NAPA COUNTY GRAND JURY
2017-2018

June 13, 2018

FINAL REPORT

Napa County Emergency Alerts Lacking During Fires

SUMMARY

In the late evening of October 8, 2017, hot, dry, 50 - 70 mph winds kicked up massive fires across the North Bay wine country. It soon became apparent that the fires ravaging Napa County, and especially Sonoma County, were going to be huge, devastating, and impossible to contain. The immediate focus, therefore, was to save lives.

Napa County and local fire and law enforcement personnel struggled to warn citizens of the three major wildfires that erupted almost simultaneously. As the fire took down power lines, communication cell sites, and transmission cables, most residents soon found themselves without cellphone, landline or Internet access.

While there were many stories of heroism on the part of these first responders, it became obvious that the alert systems and procedures for warning citizens and visitors of impending disaster were not sufficient, if they functioned at all. As a result, many people were confused, and unaware of the degree of danger, location and direction of the fires, and evacuation plans. The Grand Jury decided that this specific element of the fire disaster needed to be investigated.

What the Grand Jury found were several shortcomings in both the warning system that the County of Napa selected to use for such emergencies, as well as the staffing and procedures of emergency personnel responsible for the alerts at the time of the fire. Both issues were significantly exacerbated by the weather conditions, time of day, and the size and speed of the fire storms.

The Grand Jury recommends that the current alert system in use throughout the County, called Nixle, be augmented by a more reliable and ubiquitous platform used by other municipalities, called Wireless Emergency Alerts. In addition, the Grand Jury recommends other warning technologies such as sirens and drones should be investigated and deployed, if feasible, in the event of loss of wireless telecommunications infrastructure. Napa County needs an overlapping, reliable, and effective emergency alert system.

The Grand Jury further recommends that staffing for the Napa County Office of Emergency Services be increased to deal with the significant amount of planning, education, and training that goes into this critical function. A top priority should be to update and expand on existing written public alert plans within the appropriate jurisdictions' websites, as well as to develop a checklist of detailed procedures for deciding what warnings to issue, when, and in what form.

Despite these shortcomings, the Grand Jury acknowledges the professional, dedicated, and cohesive group of individuals - government, private citizens, and other organizations - who pulled together to fight the fire and help save lives. A special recognition goes to the owners and employees of KVON radio station for their long-hours of on-air public service in the face of this emergency.

Napa sunrise, October 12, 2017 Rich Pedroncelli/AP

GLOSSARY

CAL FIRE	California Department of Forestry and Fire Prevention
EOC	Emergency Operations Center
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
HMP	Hazard Mitigation Plan
iPAWS	Integrated Public Alert and Warning Systems
OES	Office of Emergency Services
WEA	Wireless Emergency Alerts

The words “notification,” “warning,” and “alert” often are used interchangeably. However, usually those words are used by public safety agencies and service providers in specific instances:

- **Notification** – A communication intended to inform recipients of a condition or event for which contingency plans are in place
- **Alert** - A communication intended to draw the attention of recipients to some previously unexpected or unknown condition or event

- **Warning** – A communication that encourages recipients to take immediate protective actions appropriate to some emergent hazard or threat

BACKGROUND

Napa County residents, businesses, and visitors have been hard-hit by several natural disasters over the last three years, from a devastating earthquake in 2014, severe flooding due to torrential rainstorms in early 2017 and the recent fires in October 2017. It is certainly a credit to the people and public safety professionals in Napa that the community has not only collaborated extremely well to repair and rebuild and has also continued to grow and thrive.

In analyzing the recent fire disasters in Napa County, it is important to learn what went right, and what could have been done better. There are on-going investigations by CAL FIRE and others as to the causes of the fires, and strategies and tactics of emergency personnel in fighting them, but this is not the Grand Jury's focus. The Grand Jury received several letters from residents who lost everything in the fires this past fall, complaining about the lack of adequate warnings and responses. After extensive interviews and research, the Grand Jury has identified some areas that can be addressed immediately with respect to the County's disaster warning capabilities.

