TOPIC:

Using Non-Governmental Organizations' (NGO's)[1] messaging capabilities to address the Federal Emergency Management Agency's (FEMA's) IPAWS[2] Strategic Plan (2022a) Challenge 1.3, Objective 2.2 and Objective 3.4.

OBJECTIVE:

Document best practices for delivering disaster information to vulnerable populations in their preferred language and accessible method.

IDEAL READER:

FEMA IPAWS/ WEA[3] leadership, paratransit and NGO leaders and communications staff, local government emergency management leaders, and public information staff who are charged with delivering crisis messaging to the whole community, especially vulnerable populations[4] and underserved communities.

High-Level Problem:

Federal government systems for delivering crisis messaging that are used by local governments—Integrated Public Alerting and Warning System (IPAWS) and Wireless Emergency Alerts (WEA)—have limitations that leave vulnerable community members out of the reach of official messages. In its 2022-2026 IPAWS Strategic Plan, FEMA (2022a) has acknowledged the need to improve IPAWS and WEA capabilities in serving vulnerable populations with equity (Challenge 1.3). In fast moving, constantly changing events like floods and wildland urban interface fires, it is especially important for information about when and how to leave, and where to go be delivered equitably, using culturally competent, language-specific and access and functional-needs sensitive methods.

High-Level Solution:

Because NGOs are trusted sources that deliver services to vulnerable populations in non-disaster times, they can serve as a crisis messaging resource during disasters (Waniak-Michalak & Perica, 2021).

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1   Non-Governmental Organizations (NGOs) include not for profit organizations, faith-based groups, neighborhood associations, civic clubs and similar organizations.
2   Integrated Public Alerting and Warning System
3   Wireless Emergency Alerts
4   FEMA defines vulnerable populations as people living with disability, limited English proficiency, age economic status or other protected status. (FEMA. 2023.)

FEMA's IPAWS Strategic Plan 2022-2026 acknowledges the need for greater equity in messaging, as listed in Challenge 1.3. In Goal 3, Objective 3.2, they acknowledge that technology will have to be developed to support greater equity in service delivery to vulnerable populations. Goal 3, Objective 3.4 specifically addresses "facilitating the alerting community's multilingual capabilities and in enabling individuals with disabilities in understanding the English language" (FEMA, 2022a, p. 11). NGOs as trusted sources (Global Report, 2022, Independent Sector, 2022) can be partners in these solutions, and contribute to the achievement of Goal 2, Objective 2.2, "Support and facilitate partnership building at a local level (e.g., provide best practices and guidance on local public alerting program development, etc.)" (FEMA, 2022a, p. 9).

Problems:

1. Trust in government is at a low ebb, causing many people to question the motives of government agencies, the reliability of their information, and the wisdom of following government information (Edwards, et al., 2022, Global Report, 2022). Conversely, NGOs have greater levels of trust among the community (Independent Sector, 2022, Global Report, 2022).

2. Official crisis notification systems like IPAWS and WEA have formats that only deliver the message in one language, using a maximum of 360 characters, limiting detailed explanations and instructions.

3. When English-only digital alerting systems are used, community members with hearing and vision limitations, with limited English skills, with access needs, and with literacy challenges in any language may all be left with inadequate information to respond safely in a crisis.

4. Public alerting and warning systems need to develop effective operating procedures to ensure the most efficient use of the messaging capability.

PATH FORWARD

Emergency managers and NGO leaders can collaborate to resolve some of the problems posed by public alerting and warning in heterogenous communities. Staff charged with addressing these messaging problems need to understand best practices and current challenges in crisis communication. Messages must be crafted and transmitted to engender actions in response to crisis response directions, like evacuations. Studies of the importance of crisis communications have been conducted by multiple experts, who have acknowledged the challenges faced by emergency managers (Haupt, 2021) and the beneficial roles that non-profits can play (Haupt and Azevedo, 2021).

The Role of Trust

Results from a 2021 survey of 39,000 people have shown that trust in government has fallen across 28 nations, with the US, Australia and Germany having among the steepest declines. NGOs are viewed as both more ethical and more competent than government, and as "highly effective agents of positive change" (Global Report, 2022, slide 34). They are viewed as providing leadership and working well with other organizations for positive change (Global Report, 2022).

Sociologists have determined that demographics play a role in how people receive messages, including the level of trust that they place in the source. For example, the addition of social media to the methods of communicating emergency messages has shown a new demographic divide, with 50% of young adults trusting social media messaging, while only 20% of older adults trust social media. Facebook is the social media of choice for people over 65 years old (50%), while only 32% of teens use that platform. Twitter and Instagram are used by broad demographics, and are often the social media of choice for public agencies, as well as NGOs. Teens prefer YouTube (95%) and TikTok (67%), a platform that has been banned in various countries (Sheach, 2023), suspected of collecting intelligence on its users for Chinese government sources (Maheshwari & Holpuch, 2023).

