve the current WEA program should be encouraged and supported by a wide range of public safety entities.

The Coast Guard thanks the FCC for inviting it to comment in this proceeding, and to share the Coast Guard's views on how the Nation's emergency maritime communications networks might work together with the WEA. While no decisions have been made as to whether

the Coast Guard will participate in the WEA program, as an "alert originator" or in some other capacity, these comments are submitted in the broader interests of promoting public safety services that are likely to safeguard lives and property during emergencies.

I. Background and Statement of Interest

A. The United States Coast Guard: Its History and Mission

The United States Coast Guard is one of the five branches of the United States Armed Forces. The Coast Guard is a maritime, military, multi-mission service unique among the U.S. military branches for having a maritime law enforcement mission (with jurisdiction in both domestic and international waters) and federal regulatory agency statutory obligations. The Coast Guard operates under the U.S. Department of Homeland Security during peacetime, and can be under the supervision of the U.S. Department of the Navy during times of war.

Created by Congress in 1790 at the request of Alexander Hamilton as the "Revenue Marine," the Coast Guard is the oldest continuous seagoing service of the United States. As Secretary of the Treasury, Hamilton headed the Revenue Marine, whose original purpose was as the collector of customs duties in the nation's seaports.

The modern Coast Guard was formed by a merger of the Revenue Cutter Service and the U.S. Life-Saving Service in 1915, under the U.S. Department of the Treasury. As of 2015, the Coast Guard had approximately 40,000 men and women on active duty, 7,400 reservists, 30,000 auxiliary, and 7,000 full-time civilian employees. In terms of overall size, the Coast Guard by itself is the world's 12th largest naval force.

The Coast Guard's legal authority differs from the other four armed services, as it operates simultaneously under Title 10 of the U.S. Code and other statutory authorities, such as Titles 6, 14, 19, 33, and 46. Because of its legal authority, the Coast Guard can conduct military

operations under the U.S. Department of Defense or directly for the President in accordance with Title 14 U.S.C. §§1–3. The Coast Guard's enduring roles are maritime safety, security, and stewardship, all of which are implicated to some extent in this FCC rulemaking proceeding. To carry out those roles the Coast Guard has 11 statutory missions as defined in 6 U.S.C. § 468, which include enforcing U.S. law in the world's largest exclusive economic zone of 3.4 million square miles (8,800,000 km). The Coast Guard's motto is the Latin phrase, *Semper Paratus* (Always Ready), which succinctly states the overall mission of the Coast Guard.

Search and Rescue (SAR) is one of the Coast Guard's oldest missions. Minimizing the loss of life, injury, property damage or loss by rendering aid to persons in distress and property in the maritime environment has always been a Coast Guard priority. Coast Guard SAR response involves multi-mission stations, cutters, aircraft and boats linked by extensive communications networks. The National SAR Plan divides the U.S. area of SAR responsibility into internationally recognized inland and maritime SAR regions. The Coast Guard is the Maritime SAR Coordinator. To meet this responsibility, the Coast Guard maintains SAR facilities on the East, West and Gulf coasts; in Alaska, Hawaii, Guam, and Puerto Rico, as well as on the Great Lakes and inland U.S. waterways. The Coast Guard is recognized worldwide as a leader in the field of search and rescue.

B. Coast Guard and Emergency Maritime Communications

Being able to communicate with, and obtain the accurate location of, a mariner in distress is critical to search and rescue on the water. Traditionally, in an emergency situation the mariner has called, “MAYDAY, MAYDAY, MAYDAY”, typically on Channel 16 using a Very High Frequency – Frequency Modulation (VHF-FM) radio and passed their position along with other pertinent information. Not only does this enable direct communication with the Coast

Guard, it broadcasts the emergency so that it can be heard by other boaters in the area who may be in a position to render immediate aide.

Additionally, the Coast Guard is now capable of better positioning Channel 16 distress callers with the widespread deployment of its Rescue 21 system. Rescue 21, the Coast Guard's advanced command, control and direction-finding communications system, was created to better locate mariners in distress and save lives and property at sea and on navigable rivers. By harnessing state-of-the-market technology, Rescue 21 enables the Coast Guard to execute its search and rescue missions with greater agility and efficiency. Rescue 21 can more accurately identify the location of callers in distress via towers that generate lines of bearing to the source of VHF radio transmissions, thereby significantly reducing search time. Rescue 21 extends coverage out to a minimum of 20 nautical miles from the coastline. It improves information sharing and coordination with the Department of Homeland Security and other federal, state and local first responders, and can also identify suspected hoax calls, conserving valuable response resources.