Emergency Alert Systems

Historically, residents would be awakened by the sound of a loud bell or siren indicating that an emergency was taking place. In many communities now, cellphones begin to screech out audible warning tones and vibrate, signaling danger. Other methods range from low-tech options such as door-to-door or drive-by warnings, "phone trees" from neighbors or community associations, to advanced audible drones. There is certainly no one method that will work in every situation, and each has advantages and drawbacks. For example, loud, fixed, outdoor sirens do not provide specific information about an impending disaster, yet can function even when cell towers and power are knocked out. Conversely, cellphone-based warnings are easily disseminated, but can be unreliable if cell towers are compromised in a fire, such as Napa experienced in 2017.

Summarized below are the more widely-known and deployed alert systems in use today. Refer to Appendix A for a more complete list.

Government Systems

1. At the national level, the Emergency Alert System (EAS) is a public warning system administered by the Federal Communications Commission that requires television and radio broadcasters, cable networks, and satellite broadcast providers to offer communication capabilities in the event of emergencies. The EAS allows the President of the United States, as well as state and local authorities, to interrupt all broadcasts in one or more counties with emergency messages.

The messages may be irrelevant to many, which may lead to alert fatigue. In addition, they don't reach people who are not watching TV or listening to broadcast media at that moment. The EAS is also very limited in its ability to target specific geographic areas within a county.

2. Alerts can also be targeted to cellphones in a county or counties using a newer version called Wireless Emergency Alerts (WEA), best known for Amber Alerts. A unique, loud tone and vibration are followed by a brief (90 character) text message. With the ubiquity of cell phone use, this gets warnings out to almost everyone. WEAs can be sent by state and local public safety officials, the National Weather Service, the National Center for Missing and Exploited Children, and the President of the United States.

Deficiencies include limited character length and lack of ability to target alerts to specific sub-county areas where the threat is located. WEA systems by definition use cell towers and transmission cables, which can be weak links in a fire zone.

Only one-third of counties in the U.S. are using the WEA alert system, administered by FEMA, due primarily to the inability to target specific areas within a county. Even though Sonoma County has the WEA system, the probability for "overshooting" was the reason they did not choose to send out alerts as the fire raged. County officials feared such alerts might have caused panic and traffic jams that may have hindered fire and law enforcement evacuation efforts.

When Napa County evaluated the WEA system, officials decided against purchasing it for the same reasons that Sonoma chose not to use it.

3. Fixed and mobile sirens have been used for years for various urban warnings. San Francisco still operates 109 outdoor sirens throughout the city, mounted on poles. Saint Helena also has old sirens, but due to many residents' complaints, their use is strictly limited. The major drawbacks to fixed sirens are a) people don't know what the loud blast may mean, and b) it would be prohibitively expensive to cover vast rural areas in fire-prone areas.

Subsequent to the Grand Jury interviews conducted early in 2018, Calistoga has announced that it is installing two such fixed stationary sirens.[1]

The case for installing two-tone, European-style mobile sirens in patrol cars can be made. Many of the new vehicles are equipped with sirens but need an inexpensive upgrade to enable loud two-tone sound. The Napa County Sheriff's department is pro-actively installing such sirens on its entire fleet. These sirens (not to be used for traffic infractions) will be instrumental in helping with evacuation warnings. This will be a coordinated effort with other law enforcement agencies and CAL FIRE so there is consistency across the County, according to the Sheriff.

4. Innovative technologies such as aerial drones have been used by local and state fire departments with great success, mostly for real-time situational awareness monitoring fires in hard to reach areas, or in poor weather conditions. Drones can now be equipped with sensors, infrared cameras that can peer through smoke, and even loud speakers to warn residents and

[1] *Napa Valley Register*, "Once considered a nuisance, warning sirens may again return to Calistoga", Apr. 13, 2018

firefighters. In terms of surveillance, the drones can be safer to operate, quicker to deploy, more reliable, and far less expensive than helicopters.

While privacy concerns are voiced by some, the use of drones by fire departments with trained personnel, strict guidelines and coordination with the Federal Aviation Administration and other governmental agencies, can certainly save lives.[2]

Commercial Notification Services and Systems (such as Nixle)

5. Napa County chose a fairly new delivery system, "Nixle", to replace the outdated warning platform for issuing emergency messages. Nixle is an "opt-in" commercial offering requiring residents to sign up for the free service using their desired zip code. The Nixle system enables near real-time notification from local public agencies through text and email, voice messaging, social media, and the Nixle mobile app. It provides public safety and other advisories, such as law enforcement emergencies, road closures, missing persons, severe weather, fire alerts, etc. These alerts are more geographically-targeted than WEAs, although still not ideal.