One method for messaging success is to collaborate with the intended audience to create the posts. NGOs' volunteers frequently include members of the groups that they serve, including vulnerable populations. The NGO staff and volunteers serving vulnerable populations have culturally competent language capabilities, understand which media platforms and outlets that most appeal to specific communities, and know which hazards pose the greatest challenges to the groups being served. Combining the trust level enjoyed by the NGOs with the cultural competency of their staff members and volunteers can result in highly effective messaging that engenders action by the intended audience.

Solving the One Language Message Delivery Problem

Federal crisis notification systems like IPAWS and WEA have formats that only deliver the message in one language (English), using a maximum of 360 characters, limiting detailed explanations and instructions. Some local governments are using proprietary messaging services like Everbridge and Rave instead of IPAWS/WEA to provide more targeted messaging to the community, but the systems are dependent on the internet. Since message recipients may only register for information from up to five zip codes, NGOs that provide assistance during emergencies cannot be notified about every emergency event within their service area using just the standard messaging protocols.

Governments need to disseminate actionable information to the appropriate receivers rapidly during fast-moving, dynamic events like wildland-urban interface fires, floods, hazardous materials events, and hurricanes. They do this using landline and cell phones, email, text messages and social media (FEMA, 2022a). IPAWS and WEA also use radio, television, NOAA weather radio, cell phones and internet-based systems (FEMA, 2021). As Kelly (2014) has noted, "Social media has unique qualities that increase the reach of important risk and crisis messaging, and complement a messaging delivered through traditional information outlets" (p. 51). However, White (2012) cautions that the reliability and accuracy of information on social media sites can be a concern, "with too much information that [is not] quality controlled at critical life-saving times" (p. 18).

IPAWS-OPEN enables local alerting authorities to transmit messages over IPAWS systems. Locally owned alerting systems like sirens, highway signs and emergency telephone notification systems can be designed to receive alerts from IPAWS-OPEN (FEMA, 2022b). All WEA messages sent by IPAWS are displayed on the PBS WARN website (Warning Alert Response Network) (FEMA, 2022b). Local governments, local broadcasters, NGOs or other community groups could translate the relevant messages into community languages for rebroadcast or reposting.

At present, the federal government maintains the Emergency Alerting System (EAS) for disseminating critical messages on AM, FM, and satellite radio; broadcast, cable, and satellite TV; and NOAA weather

radio. Local agencies that have been registered as alerting authorities write the messages using Common Alerting Protocol (CAP) software systems. The messages go from a central federal dissemination point to the stations. The messages are written and received in English (FEMA, 2021). Federal Communications Commission (FCC) regulations should require radio and television stations to rebroadcast the EAS message in the station's primary language, to ensure that monolingual, non-English listeners will be able to understand the emergency information. However, these professional broadcasters need training on emergency management terminology, intent, and context to translate the messages effectively.

The goal of the three systems—EAS, IPAWS and WEA—is to layer the messaging so that everyone has access to at least one method, and so that most people are hearing the same consistent message over multiple methods. Sociologist Dennis Mileti created the concept of "milling" among recipients of crisis messaging (Mileti & Sorenson, 1990). Rather than acting on the first notice that they receive, he noted people tend to check with relatives, friends, neighbors, social media, radio, and television to confirm the initial message, a process called "milling.". Demographics also impact the level of trust that community members place in different media (McIuhan, 1994). By layering the messaging process, the residents of threatened communities should be able to mill rapidly through readily available sources–radio and TV, for example–hearing the same consistent message from each source, and then decide to act on the information provided (Mileti & Sorenson, 2018).

Under the 2022-2026 IPAWS Strategic Plan, FEMA makes it a priority (Challenge 1.3, Objective 3.4) to update the national system to include multiple languages on IPAWS and WEA (FEMA, 2022a). Implementation challenges will have to be overcome with new technology capabilities, since using artificial intelligence (AI) alone does not resolve the translation problems. Selecting the right words and levels of politeness for a specific community requires human intelligence. When crisis messaging is delivered in English-only verbal and digital alerting systems, community members with hearing and vision limitations, with limited English skills, with access needs, and with literacy challenges in any language may all be left with inadequate information to respond safely in a crisis. Lives depend on residents complying with emergency instructions, such as evacuation or shelter-in-place notices, but vulnerable populations may not receive and understand actionable information from EAS, IPAWS, and WEA systems currently. Executive Order (EO) 13407 requires that IPAWS and WEA messages be delivered in ways that are understandable to all people, including those with access and functional needs and without English language capability (Bush, 2006). In addition, experience has shown that having a trusted agent deliver the message also enhances the likelihood of positive responses from listeners (Bolin and Stanford, 1998).

