



**JOINT LEGISLATIVE COMMITTEE ON
EMERGENCY MANAGEMENT**
CHRISTY SMITH, CHAIR
ASSEMBLYMEMBER, THIRTY-EIGHTH DISTRICT

ASSEMBLY
CECILIA M. AGUIAR-CURRY
HEATH FLORA
ADAM C. GRAY
TOM LACKEY
MELISSA A. MELENDEZ
FREDDIE RODRIGUEZ

SENATE
HANNAH-BETH JACKSON
VICE CHAIR
PATRICIA C. BATES
BILL DODD
CATHLEEN GALGANI
MKE MCGUIRE
RICHARD PAN
JEFF STONE

INFORMATIONAL HEARING
TUESDAY, FEBRUARY 11, 2020, 1:30 PM
CALIFORNIA STATE CAPITOL, ROOM 126

“California’s Mutual Aid System: Are Today’s Wildfires Exceeding Our Ability to Protect California from Fire?”

California’s mutual aid system was established to facilitate the rendering of aid to agencies or jurisdictions stricken by an emergency when its resources are likely to be overwhelmed or inadequate. Mutual aid can be for fire services, law enforcement, health care, emergency management assistance or other services. For firefighting, this is a system where for nearly 70 years, California’s fire departments have fought blazes statewide through a codified system of neighbor helping neighbor.

The Joint legislative Committee on Emergency Management hearing, “California’s Mutual Aid System: Are Today’s Wildfires Exceeding Our Ability to Protect California from Fire?” will examine how personnel and equipment is being sent to assist communities in the fighting of fires and what changes are needed to improve mutual aid.

There have been allegations and concerns that the mutual aid system for fighting fires is not functioning as efficiently as it should, especially during large, disastrous fires. The “new normal” of wildfires is seeing allegations that mutual aid is being withheld because local fire departments are concerned about the possibilities of fires in their own backyard.

The capacity of our mutual aid system is also finite and there have been several instances where the personnel and equipment assets within the system have been virtually depleted. It has been reported that fire departments are providing assistance to other fire agencies outside of the mutual aid system. They indicate the federal computer system and the mutual aid system is can create delays in receiving immediate aid.

The ability of the State of California and our local fire departments to send aid throughout the state as part of the mutual aid system is vital in saving lives and protecting property.

The Committee will hear from our fire chiefs, CAL FIRE, OES and will ask, “What can California do to protect and improve the mutual aid system?”

Response to the Woolsey Fire

In emergency services, mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries. To examine how fire mutual aid is doing in California it is instructive to look at an after action report on the Woolsey Fire that burned in Los Angeles and Ventura counties in November of 2018.

Los Angeles County released the report on November 17, 2019. Titled, "Los Angeles County After Action Review of the Woolsey Fire Incident" it is a comprehensive and thorough examination of the problems that Los Angeles County faced during the Woolsey Fire. It identifies problems and makes recommendations on what changes should take place in the future. Ventura County has also released an after action report on the Woolsey fire.

The Woolsey fire broke out in Ventura County on November 8, 2018 and rapidly burned through large portions of Ventura and Los Angeles counties. This is the same date that the Camp Fire broke out and devastated northern California communities. Both wind driven fires literally exploded and led to extensive requests for mutual aid fire assistance from other departments and agencies throughout the state.

The Fires

The Woolsey Fire burned in Los Angeles and Ventura Counties from November 8, 2018 through November 21, 2018 and consumed 96,949 acres of land, destroyed 1,643 structures, killed three people, and prompted the evacuation of more than quarter of a million people.

The Camp Fire that started on November 8, 2018 and was 100% contained on November 25, 2018 is the deadliest and most destructive wildfire in California history. The fire caused at least 85 civilian fatalities, injured 12 civilians, 2 prison inmate firefighters, and 3 firefighters. It covered an area of 153,336 acres (almost 240 sq. miles), and destroyed 18,804 structures, with most of the damage occurring within the first four hours. The communities of Paradise and Concow were almost completely destroyed, each losing about 95% of their structures. The town of Magalia also suffered major damage, with roughly half of its structures destroyed.

In addition to these fires, another fire, the Hill Fire, broke out in Ventura County earlier on the same day and consumed 4,531 acres of land.

Both the Woolsey and Camp Fires were large, extremely dangerous, wind driven fires that quickly overwhelmed local and state firefighting resources. Calls for mutual aid assistance went largely unanswered in the early stages of the fires.