Links to subscribe to Nixle alerts can be found on various County and city websites, including those of Napa County Emergency Services and the Sheriff's Department.

Nixle messages are created and sent out by only a small number of authorized operators within the County. This poses a potential issue if these operators are in the midst of the emergency themselves or are otherwise unavailable to get the alerts out to the public in a timely manner. The fact that Nixle alerts are reliant on cell towers and aerial transmission lines means that, as with WEAs, the alerts will only be received if the cell technology is working.

6. Community-based notifications are usually a quick and reliable method to communicate with neighbors about emergencies. Here are just a few examples found in Napa County:

*** FireWise and community Fire Safe Councils**

> In response to the clear danger presented by a build-up of volatile fire fuels across Napa County, a group of senior fire professionals and concerned community leaders came together in 2004 to form Napa FireWise. This community-based fire awareness program was designed to educate the public and encourage individuals to be proactive in preparing their property for greater fire protection.
>
> In 2005, with grants from the U.S. Forest Service and the Napa County Fire Department, Napa FireWise launched an aggressive public awareness program. The program consisted of using free wood-chipping services, defensible space instructions, plus community workshops and public relations campaigns. The core program continues today, in creating an atmosphere of sustained, shared responsibility, helping the community help itself through Fire Safe Councils.

[2] *Los Angeles Times*, "L.A. Fire Department used drones for the first time during Skirball fire", Dec. 14, 2017

*** Local radio - KVON 1440 AM**

There is no official written public policy or procedure detailing how local radio stations should alert its listening audience to an impending disaster. Fortunately, the owners and operators of KVON stepped in and provided valuable information, real-time fire conditions, and, most importantly, offered a public forum for our elected officials to communicate with citizens and relayed important facts. When the power went out, and the public could no longer receive information from TV, the Internet or Nixle, it was old technology that saved the day. Residents got in their cars or dug out their battery-powered radios to tune in to KVON.

"Radio became what Nixle could not be for us because of the cellular system going down. Our ability to communicate was in jeopardy," said Belia Ramos, Napa County Board of Supervisors.[3]

*** Social media - Next Door and FaceBook**

When power was on, and the Internet was available, these two popular applications offered up generally reliable information to many in the community.

METHODOLOGY

In conducting this investigation, the Grand Jury completed the following:

Site tours:

Napa County fire sites in and around Soda Canyon, Atlas Peak, Calistoga and Partrick Rd.

Napa County Emergency Operations Center

Interviews:

KVON 1440 am radio station

Napa County FireWise council representative

Napa City Council member

Calistoga Fire Department

Napa County Fire Department

Napa County Planning, Risk Management

Napa County Office of Emergency Services

Napa County Sheriff's Department

[3] *Napa Valley Register*, "Napa County will do a post mortem of its wildfire response", Dec. 16, 2017

Several Napa homeowners who lost property in the fires

For documents and articles related to this investigation, please refer to the Bibliography section.

DISCUSSION

The "Once in a Lifetime" Fire

Dry "Diablo Winds" from the north and east were kicking up throughout Napa County in the evening of Sunday October 8, 2017. The previous winter's significant rainfall created an abundance of underbrush in the valley and hills, which were now tinder dry.

The National Weather Service began issuing "red flag" warnings several days earlier as conditions were becoming dangerous. The wind and temperature conditions were forecasted in the Napa Valley Register as well as local TV weather segments. Even though the weather conditions were foreseen, no one could have predicted the exact timing, location, intensity and speed of the eventual firestorm.

The well-known Diablo winds measured 30 - 40 miles per hour initially Sunday evening, but picked up with gusts up to 63 miles per hour a short while later (according to a CAL FIRE report). There were no Nixle warnings from any Napa County governmental entity regarding the "red flag" warnings before the fires started.

The first official report of fire on October 8 was approximately 9:40 pm where high winds were blowing hot embers onto the Silverado Resort and Spa, coming from Atlas Peak on the eastern hills of Napa Valley, according to the Napa Sheriff Department. A fire broke out in the grandstand on the golf course where the Safeway Open Golf tournament had just concluded. An ominous red glow was observed up Atlas Peak Rd., and a separate fire was seen across the valley to the west, near Partrick Rd.