Furthermore, researchers have demonstrated that crisis communication has to be culturally competent to be effective (Coombs, 2010; Lee, 2004; Edwards, et al., 2022). Simply using a computer to translate a message will not be effective. A human translator with knowledge of the locally used dialect of the language is needed to ensure that word selection and syntax are appropriate to the intended audience. Poorly chosen words or the wrong level of politeness may offend hearers and make them disinclined to act on the message. There is a need to create a national glossary of terms and concepts for use in emergency messaging that provides appropriate translations into major languages used by monolingual, non-English residents. English-language messaging could then be created using only the emergency terms available in the glossary to ensure that translations into other languages would be accurate. After the message is delivered,

public agencies should establish a mechanism for community feedback regarding the accuracy and acceptability of the translation that was used, with the goal of improving both the glossary and future messaging.

Solving the Inadequate Information Content Problem for Vulnerable Populations

In 2008 President Barack Obama issued Presidential Policy Directive 8 (PPD-8): National Preparedness. It incorporated the whole community into the emergency management function, noting that "government cannot go it alone" (Obama, 2008, p. 31), specifically identifying the non-governmental organizations as important partners. Researchers note that different populations have different vulnerabilities to the same disaster, different information resources, and differing levels of trust for those resources (Sheach, 2023).

Communities depend on paratransit NGOs for transportation of access and functional needs community members, and other NGOs for mass care and shelter support during evacuation emergencies like the California CZU and SCU fires of 2020 that are discussed at length in the base report (Edwards, et al., 2022). Therefore, it is important for these evacuation and transportation-related NGOs to be part of the community's communications plan. As discussed above, NGOs' clients trust messaging from them more than they trust messaging from the government. NGOs operating on a small scale, locally, may benefit from greater social trust than large organizations (Molenaers, Dewachter, and Dellepiane 2011).

Local NGOs can provide crisis preparedness guidance to their clients. For example, NGO staff members and volunteers can compile lists of contact information for trusted sources of information displayed in the languages used by their clients. They can select electronic and social media outlets with reliable information, providing the URLs, frequencies, or phone numbers to access the information. They can create accessible lists appropriate to their access and functional needs clients.

NGOs should also consider how they will communicate with their clients during a disaster. Do they have a disaster plan for their staff members and volunteers so they know whether to go to the worksite, a shelter, or some other response location? Do they have communication plans that allow their clients to contact them during disasters, especially for directions to resources? Do they maintain a social media presence or a website? Can it be accessed remotely? Do they plan to use email during the crisis? Will there be a place where clients can get government messaging translated into appropriate languages and using accessible technologies?

Local government can benefit by partnering with local NGOs across the operational area/ county and disaster response network. While Everbridge and other private alerting messages only go to registered recipients within the defined emergency area polygon, NGOs in other parts of the county will need to be notified of emergencies countywide so that they can prepare to provide services to the impacted areas of the community. For example, a paratransit NGO could access the emergency information to prepare transportation resources for the access and functional needs and senior resident community in the impacted areas. In addition, access to information about the location of emergencies anywhere in the service area is a life safety issue for NGO field resources. This countywide notification is not currently possible because the community alerting systems all limit the number of zip codes that one recipient can receive notices for—usually no more than five.

Creating an NGO notification group within the system could solve this problem, using an opt-in function to keep the notification information current.

There needs to be a place where NGOs can reference the emergency notifications that have already gone out. For example, the City of Los Altos keeps a log of its emergency messaging on its Nixle website (City of Los Altos, n.d.). If the local government posted every emergency message that they have issued to a website that all NGOs in the disaster response network could reference, the NGOs could provide resources to support populations in various parts of the county.

Currently, all WEA messages are preserved on mobile devices for 24 hours (FEMA, 2022b). Local governments could create opt-in groups allowing countywide WEA information to be delivered to NGOs, even if they are not in the cell tower service area of the primary emergency site. NGOs separate from but adjacent to the emergency site could provide important support roles when NGO volunteers in the emergency area are victims of the disaster themselves.

IPAWS and WEA only allow messages using no more than 360 characters, and community alerting software has similar message length limitations. Therefore, the alert messages need to refer people to a site with more detail that includes exact locations of hazards, and details of how to respond to the message—shelter in place, evacuate, where to find a shelter.