The Coast Guard and other government agencies broadcast different kinds of maritime safety warnings, using a variety of different radio systems to ensure coverage of different ocean areas for which the United States has responsibility, and to ensure all ships of every size and nationality can receive this safety information. All broadcasts, except those over VHF and HF radiotelephone, are made by computer.

Urgent Marine Informational Broadcasts (UMIB) and weather information are regularly broadcast over VHF channel 22A (157.1 MHz) from over 200 sites covering the coastal areas of the U.S., including the Great Lakes, major inland waterways, Puerto Rico, Alaska, Hawaii and Guam. These broadcasts are first announced over the distress, safety and calling channel

16 before they are made. All ships in U.S. waters over 20 meters in length are required to monitor VHF channel 16, and must have radios capable of tuning to the VHF simplex channel 22A.

C. Coast Guard Alert Warning System

The Coast Guard deployed an enterprise-wide solution to provide Coast Guard units the means to send alerts and warnings to Coast Guard members – active duty, reserve and civilian - in a quick and efficient manner. The tool, previously used by the Coast Guard in a limited capacity, is referred to as the Alert Warning System. AWS has some analogies to the nationwide Wireless Emergency Alert (WEA) system that is the subject of this *NPRM*. Moreover, it is possible that some aspects of the Coast Guard's AWS alerts could be usefully integrated into the WEA.

AWS is a commercial product with a robust mass notification capability. It is an approved and accredited system which allows Coast Guard members to receive alerts *via* multiple devices which include email, text messaging, phone, pager and fax. It is a proven system used by the U.S. Navy, U.S. Air Force, Department of Veteran Affairs, Customs and Border Protection and the Transportation Security Administration to name a few. The Coast Guard has been using this alert system in a limited capacity since 2009 as a means to transmit maritime security notifications and receive confirmations from maritime security port partners and other stakeholders as required by the Maritime Transportation Security Act of 2002. It is also authorized for dissemination of Marine Transportation System recovery information, small vessel security awareness and outreach and industry notification and outreach. Examples of this include the Area Maritime Security Committees and the National Maritime Security Advisory

Committee. The use of AWS by the Coast Guard for this purpose is referred to as AWS-Port Partner.

Due to its success, the Coast Guard also adopted AWS in 2012 as the alert notification system integrated within the Coast Guard Personnel Accountability and Assessment System (CGPAAS). CGPAAS is strictly employed for personnel accountability. It is the Coast Guard's approved system for this use and therefore is used during significant events including natural disasters and terrorist incidents. AWS was used for the 57th Presidential Inauguration and the 2013 State of the Union Address. AWS is an emergency alert tool that not only saves Coast Guard members' time but it can further enhance their safety and security.

D. Ports and Waterways Safety System

The Coast Guard has a statutory responsibility under the Ports and Waterways Safety Act of 1972 (PWSA), Title 33 USC §1221, to ensure the safety and environmental protection of U.S. ports and waterways. The PWSA authorizes the Coast Guard to "establish, operate and maintain vessel traffic services in ports and waterways subject to congestion." It also authorizes the Coast Guard to require the carriage of electronic devices necessary for participation in the VTS system. The purpose of the act was to establish good order and predictability on United States waterways by implementing fundamental waterways management practices. In 1996 the U.S. Congress required the Coast Guard to begin an analysis of future VTS system requirements. Congress specifically directed the Coast Guard to revisit the VTS program and focus on user involvement, meeting minimum safety needs, using affordable systems, using off-the-shelf technology, and exploring public-private partnership opportunities. The Coast Guard's Ports and Waterways Safety System (PAWSS) project was established to meet these goals.