At the same time, farther north, the Calistoga Fire Department was alerted to several electrical arc fires on Bennett Rd. and Highway 128. By the time the first truck arrived, the area was fully engulfed in flames, which were moving very quickly to the south west (which was to become the devastating Tubbs Fire in Santa Rosa). This was the situation that the fire department and emergency personnel had feared the most: simultaneous fires caused by dry conditions, low humidity and strong Diablo winds. It resulted in what the Napa County Fire Chief called a "once in a lifetime fire".

Bad Timing

Compounding the problem was the fact that it was late at night, on a Sunday, when residents, visitors, emergency personnel, and almost everyone else were already turning in for the night. There were no initial Nixle/phone warnings or sirens. Residents were in a state of panic, scared and confused, as they fled the fast-approaching flames, trying also to call neighbors or knock on doors to warn them.

The first Nixle alert wasn't sent until 11:00 pm from the City of Napa, and the first from the Napa County Emergency Operations Center (EOC) came at 11:31 pm, a delay of over an hour and a half after the Alas Peak fire had been reported.
It was understandably very difficult for the OEC managers to get information from Central Dispatch and the Fire Department since this was a severe countywide fire emergency and things were chaotic, to say the least. However, a delay of this magnitude needs to be addressed.

Refer to Appendix B for a chronological list of Nixle Alerts during the initial fire outbreak

One resident of Atlas Peak who lost his home said, "It was just incredible, I've never seen anything like it before. It was like a scene from an apocalyptic movie. Atlas Peak was just blazing away." He stated that neither he nor other residents he knows on Atlas Peak and the northern Silverado community were alerted by any public safety agency of the fire, which was already on top of them.

As 911 calls started to pour in to the dispatch center, the Napa County Fire Chief immediately notified the County Office of Emergency Services (OES) manager to activate the EOC. The only two employees who have responsibility for managing the EOC reside in the Silverado Resort area, right in the path of the Atlas Peak fire. Both had to evacuate their families, and while one eventually drove down to the Sheriff's office to activate the EOC, the other attempted to get the facts of the fire's progress before sending out any broadcast alerts.

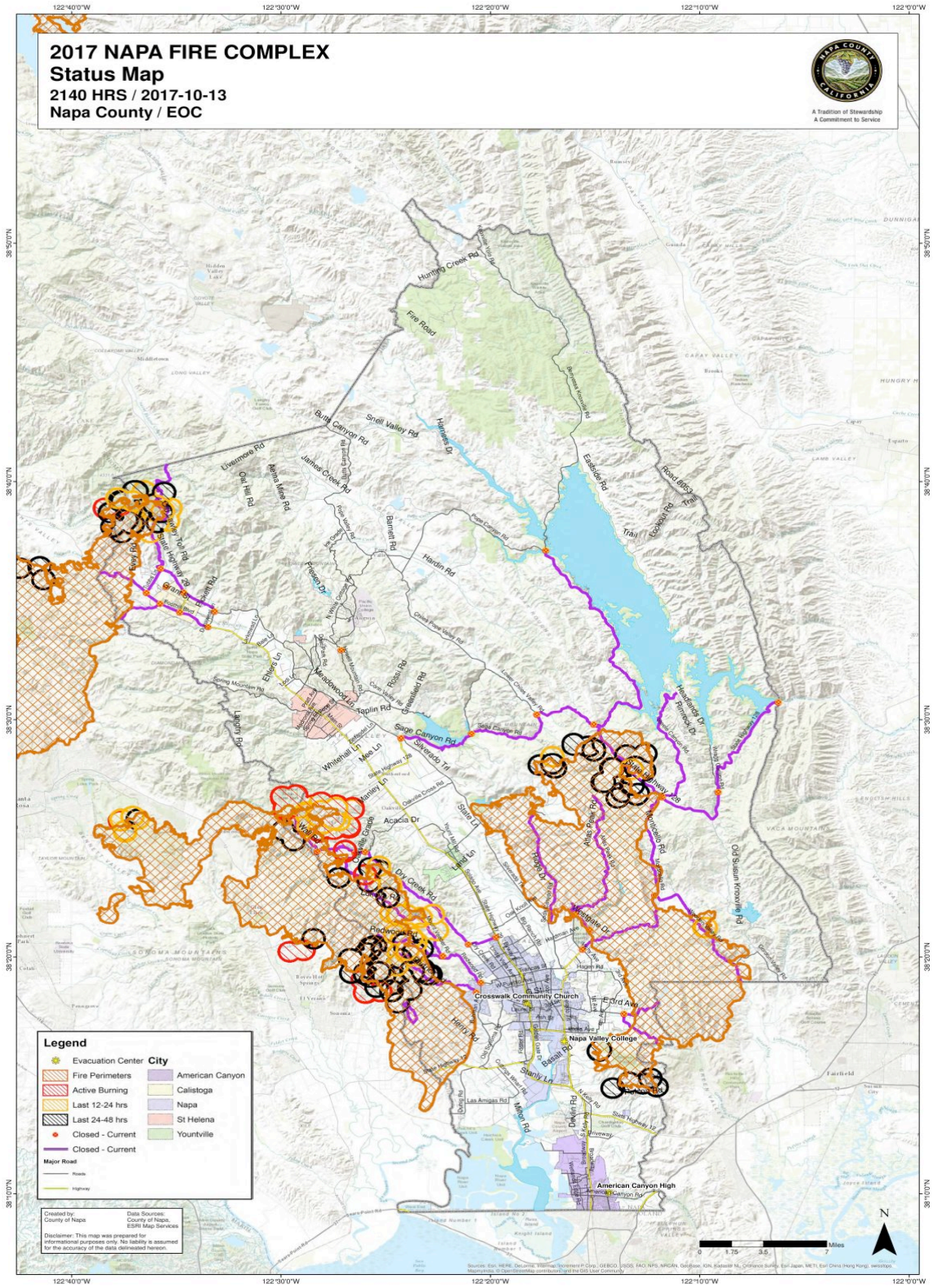
The County of Napa and its associated municipalities, as previously described, used Nixle as the primary alert system for emergencies. Only a few key government officials within the County are authorized to create and issue Nixle warnings. While it is important to have strict controls on who can issue such alerts, it is imperative that there be procedures in place to ensure the public is warned in a timely manner of emergencies that are life-threatening.