Currently IPAWS and WEA allow for hyperlinks that can direct users to other sites, but language barriers may exist at those sites. Ideally there should be a site providing multiple language options for the more detailed messages. NGOs have access and functional needs solutions for their clients that could be used to support such a site. One option might be for the local VOAD/COAD[5] to create a Facebook page to receive MP3s of emergency messages in multiple languages provided by NGO volunteers, and videos of ASL versions of the messages. As long as the Wi-Fi system is available, these messages could be transmitted in formats ready for posting. A relay of information technology volunteers would be needed to staff the services.

NGOs are a trusted source and can customize messages for their clients. For example, NGOs serving clients with access and functional needs might direct their clients to specific services for their population. Vulnerable populations who are unable to care for themselves are not admitted to general population shelters, but hospitals, convalescent facilities, and even other NGOs with residential facilities might be able to support clients with the need for personal assistance. If such plans were made in advance, community disaster messaging could trigger special needs resources information posted by the relevant NGOs.

Currently, the unavailability of 24/7 translation capability hinders the delivery of multiple language services. Local governments often have bilingual pay programs to encourage their employees to maintain second language skills. However, not every language group may be represented within a local government's employees. NGOs serving monolingual non-English populations could develop language resources from among their volunteers, providing a pathway for certification acceptable

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5   Voluntary Organizations Active in Disasters (VOAD) is a national group and Community Organizations Active in Disasters (COAD) is a local-level group. They are groups of NGOs that plan together for a coordinated disaster response, including planning, which organizations will lead the response for what services. For example, Goodwill might take clothing and household goods donations while Second Harvest Food Bank might accept all food and beverage donations, and another NGO might focus on crisis counseling or translation services.

to the public agencies. This would allow the operational area/county to have access to this vital resource during widespread community emergencies when multiple neighborhoods are affected.

Currently, the lack of certification of community volunteer interpreters and translators is a barrier to local government agencies providing more languages in translations and interpretations of emergency messaging. It is unclear whether this barrier is created by a concern for the government agency's liability if the translation is inaccurate, or whether it is a labor union issue, trying to maintain the demand for bilingual programs for public employees. Professional translation contractors generally take at least 24 hours to create a message, by which time the initial emergency is over and people have already responded—or not.

Another strategy for delivering emergency messaging in more languages is to create pre-made messages that just require date and time—numerical—details to be inserted. These could be scripts for websites, social media, or for use by a language speaker to make a recording. NGOs could help to achieve FEMA's IPAWS Strategic Plan 2022-2026 Objectives 2.2 and 3.4 by helping to create pre-made messages with culturally competent details, engendering more appropriate community response.

Currently, many local governments have a selection of the four or five languages most widely spoken by mono-lingual, non-English populations in their community, and offer all emergency materials in them. Larger cities often have an AI translation capability on the organization's homepage that may offer a dozen or more language versions of critical emergency messages, often requiring that at least 1% of the community's population be monolingual, non-English speakers of those languages for them to be included in the list. Languages spoken by fewer than the 1% threshold may not be translated. Cities could turn to another organization that they trust, like an NGO, that can communicate in the preferred language to enlarge the number of people able to receive alerting and warning messages in their preferred language. Since the registrar of voters for each jurisdiction recognizes the needed for materials in multiple languages for voting, that language list should be the guideline for translating emergency messages, as well.

NGOs could also help by creating a glossary of emergency management terms, showing the English and then the translation or explanation in the preferred language, like an abbreviated English to another language dictionary. The glossary could be limited to critical terms for easier use, words like "earthquake" or "evacuate." This would allow mono-lingual, non-English speakers to recognize the word when they see it and find the translation, and then act on the message.

Interpretation is quicker than translation. A bilingual speaker could use a smart phone to record the interpreted message and then have the recording posted to a social media feed or website, like What'sApp or Nextdoor. Pre-made plans for accessing the interpreters could enable NGO staff members and volunteers to act as soon as they receive a message and make the interpreted recording immediately. The recording could be sent to pre-designated public information officers of public agencies for posting.

Self-triggering of the interpreters is important because the cell phone system is typically damaged in many natural disasters, and today's "landlines" are most often voice-over internet protocol (VOIP) systems that rely on the internet, which often fails in fires and floods. The limited phone capacity

can be used to transmit the interpretation to the agreed-upon phone number, email, or website, limiting the number of contacts needed to get the message posted.

Many of the NGOs needed to help with interpretation have contracts with government agencies for the provision of day-to-day services to vulnerable populations. These existing government contracts could include a clause defining the provision of translation and interpretation services during times of disaster. Such an agreement in advance of need would enable the NGOS to plan for their participation in the emergency messaging systems.