PAWSS is a major project to build new Vessel Traffic Services where necessary and replace existing systems. It is also a process that reaches out to port stakeholders to comprehensively assess safety and identify needed corrective actions. The PAWSS Vessel Traffic Service (VTS) project is a national transportation system that collects, processes, and disseminates information on the marine operating environment and maritime vessel traffic in major U.S. ports and waterways. The PAWSS VTS mission is monitoring and assessing vessel movements within a Vessel Traffic Service Area, exchanging information regarding vessel movements with vessel and shore-based personnel, and providing advisories to vessel masters.

The VTS system at each port has a Vessel Traffic Center that receives vessel movement data from the Automatic Identification System (AIS), surveillance sensors, other sources, or directly from vessels. Meteorological and hydrographic data is also received at the vessel traffic center and disseminated as needed. A major goal of the PAWSS VTS is to use AIS and other technologies that enable information gathering and dissemination in ways that add no additional operational burden to the mariner. The VTS adds value, improves safety and efficiency, but is not laborious to vessel operators.

AIS technology relies upon global navigational positioning systems (GPS), navigation sensors, and digital communication equipment operating according to standardized protocols (AIS transponders) that permit the voiceless exchange of navigation information between vessels and shore-side vessel traffic centers. AIS transponders can broadcast vessel information such as name or call sign, dimensions, type, GPS position, course, speed, and navigation status. This information is continually updated and received by all AIS-equipped vessels in its vicinity. An AIS-based VTS reduces the need for voice interactions, enhances mariners' ability to navigate,

improves their situational awareness, and assists them in the performance of their duties thus reducing the risk of collisions.

II. Proposed WEA Rule Revisions

In its *NPRM*, the FCC has proposed regulatory changes for the WEA system that fall into three categories: (1) improving the effectiveness of WEA message content by, in part, increasing the character length of WEA messages; (2) improving "geo-targeting," and (3) standardized testing and proficiency training. The Coast Guard will comment on each of these proposals from its perspective as a potential sender and user of WEA alerts.

A. Expanding WEA Messages

With respect to WEA messaging, the FCC has proposed to expand the maximum character length of messages from 90 to 360 characters. The FCC has also proposed creating a new class of WEA alerts (Emergency Government Information) to provide an additional mechanism for critical communications between alert originators and their communities. The FCC also proposes removing the prohibition on embedded references to allow the provision of phone numbers and URLs in WEA messages.

1. Expansion of Message Character Length

From the Coast Guard's perspective, the proposed 360 character limit should suffice for most emergency messages. Perhaps the closest analogy to WEA for the maritime sector would be the NAVTEX system. The International Maritime Organization has designated NAVTEX as the primary means for transmitting coastal urgent marine safety information to ships worldwide. In the United States, NAVTEX is broadcast from Coast Guard facilities in Cape Cod, Chesapeake VA, Savannah GA, Miami FL, New Orleans LA, San Juan PR, Cambria CA, Pt.

Reyes CA, Astoria OR, Kodiak AK, Honolulu HI, and Guam. NAVTEX coverage is reasonably continuous in the east, west and Gulf coasts of the United States, as well as the area around Kodiak, Alaska, Guam and Puerto Rico. The U.S. has no coverage in the Great Lakes, though coverage of much of the Lakes is provided by the Canadian Coast Guard.

Although WEA alerts, regardless of character length, would obviously be limited to the range of the terrestrial networks operated by participating Commercial Mobile Radio operators (with typical signal range no more than 10 miles off-shore), those networks could certainly complement the geographic coverage offered by the NAVTEX system. From the Coast Guard's perspective, a 360 character emergency message should be able to cover most of the text that would typically sent by a standardized NAVTEX message. NAVTEX messages are preceded by a four character header. The first character is an alphabetic code that identifies the station that is originating the emergency alert. The second alpha character is used to identify the subject of the message. Receivers use these characters to reject messages from stations or concerning subjects of no interest to the user. The third and fourth characters in the message header are numbers used by receivers to keep already received messages from being repeated. For example, a message preceded by the characters "FE01" means that it is from the Boston, MA NAVTEX Station and that this is a weather forecast message.