Nixle System Shortcomings

Nixle can only be effective if the warnings are timely, specific, and if people have their cell phones on. There were several problems with the Nixle system during the October fires:

1. Approximately 20 percent of residents in the County were registered to receive Nixle alerts before the fires started
2. With many out-of-town visitors to the famous Napa wine country, and especially with the Safeway Open golf tournament wrapping up at Silverado Resort, non-residents were unlikely to have registered for the local Nixle
3. By design, the Nixle technology relies on cell towers and transmission lines, which were being engulfed in flames
4. Unlike some other alert systems, which generate a loud noise, many heavy sleepers may not have heard the Nixle text warning messages
5. Spanish messages were not issued initially, and then were poorly translated. Since many households in Napa speak only Spanish, this issue caused misunderstanding and frustration.

During the early hours of Monday October 9, power started to go out, and then cell service was hit-or-miss. So, without means to receive Nixle alerts or get any information, or audible sirens, people didn't know whether they were in a safe area or should evacuate.



WEA

The major limitations to the WEA platform have now been addressed by the FCC. After a series of disasters in 2017, including hurricanes in Texas, Florida, and Puerto Rico, then followed by the destructive fires in Northern and Southern California, emergency operators and elected officials throughout the country were able to get the improvements they sought.

The FCC issued a rule in November 2017 that requires the major wireless carriers to implement upgrades to WEA as follows:

1. Increase the maximum length of a WEA from 90 characters to 360, and include links to phone numbers and websites

2. Transmit alerts to a geographical location that best approximates the area affected by the emergency, instead of countywide

Emergency operators are pushing for more improvements, such as using the cellphones' geo-location technology to target these WEAs more precisely.

As a result of these changes, and the aforementioned issues with Nixle, Napa County has just recently signed up for iPAWS, which is the platform from which WEAs are transmitted.

Conclusion

None of these fires could have been slowed or put out due to the combination of variables that made them unstoppable: warm temperatures, extremely high winds, low humidity, mountainous terrain, and abundant fuel. According to CAL FIRE, this event was overwhelming, and there just were not enough resources. All told, the Tubbs, Atlas Peak, and the Partrick/Nunn's fires resulted in 1,051 structures lost or severely damaged, of which 611 were homes. In addition, 69,274 acres burned just in Napa County alone. Tragically, but miraculously, only 7 seven people died.

State Senator Bill Dodd (Napa), who was evacuated from his home during the fires, said the system's deficiencies need to be looked at closely.