Public Education

An important part of the language access plan is public education. Members of the various language groups need to receive education on getting to the appropriate site for the language or to receive accessible accommodation. Such recordings would address both language needs and limited literacy challenges, as well as assist people with visual impairment. Members could also be educated to register for the English community alert message, or be encouraged to buy a NOAA weather radio, and use the radio's alert tone as a "siren" to encourage them to go to the appropriate language resource, such as a radio or TV station or website. By using the initial English language community alert as the trigger, mono-lingual non-English speakers would receive the message much more quickly than waiting for multiple language translations to be broadcast by the alert system, using no more than 360 characters per message across a dozen or more languages.

Pre-made fliers in community languages should be provided to public safety personnel for door-to-door emergency notifications. These fliers could provide basic information about the type of disaster and direct the resident to social media, a website, or help line (such as 2-1-1) to receive more information in the preferred language. This would overcome the challenge of finding enough public safety bilingual staff for all the languages in a neighborhood. NGO volunteers and staff could provide translations of the messages in advance. Fliers could be designed with English and several other languages on each flier to simplify distribution.

JIS Implementation

The federal government has developed a Joint Information System (JIS) that is used in large scale and multi-agency emergency events. "Jurisdictions and organizations coordinate and integrate communication efforts to ensure that the public receives a consistent, comprehensive message" (FEMA 2020, p. 5). County/Operational Area Joint Information Centers (JICs), NGOS and other community partners should develop predetermined, effective JIS operating procedures to ensure the most efficient use of the messaging capability, including the development of multi-lingual messaging.

It is also important for agencies to use the proper terminology when naming a facility. According to the federal program description, a JIC is a facility that includes representatives from all of the government agencies and NGOs that are participating in the disaster response. If a county wants to establish an information source that consists of all of its departments and internal agencies, the name should make that clear, such as "county information center." A "Joint Information Center" needs to be multi-agency, based on the federal definition. In a disaster, it is the JIC that should put out coordinated emergency messaging, not cities, NGOs and counties each putting out disaster information independently.

The JIC should be the single source of all media information that is provided to the public during an emergency. "Risk messaging should be consistent across all forms of social media used to disseminate information" (Kelly, 2015, p. 49). Individual political leaders should not be crafting unique messages for different community groups, which can cause confusion and result in the distribution of inaccurate information. Individual elected officials' websites should point their constituents to the official website and social media sites to ensure consistent messaging. All media briefings should be coordinated through the JIC so that all elected officials have the same information and "speak with one voice" to avoid confusing the public. Similar plans should be made for messaging by NGOs that should rely on the JIC for basic disaster information.

Messaging from the JIC needs to be focused on the information that the residents need to know. While the reporter writing a news article may relish the details of fire department units' movements and police weapons and tactics, the alerting and warning messaging sent to affected areas should be limited to actionable information for life safety. The 360 characters should describe the actions residents should take and where to get more detailed information. Media briefing materials with more descriptive details can be published on a website for residents to access once they have reached safety.

Messaging from the JIC should abide by the Incident Command System (ICS) rule of communicating only in plain language during a disaster. While message originators may see codes and acronyms as a way to conserve scarce characters, many members of the public will not know what the terms mean, or may have the wrong impression of those terms from popular entertainment shows. For example, the SWAT acronym may mean "special weapons and tactics," but its frequent use in television dramas has led to a general perception of a SWAT team as a group making a violent entry into a space. Thus during Hurricane Katrina, when FBI SWAT teams were sent to New Orleans on mutual aid to assist with Hurricane Katrina search and rescues (FBI, n.d.), they engendered fear in community members who thought that they were going to be violently arrested. Calling the agents members of the search and rescue effort would have caused less fear and engendered more cooperation.

Acronyms seldom translate correctly when interpretations are made. Should an interpreter say the words of the acronym in the other language, or try to interpret the acronym, or just say the English term? Some terms, like AM and FM for radio frequencies, may be easily understood by other than English speakers, but JIC would not make sense to most listeners, even in English. Therefore, it would need a word-by-word interpretation—Joint Information Center—and its purpose would have to be explained. Acronyms should generally be avoided since few people outside of the relevant profession will know what the acronyms mean.

Messaging for Donations

Messaging about donations may be especially difficult. During a disaster, everyone wants to help. To avoid a flood of unsolicited material goods into a disaster area, leaders generally urge people to make cash donations to recognized charities so that appropriate food and needed goods can be provided. For example, financial aid through the American Red Cross (ARC) may result in vouchers for thrift stores that enable disaster survivors to purchase clothing that is age and size appropriate for family members. This is much more psychologically acceptable than sending a variety of used clothing that may not be age appropriate or useful in the climate.