Because NAVTEX messages are inherently efficient, while conveying essential emergency information, the FCC's proposal to adopt a new 360 character limit should suffice. Should the Coast Guard at some point in the future become an alert originator, by either integrating NAVTEX messages into the nationwide WEA, or by originating other emergency maritime alerts, the Coast Guard has considerable experience in delivering data-efficient and

spectrum-efficient emergency alerts. The Coast Guard will continue to work with the FCC to explore how existing maritime emergency alert systems might benefit from the WEA program.

2. Emergency Government Information

The FCC has proposed adding a new category of emergency information, "Emergency Government Information," to the existing three categories (Presidential Alerts, Imminent Threat Alerts and AMBER Alerts). The proposed definition for this new category would be: "an essential public safety advisory that prescribes one or more actions likely to save lives and/or safeguard property during an emergency." *NPRM* at ¶ 17.

While the Coast Guard has made no determination as to whether or when it might participate in the WEA, it agrees with the general concept of creating this new category of emergency information. Indeed, the FCC's proposed definition essentially defines the Coast Guard's central role in emergency maritime communications.

It is not difficult to envision many advantages that might take place if the WEA program were to be integrated in some fashion into the Coast Guard's maritime warning services. Coast Guard-originated weather alerts, search and rescue warnings and other emergency alerts concerning maritime incidents, such as UMIB transmissions, could be rapidly distributed not only over the existing VHF/marine radio and maritime networks, they could be simultaneously transmitted over the WEA to thousands of cellphones used by mariners. The ability of cellphone users to store and forward these critical messages will enhance the utility of the Coast Guard's emergency messages.

Additional research will need to be undertaken to determine how and to what extent the Coast Guard could participate in the WEA as an alert originator and as a recipient of emergency alert and emergency government information. An assessment of costs and technical

requirements would obviously be essential and preliminary to any further consideration of how the Coast Guard might participate in the WEA. Nevertheless, given the ubiquitous and growing use of cell phones aboard recreational and commercial vessels, it makes sense for the Coast Guard to work closely with the FCC to continue exploring these public safety possibilities.

3. Embedded References/URLs

The FCC has proposed lifting the current prohibition on embedded references (URLs, telephone numbers) in emergency messages. The FCC's current view is that there may be advantages to "provid[ing] … an immediately accessible method of contacting public safety officials or finding additional information about emergency situations …." *NPRM* at ¶ 25.

It is not evident that the inclusion of URLs or other embedded references are likely to be of assistance to the public in an emergency situation. For instance, in emergency weather situations, often the local cellular radiotelephone network is under extreme duress, both externally from downed towers or power outages, and internally due to high traffic volumes over the network. In this situation, the government should not be encouraging the public to impose more stress on the network by using their cell phones to try to access web-sites or embedded phone numbers.

Moreover, basic cyber-awareness and cybersecurity practices routinely inform consumers to never click on a hyperlink. Notwithstanding the fact that WEA messages "should" be initiated only by authorized government entities, it is entirely possible that someone could send the equivalent of a "phishing" message, disguised to look like an official emergency alert, intending to get unsuspecting users to click on a harmful hyperlink. Hence, from a cybersecurity perspective, the inclusion of hyperlinks in emergency messages is probably not a good idea. In addition, with a significant percentage of the wireless market still using 2G phones, and for the

many smartphone customers who do not use their cellphones for Internet access so as to avoid monthly data charges, the inclusion of embedded hyperlinks in WEA messages will be of no practical value.

In the Coast Guard's experience, what mariners need in emergency situations is short, discernible and usable emergency information that can be remembered or stored in a readily-available medium. This way, if even further damage occurs to available communications networks, the public will at least have received prompt information upon which they can immediately act, without having to contact public safety officials, to promote safety of life and property. In addition, the use of embedded graphical information, such as maps and photos, may prove to be of critical assistance in emergencies. While this type of information will obviously be more data-intensive than text messages alone, the increased load on the network from these graphic messages will be of short duration and can provide lasting, critical assistance in emergency situations that can be referenced even if the network were to become unusable .

4. Multi-lingual WEA Messages

For now, CMS operators are not required to transmit emergency messages in languages other than English. The FCC is seeking comments on whether it is now technically feasible and advisable to transmit WEA messages in multiple languages.