"I think this warrants an investigation on why that happened," Dodd said. "We know because of climate change the fire season will be longer, so we need to build a robust system to handle the need. There are a lot of lessons we will learn from these events, from notification of people in their homes to mutual aid."[4]

The fact that so few died in the most ferocious fire of our time, certainly speaks highly of the dedicated, well-trained professionals in firefighting, law enforcement, emergency personnel, and partners around the state. The relationships they have established over the years ensured the best outcome in a terrible situation. Further, the Grand Jury recognizes the many brave citizens of

[4] *San Francisco Chronicle*, "Lawmakers to investigate response to Wine Country fire," Nov. 20, 2017

Napa County who took it upon themselves to help their neighbors flee the fires and comfort those who were physically, financially, and emotionally affected.

FINDINGS

The Napa County Grand Jury finds that:

F1 The fires that ravaged the North Bay during October 2017 were the most destructive in our history. Given the dry, ferocious winds, warm temperature, and our natural landscape, fires were predictable. Yet, there were no Nixle alerts preceding the fires.

F2 Reliance on the Nixle cellular communications platform proved to be insufficient in warning Napa County residents in a timely and accurate way. A small percentage of residents, and very few visitors, were registered, and for those in the danger areas, it became moot as the cell infrastructure quickly became inoperable.

F3 The understaffed OES personnel was initially hampered by the fire's fury and location, causing delay in issuing the first Nixle alert.

F4 While Napa County OES, the Sheriff's Department, the Fire Department, and other public safety agencies' have developed versions of disaster action and hazard mitigation plans, information about emergency alerts and warnings from these agencies is lacking.

F5 Since power, Internet and cell towers were lost in many areas of Napa County, local radio station KVON provided a valuable platform for fire updates, evacuation locations, and critical information from public officials.

F6 Proposed legislation in Sacramento is focused on numerous issues regarding disaster planning, including standardizing the approach to alerts since many disasters cross county lines.

F7 The professional, coordinated and extraordinary response by Napa County OES, law enforcement and fire personnel, focused on saving lives and livestock, resulted in minimal loss of life despite what the Napa County Fire Chief described as a "once in a lifetime" fire.

RECOMMENDATIONS

As the Grand Jury investigated the disparate and inadequate warning systems and procedures in place prior to the outbreak of the fires, many ideas and plans have surfaced to address their lack of effectiveness. These systems and procedures have received serious attention, and more importantly, there have been pro-active steps to improve them at the city, County, state and federal levels. The Grand Jury applauds these efforts.

Nevertheless, the Grand Jury offers the following recommendations to document key elements of disaster planning as outlined in this investigation so that there will be an on-going and thorough discussion and action on improving the over-all protection of life and property in Napa County.

The Napa County Grand Jury recommends that:

R1. Nixle or other alerts should always be sent out when there is an official red flag weather warning. The Napa County OES manager should investigate automating this capability in certain severe situations. Additionally, when this type of warning goes out, there should be notification sent to the Emergency Operations Center team to be prepared to turn up the center in the event a fire or other disaster erupts. Both recommendations should be addressed by October 31, 2018.

R2. Napa County OES should lead the effort to order and deploy iPaws, which will enable use of Wireless Emergency Alerts, throughout Napa County now that the FCC has mandated that it be improved. Further, OES should develop a check list and detailed procedures to coordinate its use among the multiple alert platforms and operators by December 31, 2018.

R3. Napa County should investigate or commission plans to deploy where feasible other alert and warning technologies such as mobile and fixed sirens, aerial drones, etc. to reach more residents in the event of power or cellular communications loss of service by March 31, 2019.

R4. Increase staffing for Napa County Office of Emergency Services through grants or reallocation of budgets for emergency response planning, education and training, and to update and expand written alert and warning policies and procedures on the appropriate public websites by June 30, 2019.

R5. Napa County should negotiate an agreement, in conjunction with the County's municipalities, to formally incorporate plans to utilize local radio station KVON into existing and future Disaster and Hazard mitigation plans in the County by June 30, 2019.

REQUEST FOR RESPONSES

Pursuant to Penal Code section 933.05, the grand jury requests responses as follows:

From the following governing bodies:

- Napa County Board of Supervisors: R3, R4, R5

INVITED RESPONSES

Pursuant to Penal Code section 933.05, the Napa County Grand Jury invites responses as follows:

From the following individuals:

- Napa County Executive Officer: F1 – F4, R1, R2

DISCLAIMER

Reports issued by the Grand Jury do not identify individuals interviewed. Penal Code section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Grand Jury.

