




WHITE PAPER

Lessons Learned from the California 2020 Wildfire Season

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Communications is the pillar of any emergency response. How organizations communicate, what they communicate, and when they communicate must be determined before the disaster occurs. In the absence of information, people form their narrative.

In the absence of information, people form their narrative. The ability to communicate with the public, and in turn, their ability to communicate with their loved ones, is arguably the single most critical link to disaster response. However, we consistently fall short, pointing blame on systemic failures in infrastructure, technology, and human behavior.



Disaster response can be measured on three things: command, control, and communications.

Disaster response can be measured on three things: command, control, and communications. Failures in any of the three will result in adverse consequences well beyond the incident. In fact, history has a way of showing us predictive modeling and warnings to communities alike. In 2017, one year before the Camp Fire in Paradise, California, the Tubbs and Carr Fires revealed much of the same challenges in command, control, and communication¹. A Los Angeles Times investigation found that, despite the planning efforts amongst community leaders, they repeatedly ignored the warnings, including relying on a notification system vulnerable to fire and failed to send evacuation orders even as residents were fleeing for their lives².

But if we know these systems frequently fail, why do we keep making the same mistakes? Perhaps the answer lies in the fact that communication preparedness remains mostly underdeveloped and not fully understood. Organizations still aren't reaching their communities in the "before" moments, failing to establish credibility and public trust. And in organizations where community engagement is high, the struggle between timely information and verification of information can inhibit communication operations during times of crisis. Technical challenges in telecommunications' infrastructure and notification platforms and the lack of universal adoption of common terminology and community education continue

¹ October 2017 Complex Wildfires, Emergency Operations After Action Report.

² Here's how Paradise ignored warnings and became a deathtrap. (2018, December 30). Retrieved December 22, 2020, from <https://www.latimes.com/local/california/la-me-camp-fire-deathtrap-20181230-story.html>

the cycle of headlines of failed communications across the world. We aren't learning from our past mistakes, arguably just waiting to recreate them.

Public Safety Power Shut-off Program

To date, 2020 was the worst fire season in California in over 70 years. The LNU Lightning Complex Fire exploded within 24-hrs knocking out power lines, cell towers, destroying homes, and ultimately taking lives. But despite massive improvements to public alert and warning, residents still aren't getting the message. This is mainly because most Californians have no idea they need to register to receive them. And relying on the *Amber Style* Wireless Emergency Alerts have proven to be more problematic than the solution.

A 2018 test of IPAWS found that Wireless Emergency Alerts (WEA) had a 70% national efficacy rate of reaching cell phones, and there is no way to determine who received the message, often reaching residents well beyond the impacted evacuation area or sometimes not delivering at all to those in immediate danger³. This was exemplified during the LNU Lightning Complex Fire. Sonoma County sent over 40 Wireless Emergency Alerts (WEAs) over two weeks, often targeting counties over 40 miles away.



There isn't one solution to improving public alert and warning, but rather a myriad of improvements that need to be developed and implemented both technical and social.

Public Safety Power Shut-off Program

Adding to the complexities in alert and warning is the Public Safety Power Shut-off (PSPS) program. Public utility companies voluntarily shut off power to areas prone to wildfires, thus taking down cell towers with them. While they must have back-up generators, there is no standard for how long generators must last. Many messages get stuck in a queue with power failures, either voluntary or natural disaster-induced, often not sending them until hours after evacuation warnings or orders are given or lifted. This creates a real latency lag when delivering emergency alerts.

Technological and Social Considerations

There isn't one solution to improving public alert and warning, but rather a myriad of improvements that need to be developed and implemented both technical and social. The first is technological improvements by adopting common terminology, developing indicators or criteria for pre-disaster public information dissemination, and better-integrating cross-jurisdictional communication systems and platforms to enhance public messaging. It also hinges on social constructs, re-evaluating how we engage our communities in preparedness discourse. We aren't reaching our populations in part because we are having the wrong conversation. And until we start recognizing our communities' social constructivism, we will consistently fail to reach our residents.

³ Larsen, K. (2020, August 28). Bay Area wildfires highlight flaws in emergency alert systems after some residents wrongly receive evacuation orders. Retrieved December 22, 2020, from <https://abc7news.com/cal-fire-california-fires-map-in/6392958/>

How to Improve Coordination and Response

1) Adoption of Common Terminology

In 2019, the State adopted common terminology around wildfire evacuation actions. They moved to *Evacuation Warning* and *Evacuation Order* to help clarify and reduce public protective initiation delay. However, adopting this terminology isn't consistent across agencies. Residents lack a basic understanding of what response actions need to be taken under each definition. During the Bobcat Fire in LA County in October of 2020, while most agencies were using common terminology, some cities, along with the media, were still using the terms *voluntary* and *mandatory* when it came to issuing evacuation alerts, further confusing residents who were also getting emergency alerts from other agencies with the terms *Warning and Order*⁴. Recognizing the confusion, emergency managers had to scramble to add "GET SET" or "GO NOW" into their 360-character count WEA messages. Additionally, not all terminology is easily understood, especially if the community isn't properly informed on what to do when they receive an alert. Sometimes the importance of simplicity needs to be factored into messaging. Suppose the message isn't explicitly clear on what actions need to be taken. In that case, residents will search to either validate the message or ignore it altogether.