When soliciting funds from donors, it is important to be clear that the funds are going to the charity for its use in assisting disaster survivors, not necessarily to this specific disaster. In 1989 after the Loma Prieta Earthquake, San Francisco Mayor Art Agnos encouraged donations to the ARC. The funds went to the national headquarters, and the money was used to reimburse the national treasury for the funds that it had spent helping the Loma Prieta survivors in the immediate aftermath of the earthquake. The ARC's work typically ends with the immediate response, and long-term recovery depends on FEMA Individual and Household Assistance and private insurance.

The funds collected from donors interested in helping Loma Prieta impacted families far exceeded the amount that the ARC had spent in their care and sheltering services and initial response. When the mayor discovered that the donated funds were not, in fact, being spent for Loma Prieta survivors, he demanded that the funds be returned to the impacted communities of San Francisco, Oakland and other Bay Area counties (Agnos, 2010). As a result, the Northern California Disaster Preparedness Network was established. Under the guidance of former FEMA Region IX director Bill Medigovich as its executive director, the Network distributed almost $90 million in grants to NGOs and community groups for disaster preparedness projects in the nine Bay Area counties (personal communication, William Medigovich, 2013). However, the rift between local donors and the ARC was not soon healed.

In 2023, in the Bay Area, the Community Foundations have created an emergency fund that will take donations from individuals and quickly distribute the funds to the NGOs working with disaster survivors. In this way, the funds are distributed directly to the people most in need, not warehoused at the national level. By giving funds to local NGOs, the funds can be used for feeding disaster survivors, buying gift cards for use by disaster survivors or hiring staff to support the disaster survivors (Silicon Valley Community Foundation, 2023).

Being Prepared with Accurate Messaging

Testing is essential to be sure that the alerting and warning system will meet the community's needs in a real event. One way to achieve this goal is through testing that includes notifying the whole community. A scenario may be developed to drive the involvement of appropriate neighborhoods, government agencies, and NGOs. However, the message that is transmitted as part of the test should not be a disaster message. Even if the message is bracketed with "this is just a test," some users may only receive part of the message and become frightened that a real event has occurred. Instead, use a non-emergency practice message more like the federal EAS. "This is a test of the local emergency alerting system. If this were a real event, information on actions to take would have been provided. This was just a test." This gives the benefit of checking on the functionality and reach of the system without the possibility of alarming the community.

Current alerting and warning systems have some drawbacks. As mentioned earlier, there are only 360 characters available for crafting the message. In addition, the systems that rely on zip codes or cell tower locations for creating the notification area may cause under or over notifying. When possible, use some of the characters for embedding a URL so recipients can go to a website with more details, like an evacuation area map, or list of shelters and dangerous areas.

Public alerting and warning systems need to develop effective operating procedures to ensure the most efficient use of the messaging capability. Social media sites like Facebook, Twitter, and

Nextdoor are good places to post official emergency announcements, but there is no tone alert to stimulate residents to look at the post. One method to ensure greater use of the more detailed social media posts might be to create a public information campaign asking the public to go to a social media site when the community alerting message is received. A brief official announcement in the community alerting software, IPAWS or WEA, could be followed by "go to social media," using the alerting system to stimulate a response. For example, "There has been a 6.9 earthquake in San Jose. Expect strong aftershocks. Examine your home for damage and take protective actions. Go to social media for details." In 161 characters, the message has notified the public of essential actions and encouraged the use of social media for more details.

Case Study 1

The public relies on government agencies to provide accurate information about protective actions that can be taken. One Bay Area city opened an OWL—overnight warming location—during the 2022-2023 winter storms. People wanting more information about the location and access were urged to call HELP-4-YOU at a specified number. This number was managed by a local NGO that routinely serves the sheltering needs of the local homeless population.

Unfortunately, when people called for access to the special storm-related OWL, they received a message intended for those looking for regular overnight shelter. The message stated that all the beds were full and people could only go on a waiting list. Actually, the OWL, which was in a different location, had available space. When special facilities are set up, there should be a dedicated line for information about the newly opened space—in this case the OWL—that is not connected to routine sheltering information.

Case Study 2

One Bay Area city had an unpredicted flash flood in a lower income neighborhood. About half of the residents were Hispanic, many mono-lingual, non-English speakers, and many undocumented. The other half of the community members were Cambodian, also monolingual, non-English speakers, but with green cards. A check point was established at the entrance to the neighborhood to keep people from entering the flooded area. A fire truck drove through the flooded area with a loudspeaker announcing the need to evacuate and the location of busses for transportation to a shelter. These announcements were made by a bilingual Hispanic firefighter in both English and culturally appropriate Spanish.