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APPENDIX A : Warning Delivery Methods and Technologies

A variety of technologies are used for delivering warning messages in different areas of California, including:

In-Person Notifications – "Door-to-Door" notification, preferably by uniformed public safety personnel can be highly effective, especially when reaching people who are asleep or not reached by other warning media. These personnel should be trained in assisting individuals with access or functional needs and as well as people who speak languages other than English. This form of notification is labor intensive and time consuming.

Loudspeakers and Public Address Systems – Built-in audio announcement systems exist in many buildings and outdoor venues. These can be valuable provided a) the warning message is effectively written, and b) the amplified audio is intelligible. Public Address loudspeakers are sometimes attached to aircraft to notify people in more remote areas. Careful attention must be paid to the intelligibility of a message by those on the ground and keeping messages brief so that the entire message can be heard at a single point as the aircraft flies past. Loudspeakers systems can be very effective but constructing them to provide intelligible sound in complex acoustic environments can be technically demanding.

Telephone Notification – Many localities have a capacity for calling telephone numbers in an organizational database and playing an audio message. This is sometimes referred to as "reverse 9-1-1." Such systems can be very effective when notifying a known list of recipients such as the members of a team, organization or student body, and ad-hoc notification lists often can be develop for a specified geographic area. The possibility of precise geographic targeting of messages has made such systems extremely popular, although the precision and completeness of such notifications has dwindled somewhat in recent years due to the growth in Voice-over-IP and wireless phone adoption. Telephone notification systems can provide extensive warning information, but the speed of calling large groups can be limited by the local telephone switching infrastructure or the availability of the person(s) initiating the calls.

Public Sirens – Often used for outdoor alerting, the effectiveness of sirens in penetrating well-insulated homes and buildings can be limited. Sirens can be programmed to emit multiple distinctive sounds, but associating individual sounds with particular meanings can be problematic, requiring intensive public education. Likewise, visitors from other areas may not recognize the meaning of a siren alert. Some siren systems are combined with a voice public address system, which can provide additional information once the siren sound attracts attention. However, reverberation among buildings and sound absorption by foliage can limit the intelligible range of voice messages. Sirens can be very effective for alerting people outdoors in parks or other public spaces.

Traditional Radio and TV Broadcasts – The national Emergency Alert System (EAS) enables the President of the United States, state and local authorities to interrupt all broadcasts in one or more counties with an emergency announcement. Participation in local use of EAS is voluntary

on the part of broadcasters. EAS messages are delivered to all listeners or viewers of stations serving a targeted county; many listeners may perceive alerts as irrelevant to their particular location. Satellite and cable TV carriers also participate in EAS, but their capacity to geographically target dissemination is even more limited. EAS can distribute warning messages over large areas very quickly but cannot reach people who are not watching or listening to broadcast media, particularly people who are asleep.

Cable TV Override – In addition to participation in the EAS, many cable TV systems have a provision by which local authorities can interrupt the audio, and sometimes the video, of all channels with emergency notifications. The strengths and weaknesses of these systems are similar to those for EAS. An additional consideration is the risk of blocking or otherwise limiting access to news and other valuable information.

Wireless Alerts and Texting – Alerts can be targeted to cellphones in a geographic area via the federal Wireless Emergency Alerts (WEA) system, best known for Amber Alerts. A unique alert tone and vibration is accompanied by a brief (90 character) text message. This is a relatively new system (implemented in 2012), the speed, text character limitation and precision of targeting of alerts has been under scrutiny by local emergency operators.

Alternatively, other non-government systems utilize Short Message Service (SMS) “text” messaging addressed to pre-determined wireless devices via a subscription or "opt-in" registration, such as **Nixle**. These alerts lack the unique sound and display of WEA alerts, and there is no mechanism for ensuring that a received “text” alert is authentic. WEA and other alerts to wireless devices can reach targeted audiences very quickly, but the limited length of WEA /SMS messages makes them most effective when used in concert with EAS or other systems.