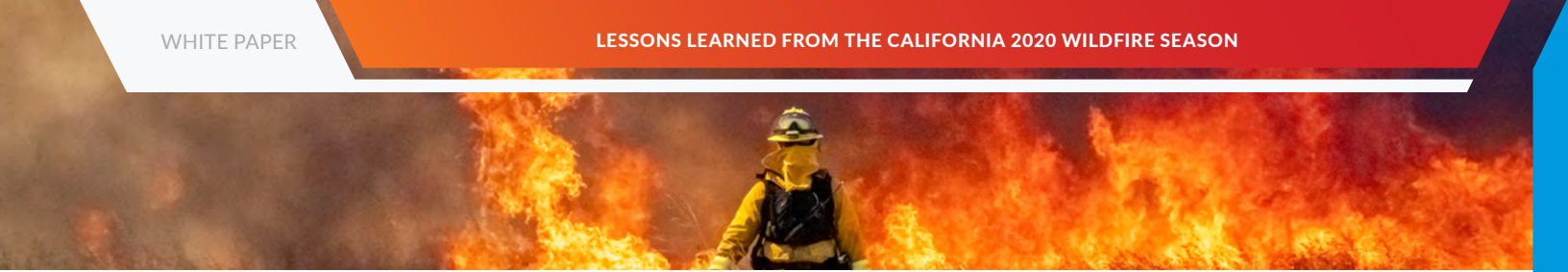
Identify what modalities you will utilize to send the messages and who the intended audiences will be

2) Develop Criteria for Pre-Disaster Information Dissemination and Alerting

Develop specific criteria for when pre-messaging is necessary to alert residents of the threats and hazards around them and what to do if there becomes an imminent threat. Identify what modalities you will utilize to send the messages and who the intended audiences will be. This should include a toolbox of press releases for the media, pre-scripted messages, social media posts, and messaging templates trusted community partners could utilize to help amplify your message to residents. The content should include preparing, registering to receive emergency alerts, what to do when they receive specific alerts, and where to get more information. This will decrease a concept called 'milling,' where it becomes fundamental human nature to delay protective action when warned. They search to validate the message they receive and do not take immediate action. If we can set the stage early for the expectation will be under certain conditions, residents will be better prepared to face the hazard and take immediate action when warned. An example of a pre-alerting message is below:

A Red Flag Warning exists for the cities of (______). This means there is a high fire danger for your area. Be prepared to evacuate if you receive an Evacuation Warning (GET READY) or Evacuation Order (GO NOW). There is no active emergency in your area. Please share with your neighbors and friends by using (create a # for social media).

⁴ Staff, C. (2020, September 10). Bobcat Fire Continues To Burn Out Of Control, But Some Voluntary Evacuations Lifted. Retrieved December 22, 2020, from <https://losangeles.cbslocal.com/2020/09/10/bobcat-fire-continues-to-burn-out-of-control-but-some-voluntary-evacuations-lifted/>



3) Develop Better Communication Integration Between Response Agencies

Disasters don't respect county or city boundaries, thus making unified coordination of response and messaging critical. California has a jigsaw puzzle of emergency notification systems, many of which stop at jurisdictional boundaries, preventing messages from traveling beyond the city or county limits. The lack of integration of emergency notification systems is often seen as limiting factors in terms of any advanced or even adequate warning during wildfires. During the LNU Lightning Complex Fire, residents in Yolo, Solano, and nearby counties received no warnings of the impending fires heading their direction because they were outside of the county boundaries, yet fatefully in the pathway of the wildfire⁵. There needs to be a unified alert across the area. This can be improved by developing multijurisdictional programs and utilizing networks to share messaging and information immediately with our partners.

The Future of Alert and Warning in California

In 2018, Senator Hannah Jackson introduced SB-46 to develop an 'opt-out' program, allowing counties to access public utility records for notifications. And while it would significantly enhance general reverse 9-1-1 landline data, it limited access to county entities. Local municipal governments were left entirely off the map. Further complicating this was that the data's reliability was questionable. The data could be outdated, belong to the subscriber who may not reside in residence, and did not account for wireless devices. The bill remains in committee.

1) Rethinking Opt-in Campaigns

Opt-in campaigns have largely failed. By measure, a successful campaign is considered to account for 25% of your community population. The LNU Lightning Complex Fire further highlighted this issue. Residents waited to receive emergency alerts telling them to evacuate, but they never received them. This wasn't because they weren't sent; they just were unaware that they needed to register to receive them. Further promulgating this issue is that millions of Californians are not registered to receive emergency alerts from their city or county. According to a Calmatters review of 14-fire prone counties, less than 25% of residents had registered for their emergency notification system, and in others, less than 1% were registered⁶.