As indicated above, the Coast Guard's view is that the use of graphic information (maps, photos, charts) may provide essential information when incorporated into emergency alert messages. Moreover, this type of information is inherently language-neutral. Mobile carriers/message providers would not have to contend with language translations in an emergency when using graphical data, nor would there be a concern that a lesser-used language might be overlooked in any given community in the event of an emergency.

B. Geo-Targeting

The FCC has asked for comments on whether its existing geographic-targeting requirements for WEA messages, which generally specify a target area no larger than a County, should be "more finely targeted." *See NPRM* at ¶¶ 34-35; *compare with* 47 C.F.R. § 10.450. In pertinent part, this regulation now states as follows: "A Participating CMS Provider must transmit any Alert Message that is specified by a geocode, circle or polygon to an area not larger than the provider's approximation of coverage for the Counties or County Equivalents with which that geocode, circle, or polygon intersects."

The Coast Guard's experience with emergency messaging is likely to differ from the views that have led the FCC to consider requiring a more narrowly targeted geographic area for WEA messages. For instance, maritime traffic tends to congregate around major ports and docks, rather than around population centers such as cities and towns. For obvious reasons, maritime traffic also congregates along shorelines and coastal areas, which are not contiguous with county boundaries in many cases. Consequently, the Coast Guard wishes to make clear that should it elect to participate in the WEA as an Alert Originator, maritime alert coverage areas might be substantially different from county or county equivalent borders. The FCC should be careful not to adopt regulations that are not flexible enough to accommodate unique coverage areas, such as those associated with U.S. navigable waters. Alert Originators, FEMA, and the CMS Providers that deliver these messages should be allowed flexibility to work together to adopt appropriate "geocodes" that make sense for particular categories or types of emergency alerts, such as maritime messages.

This is not to suggest that CMS operators should not be allowed to develop technologies and practices that might allow them to more accurately target WEA messages for their intended

public audience. But, at the same time that CMS operators work on refining the geographic accuracy of emergency messaging, there should be some caution that the FCC's regulations not be so narrowly drawn as to impose overly strict technical requirements that might not make practical sense for all situations. As it currently stands, the FCC's "opt out" requirement allows consumers to decide whether they wish to receive WEA alerts on a regular basis or not; this type of self-selection may be more effective than attempting to define more precise coverage areas on a nationwide basis. For its part, should the Coast Guard participate in the WEA program as an alert originator or a receiver of WEA messages, the Coast Guard itself will need to work with the CMS operators to ensure that maritime emergency messages are delivered to the most appropriate geographic areas, using jointly determined technical criteria, where they are most likely to reach the widest possible number of affected mariners who will need this information.

C. WEA Testing & Proficiency Training

In general terms, the FCC seeks comment on whether and how it should extend WEA testing and "proficiency requirements" to state and local governments and to other "alert originators." *NPRM* at ¶¶ 43-44.

Because it has not to date actively participated in the WEA program, the Coast Guard is not well-positioned to comment on specific aspects of the FCC's testing and training proposals. For its part, the Coast Guard obviously has extensive, decades-long experience with sending and receiving emergency communications under extremely trying circumstances. Moreover, as a nationwide and internationally-based safety organization, the Coast Guard's message requirements are unlike those of any state or local government, indeed, they are unlike the requirements of many federal entities that participate in the WEA program.

That said, training and preparedness are absolutely central to the Coast Guard's multi-faceted mission of protecting lives and property. Hence, in general terms the Coast Guard supports the concept of ensuring that any entity that elects to participate in the WEA program should have some basic levels of training, proficiency and established need. For its part, prior to participating in the WEA program, the Coast Guard would at the outset need to coordinate its efforts with fellow agencies such as NOAA, FEMA and others. The Coast Guard would benefit from the experience of these active participants in the WEA program, while ensuring that the unique needs and requirements of maritime emergency communications can be seamlessly integrated into the nationwide WEA system.

CONCLUSION

The Coast Guard supports the FCC's efforts to improve the Nation's Wireless Emergency Alert system. While a decision has not yet been made as to whether the Coast Guard would actively participate in this program, it is evident that the WEA, with appropriate modifications as indicated in these comments, could become a useful component of the Nation's maritime emergency and safety communications infrastructure. The Coast Guard looks forward to continuing to work with the FCC and other relevant federal agencies on these matters.

Respectfully submitted,

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