Internet-based Services – A wide array of internet-based alerting systems have been devised, including alerting via Internet advertising channels. These tend to target pre-identified users of particular applications, although the advertising channel approach can theoretically target recipients geographically across a wide range of websites, games and other applications. Such systems are generally not inter-operable with each other, which limits the percentage of the at-risk population they can serve.

Changeable Message Signs – Remotely programmable text and graphic displays exist along many highways, at mass transit stations and other public areas. Many of these signs can only display very short texts. More sophisticated signs are deployed by advertising firms, which might also be used for public alerting. Specialized “kiosk” devices such as lottery displays also exist and might be used for public alerting. Such displays are effective at disseminating location-specific information but may not be seen by everyone at risk.

Less Orthodox Alternatives – Especially when addressing communities with well-developed cultural institutions it is wise to consider what alerting and communication channels are already in place and familiar and to integrate them into a comprehensive warning system. For example, existing church or community-center bells or foghorns may be useful in directing local people’s attention to a hazardous situation.
Source: California State Public Alert and Warning System Plan (2016)

APPENDIX B: Nixle Alerts from October 8, 2017 to October 10, 2017

CITY OF NAPA: Crews on scene at major fire in Atlas Peak area. Stay clear of area. More info to follow. www.nixle.us/9MHQR **October 8, Sunday 2017** 11:00 pm

NAPA CO SHERIFF: Fire in Calistoga, Knights Valley to Tubbs Lane. Evacuations underway. Evacuation Center at Napa County Fairgrounds. www.nixle.us/9MHRF 11:31 pm

NAPA CO SHERIFF: FIRE. Silverado Trl Closed at Yountville Cross Road. All Soda Canyon Residents need to evacuate. Evacuation Center 2590 1st www.nixle.us/9MHRM 11:34 pm

CITY OF NAPA: Fire in Napa Co at Partrick Road, city resources on scene assisting. Evacuation center @ 2590 1st St. www.nixle.us/9MHSM **October 9, Monday 2017** 12:24 amNAPA CO

SHERIFF: Mandatory Evacuation of Circle Oaks West to Atlas Peak. Evacuate to the East and shelter at Calistoga Fairgrounds. www.nixle.us/9MHST 12:30 am
NAPA CO SHERIFF: Mandatory Evacuation of Partrick Road. Evacuation Center/Shelter available at 2590 1st Street at Crosswalk Church. www.nixle.us/9MHTK 12:59 am

CITY OF NAPA: Mandatory Evacuation of Partrick Road. Evacuation Center/Shelter available at 2590 1st Street at Crosswalk Church. www.nixle.us/9MHW5 1:10 am

NAPA CO SHERIFF: Advisory Evacuations for Vichy Ave, Hagen Rd and all the Avenues. Evac Centers: 2590 1st Street at Crosswalk Church www.nixle.us/9MHWP 1:31 am

NAPA CO SHERIFF: Hwy 128 hard closure at Tubbs Lane. Mandatory Evacuation 128 west to the city of Santa Rosa. www.nixle.us/9MHXD 1:50 am

NAPA CO SHERIFF: Napa County Animal Shelter at 942 Hartle Ct will shelter dogs, cats, rabbits and other household animals. www.nixle.us/9MHYK 2:24 am

NAPA CO SHERIFF: Mandatory Evacuations: Old Sonoma Rd to Buhman Ave, Dealy Lane, Henry Rd, Coombsville Rd, Wild Horse Valley Rd, Carneros Inn. www.nixle.us/9MJ2X 3:32 am

NAPA CO SHERIFF: Voluntary Evacuations Hwy 29 North of Tubbs Lane, Evacuation Center at Calistoga Fairgrounds. www.nixle.us/9MJ3T
3:54 am

CITY OF NAPA: Montecito area of Napa is now being evacuated. Please evac to Crosswalk Church, 2590 1st St. More info to come. www.nixle.us/9MJ43 4:01 am

CITY OF NAPA: NEW evacuation center now open: Napa Valley College GYM. Crosswalk Church is full. www.nixle.us/9MJ5F 4:36 am

NAPA CO SHERIFF: Montecito area now being evacuated. Crosswalk Church is full. New Evacuation Center at the Napa Valley College GYM. www.nixle.us/9MJ5M 4:39 am

NAPA CO SHERIFF: Wooden Valley area is being evacuated to Solano Comm College Library parking lot, 4000 Suisun Valley Rd, Fairfield CA www.nixle.us/9MJ7K 5:18 am