Cambodian people at that time did not encourage their children to work for any government agency because of their negative experiences in their country of origin. As a result, there was only one public safety employee who was a Cambodian speaker. He was a police officer. The police department had him assigned to the neighborhood check point to explain to people why they could not go home. When the fire truck had completed one round of neighborhood notifications, they returned to the incident command post and asked the incident commander to get them a Cambodian speaker who could ride along on the next notification round with them and make the evacuation announcement in Cambodian. The law enforcement branch chief refused to release the only Cambodian speaker from his duties at the check point. Finally, the Cambodian officer requested to be released, pointing out that the Cambodian residents who were at home would be elderly people with little English capability. He was released for just one round of notifications.

Pre-planning with community NGOs could have created connections with bilingual Cambodian community members who might have been able to ride with the firefighters to make the evacuation notifications, leaving the police officer to continue with his law enforcement duties. When a shelter was opened by the ARC, the city's emergency manager was able to get assistance from the community clergy group to connect the city with Cambodian youth who willingly staffed the shelter as interpreters for the elders who were there. As a result of this contact, the students' mothers donated culturally appropriate meals for the residents in the shelter, which further eased the elders' stress. (Note: Distribution of homemade food is no longer permitted at ARC shelters due to health concerns.) The city's emergency communications plan was updated to include more community groups and NGOs with language capabilities, focusing on community languages not spoken by many city employees.

Case Study 3

A California county was supporting people being evacuated from flooding due to a levee break, who were from a low-income community with many undocumented resident farm workers. When the town was completely flooded, about 2,500 people had left their homes, but only 400 of them were in community shelters. Where were the rest? Why did they not go to the ARC shelter that was available? Was there a language barrier that prevented them from understanding where the shelter was? Were they worried about their immigration status? Did they not know that emergency shelters are protected areas? The Secretary of the Department of Homeland Security has specified that disaster assistance facilities cannot be raided for immigration enforcement (DHS, 2021).

California has laws that permit undocumented residents to get various types of state assistance. There was a variety of programs that the residents could all have accessed, regardless of immigration status, but because many people did not go to the shelters, there was no way to find them and tell them about the help that was available. When the neighborhoods were evacuated, there was no immediate follow-up regarding shelter availability, so people vanished from the area. NGOs could have helped with bilingual messaging if they had been brought into the evacuation process. Because the impacted population is used to working with NGOs for assistance, they have a higher trust in the NGOs than in local government.

Case Study 4

A suburban community planned a wildfire drill for one neighborhood. The goal was to get the residents to understand the potential threat and make plans for their departure from their homes. Participants were urged to pack a "go bag," think about what they would need to stay in a shelter, and what documents they would need to file insurance claims and qualify for FEMA assistance.

On the day of the event, the triggering message was sent not just to the participants, but also to the whole community. It announced that the drill was starting, and residents should not be alarmed by cars coming out of one area for the drill. The local law enforcement stayed in the neighborhood during the drill to prevent theft, since the whole community knew about the local evacuation. This informative message sent to everyone was good for triggering the start of the drill, because it also informed other community members of the planned event, preventing worried residents from overwhelming the 9-1-1 system with calls for information. It also prompted other neighborhoods to contact the sponsors to know how they could have a drill for their area.

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Acknowledgments

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2254.

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Attachment 1

Executive Order 13407—Public Alert and Warning System

June 26, 2006

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (42 U.S.C. 5121 et seq.), and the Homeland Security Act of 2002, as amended (6 U.S.C. 101 et seq.), it is hereby ordered as follows:

Section 1. Policy. It is the policy of the United States to have an effective, reliable, integrated, flexible, and comprehensive system to alert and warn the American people in situations of war, terrorist attack, natural disaster, or other hazards to public safety and well- being (public alert and warning system), taking appropriate account of the functions, capabilities, and needs of the private sector and of all levels of government in our Federal system, and to ensure that under all conditions the President can communicate with the American people.

Sec. 2. Functions of the Secretary of Homeland Security.

