

Best Practices in Disaster Public Communications: Evacuation Alerting and Social Media

Project 2254
December 2022

Frances L. Edwards, MUP, PhD, CEM, Kaikai Liu, PhD, Amanda Lee Hughes, PhD,
Zeyu Gao, PhD, Daniel C. Goodrich, MPA, CEM, MEP, Alan Barner, MPA,
and Robert Herrera, MPA



Source: Sgt. Galen Yusufzai-Boggs, California National Guard

Renowned sociologist Dennis Mileti identified the challenges of creating evacuation alerts that would engender action by community members, noting that people spend time “milling” between notification and action, such as checking with friends, family, and neighbors to decide whether the alert applies to them. This can be life-threatening. Sorting through social media messaging is now added. Researchers from San Jose State University have examined how community members responded to alerting during the SCU and CZU complex wildland fires in 2020, and which best practices seemed to engender timely action. The report provides best practices used for alerting and warning during the SCU and CZU fires using IPAWS and WEA, local agencies and social media. It includes the value of pre-disaster public education in decision-making about evacuation, and the importance of cultural competency in developing and delivering evacuation messaging. It explains how social media organizations sort and respond to social media posts regarding unfolding emergencies, and how they collaborate with public safety agencies.

The researchers have also created a white paper that proposes the creation of an app that could speed the social media investigation by sorting messages by GIS coordinates, time, and sources using Big Data to ensure that the messages reviewed are relevant, timely and local. This removes materials created elsewhere and earlier, which would not be relevant for emergency decision-making. The notional design of a smart phone app that could speed milling, and in turn speed evacuation actions, that uses social media and Big Data, is displayed.

Study Methods

The research began with an extensive literature review of existing works on evacuation warning systems, trust in government and social media use in disaster notifications. A second line of research created a catalog of training for public information officers and created a catalog of relevant literature. Finally, public agency officials were interviewed regarding the work of their agencies during the SCU and CZU fires to provide detail not available in published sources. This project was exempt from Institutional Research Board review because there were no human subjects.

How can public agencies communicate disaster information to the public in ways that build trust and engender appropriate action?

Findings

1. More than 25 best practices were discovered that can be used by public information officers to improve the public's response to community notifications during emergencies and disasters.
2. Areas for improvement in the current technology-based systems were also discovered.
3. Finally, a smart phone app that would gather the most timely and relevant information was designed and tested in the SJSU College of Engineering, and well-developed plans are included for the creation of the app using existing resources, Big Data and machine learning, should funding become available.

Policy Recommendations

Best Practices Motivate Action	
Be Specific	Basic Rules
Pre-event outreach and education are essential to build trust	Regular, reliable communication from public safety agencies, elected officials
Where to go?	Clear, concise, consistent
What to bring?	Accurate maps
<ul style="list-style-type: none"> • Shelter supplies • Critical documents 	Repetition of message
Special needs issues	Community languages and cultural competency
Pets	
Report to work? Disaster Service Worker?	

More details about the best practices are provided in the report, along with details on using technology more successfully, and using pre-disaster outreach activities to enhance evacuation response.

About the Principal Investigator

Frannie Edwards, MUP, PhD, CEM, is professor emeritus at San José State University, and Deputy Director of the National Transportation Security Center at the Mineta Transportation Institute (MTI). She is a Certified Emergency Manager with over 20 years professional experience in California.

To Learn More

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



MTI is a University Transportation Center sponsored by the U.S. Department of Transportation's Office of the Assistant Secretary for Research and Technology and by Caltrans. The Institute is located within San José State University's Lucas Graduate School of Business.