5 Beale, M. (2020, August 27). Wildfire evacuation alert 'utterly failed'. Retrieved December 22, 2020, from <https://www.dailydemocrat.com/2020/08/26/some-yolo-county-residents-say-wildfire-evacuation-alert-system-utterly-failed/>

6 Bikales, J. (2020, October 09). Most Californians in wildfire-prone counties aren't signed up for emergency alerts. Retrieved December 22, 2020, from <https://calmatters.org/environment/california-wildfires/2020/10/californians-wildfire-emergency-alerts/>

Looking forward on how to improve emergency communications, a dynamic overhaul of communication preparedness is needed, employing a toolbox of both technical solutions and social strategies to engage our communities. Infrastructure challenges, technological idiosyncrasies, and human behavior are all factors that must be considered when redesigning risk communications. Public education needs to focus less on educating and more on understanding stakeholder values and concerns. People want an active role in the information exchange. Invite them to the table to determine grass root strategies to serve your communities better. By employing open and transparent decision making, you are building trust within your organizations. And when they trust in the messenger, they are more likely to listen when it matters most.

Opt-in campaigns have been mainly targeted to educate residents on the importance of registering for alerts and less understanding of stakeholder values and concerns. We need to begin reverse engineer how we discuss preparedness by treating our communities as legitimate partners in the overall conversation. Start with harnessing trusted networks in your communities, including community influencers. A case study out of Arlington County identified people's characteristics and roles who tend to share information. The characteristics identified were openness to experience, agreeableness, conscientiousness, extraversion, the propensity to trust, and emotional attachment. The roles they identified were those that train others, teachers, healthcare workers, counselors, and sports management, agents. As we begin to redesign opt-in campaigns, these are the influencers to target to share the information.

2) Harnessing Public/Private Partnerships

Residents assume emergency alerts will come, in part, because they believe they are automatically enrolled. This is a common misconception and a dangerous one. Senator Bill Dodd of Napa believes residents should be automatically registered for emergency alerts, a sentiment that is gaining more traction as more fires and disasters devastate California⁷. Programs exist where cities can purchase cellphone and VIOP data but are often cost-prohibitive for smaller entities. One option would be a regional operational area grant to fund coordination and communications. Using this grant, cities and counties could develop regional notification platforms that integrate and send notifications regardless of jurisdictional boundaries. But without a legislative mandate, government entities are left with creating their solutions.

3) Low Tech Redundancies

Start with your Local Hazard Mitigation Plan (LHMP) and list every possible scenario and impact. If an earthquake or wildfire destroys your infrastructure, determine how the information will be shared. Cities like Laguna Beach and most recently Ventura County Sheriff's Department are harnessing sirens to warn residents of what to do when all else fails. The program called "High-Lo, Got To Go" is intended to notify residents of imminent danger and evacuate. The European styled siren is not like familiar sirens. Many residents sometimes ignore the sirens they are used to hearing. It's essential to consider every tool in the information dissemination process. We often find communication tools rarely perform perfectly in every scenario. Many factors impact information distribution and delivery. Integrating low-tech solutions adds a layer for redundancy that can help in message delivery during those critical moments.

⁷ Larsen, K. (2020, August 28). Bay Area wildfires highlight flaws in emergency alert systems after some residents wrongly receive evacuation orders. Retrieved December 22, 2020, from <https://abc7news.com/cal-fire-california-fires-map-in/6392958/>

About the Author



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Soraya Sutherlin is managing partner of Emergency Management Safety Partners where she leads the Emergency Management and Campus Safety Division. She is a Certified Emergency Manager, CEM, by the International Association of Emergency Managers (IAEM) and has over 13 years' experience in emergency planning, training, and response, public health planning, multiagency coordination and response, and local municipal government emergency response. In her roles, she has worked with dozens of K-12 schools and institutes of higher education on emergency management programs and comprehensive safe school planning and local governments and organizations on emergency management and emergency communication protocols and plans. She is currently working with the California Department of Education in coordination with Los Angeles County of Office of Education (LACOE) in rewriting the Safe School Compliance Guide for California Public Schools.

In her tenure, she has responded to multitude of disasters and emergencies including the two explosions at the ExxonMobil Refinery in Torrance, Ca. In 2011, she led and coordinated the Incident Command Post for the LA Marathon Medical Team and in 2013, she led the planning, design, and execution of the Incident Command Center for the UCLA Santa Monica Medical Center Hospital patient move. She has directed and participated in many large and full-scale planned exercises and disasters across the state, including most recently responding to the California Storms in January 2017, which resulted in a Presidential Disaster Declaration.

Currently, she is on assignment as the Regional Emergency Communications Program Manager for the Alert SouthBay Emergency Notification System. This first of its kind multijurisdictional notification platform bridges 13 cities and over 1 million residents in Los Angeles County to receive emergency alerts under one cross-jurisdictional platform. She is the liaison for the SouthBay CAER group as the subject matter expert on refinery notifications and AB 1646 and the liaison for Los Angeles County Fire Department Health Hazmat and the City of Los Angeles Fire and Emergency Management Department.



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