(a) To implement the policy set forth in section 1 of this order, the Secretary of Homeland Security shall:

(i) inventory, evaluate, and assess the capabilities and integration with the public alert and warning system of Federal, State, territorial, tribal, and local public alert and warning resources;

(ii) establish or adopt, as appropriate, common alerting and warning protocols, standards, terminology, and operating procedures for the public alert and warning system to enable interoperability and the secure delivery of coordinated messages to the American people through as many communication pathways as practicable, taking account of Federal Communications Commission rules as provided by law;

(iii) ensure the capability to adapt the distribution and content of communications on the basis of geographic location, risks, or personal user preferences, as appropriate;

(iv) include in the public alert and warning system the capability to alert and warn all Americans, including those with disabilities and those without an understanding of the English language;

(v) through cooperation with the owners and operators of communication facilities, maintain, protect, and, if necessary, restore communications facilities and capabilities necessary for the public alert and warning system;

(vi) ensure the conduct of training, tests, and exercises for the public alert and warning system;

(vii) ensure the conduct of public education efforts so that State, territorial, tribal, and local governments, the private sector, and the American people understand the functions of the public alert and warning system and how to access, use, and respond to information from the public

alert and warning system;

(viii) consult, coordinate, and cooperate with the private sector, including communications media organizations, and Federal, State, territorial, tribal, and local governmental authorities, including emergency response providers, as appropriate;

(ix) administer the Emergency Alert System (EAS) as a critical component of the public alert and warning system; and

(x) ensure that under all conditions the President of the United States can alert and warn the American people.

(b) In performing the functions set forth in subsection (a) of this section, the Secretary of Homeland Security shall coordinate with the Secretary of Commerce, the heads of other departments and agencies of the executive branch (agencies), and other officers of the United States, as appropriate, and the Federal Communications Commission.

(c) The Secretary of Homeland Security may issue guidance to implement this order.

Sec. 3. Duties of Heads of Departments and Agencies.

(a) The heads of agencies shall provide such assistance and information as the Secretary of Homeland Security may request to implement this order.

(b) In addition to performing the duties specified under subsection (a) of this section:

(i) the Secretary of Commerce shall make available to the Secretary of Homeland Security, to assist in implementing this order, the capabilities and expertise of the Department of Commerce relating to standards, technology, telecommunications, dissemination systems, and weather;

(ii) the Secretary of Defense shall provide to the Secretary of Homeland Security requirements for the public alert and warning system necessary to ensure proper coordination of the functions of the Department of Defense with the use of such system;

(iii) the Federal Communications Commission shall, as provided by law, adopt rules to ensure that communications systems have the capacity to transmit alerts and warnings to the public as part of the public alert and warning system; and

(iv) the heads of agencies with capabilities for public alert and warning shall comply with guidance issued by the Secretary of Homeland Security under subsection 2(c) of this order, and shall develop and maintain such capabilities in a manner consistent and interoperable with the public alert and warning system.

Sec. 4. Reports on Implementation. Not later than 90 days after the date of this order, the Secretary of Homeland Security shall submit to the President, through the Assistant to the President for Homeland Security and Counterterrorism, a plan for the implementation of this order, and shall thereafter submit reports from time to time, and not less often than once each year, on such implementation, together with any recommendations the Secretary finds appropriate.

Sec. 5. Amendment, Revocation, and Transition.

(a) Section 3(b)(4) of Executive Order 12472 of April 3, 1984, as amended, is further amended by striking "Emergency Broadcast System" and inserting in lieu thereof "Emergency Alert System".

(b) Not later than 120 days after the date of this order, the Secretary of Homeland Security, after consultation with the Assistant to the President for Homeland Security and Counterterrorism, shall issue guidance under section 2(c) of this order that shall address the subject matter of the presidential memorandum of September 15, 1995, for the Director, Federal Emergency Management Agency, on Presidential Communications with the General Public During Periods of National Emergency, and upon issuance of such guidance such memorandum is revoked.

(c) The Secretary of Homeland Security shall ensure an orderly and effective transition, without loss of capability, from alert and warning systems available as of the date of this order to the public alert and warning system for which this order provides.

Sec. 6. General Provisions. (a) This order shall be implemented in a manner consistent with:

(i) applicable law and presidential guidance, including Executive Order 12472 of April 3, 1984, as amended, and subject to the availability of appropriations; and

(ii) the authorities of agencies, or heads of agencies, vested by law.

(b) This order shall not be construed to impair or otherwise affect the functions of the Director of the Office of Management and Budget relating to budget, administrative, and legislative proposals.

(c) This order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity by a party against the United States, its agencies, instrumentalities, or entities, its officers, employees, or agents, or any other person.

George W. Bush

The White House,

June 26, 2006.

Note: This Executive order was published in the Federal Register on June 28.

George W. Bush, Executive Order 13407—Public Alert and Warning System Online by Gerhard Peters and John T. Woolley, The American Presidency Project https://www.presidency.ucsb.edu/node/216539