Mutual Aid

Mutual aid is a system where local government entities can request and rely on the assistance of other agencies during instances that exceed their ability to respond to an emergency.

In a letter to fire chiefs regarding the California Disaster and Civil Defense Master Mutual Aid Agreement, The Governor's Office of Emergency Services (OES) states:

"Mutual Aid" is utilized when an emergency incident is likely to exceed, or has exceeded, the ability of a responsible entity to control it. The basic assumptions are that a local government entity has taken all actions within its capacity to mitigate a potential or ongoing emergency, and has reasonably exhausted local resources before requesting outside assistance through the California Fire Service and Rescue Emergency Mutual Aid System.

The "Los Angeles County After Action Review of the Woolsey Fire Incident (Los Angeles County AAR) states:

Since the early 1970s, the California mutual aid system was designed for agencies to help each other. Before the deadly fires of the past few years, there were typically not multiple fires that would catastrophically empty the mutual aid system. However, due to the growth of fires, the changes to fire weather severity, and economic pressures on local government, the California mutual aid system has seen a decline in mutual aid being available during multiple fire events.

The mutual aid system has worked well in the past, but the "new normal" of devastating fires in California has exposed challenges in how our fire agencies are able to provide aid and assistance especially when multiple large fires are burning.

As detailed in the Los Angeles County AAR, once the Woolsey fire broke out, requests for mutual aid were immediately submitted. Personnel and firefighting equipment however was not made available to Los Angeles and Ventura counties at levels needed to respond to the Woolsey fire. The report states in part, "Simultaneous neighboring and northern California fire incidents caused fire command's mutual aid requests to go significantly unfilled. Of those filled, the majority arrived after the fire reached Malibu." During the first two days of the Woolsey Fire, 53 percent of the fire engine mutual aid requests were unfilled and the fire burned 96 percent of its final footprint during this time.

The report adds, "When the Woolsey Fire needed its initial unit request number and hundreds more, many agencies could not fulfill the request. Other jurisdictions may not have been willing to release additional firefighting resources due to their own exposure to fires during the Santa Ana wind conditions and the need to maintain staffing levels for regular life safety needs."

The ability of California's mutual aid system to bring equipment, firefighting personnel and resources to fires to other local entities throughout the state is vital in protecting life, property and our safety. The large firestorms that erupted in November of 2018 in both northern and southern California clearly proved that our firefighting mutual aid capacity is limited and that these finite resources may mean serious unmet needs in times of fire disaster.

The Los Angeles County AAR serves to highlight the concerns that our fire departments are now experiencing with California's fire mutual aid system. The increasingly catastrophic windblown wildfires of the last fifteen years, and especially the last three years, has put California's system of mutual aid under stress. Mutual aid is sometimes not forthcoming or delayed because fire chiefs may be reluctant to assist their counterparts because of concerns for their own community's safety, because of systemic delays or delays required in moving personnel and

equipment to locations hundreds of miles away. It should be noted that for many of our “new normal fires” the most critical and dangerous period of the fire is the first hours to twenty-four hours.

Some of California’s fire chiefs allege that the system has become weakened over the past 20 years. They add that the days of sending every available resource to help put out a neighbor’s fire without question have been replaced with hesitation and concerns that assistance should be withheld to either save money, or keep firefighting assets close by in case another fire erupts locally.

A Los Angeles Time’s article published November 9, 2019; “Growing fire threat makes California departments reluctant to help each other” provided comments from chiefs regarding the mutual aid system.

“In 2003 in San Diego, I was a battalion chief. The way we supported mutual aid was, if you asked, we sent,” said Brian Fennessy, now chief of the Orange County Fire Authority. “We didn’t talk about drawing down [resources]. How far should we allow ourselves to be drawn down? That wasn’t even a conversation.”

In the article Chief Fennessy indicated that a 2003 firestorm was a game changer for mutual aid in his community because in a matter of days the Cedar Fire destroyed thousands of homes and burned hundreds of thousands of acres across San Diego and San Bernardino counties. Because that fire was the one of the last of the big blazes to ignite in California that year, San Diego County found itself outgunned because a majority of its force was deployed fighting fires to the north.

With today’s fast moving mega fires there is concern that local political pressure or criticism might force a city or county fire district to not let their firefighting assets get drawn down to a point where they can’t provide basic fire protection services in their own communities. This pressure to protect their own backyard could mean that instead of sending a large number of strike teams to other parts of the state; a department might send no teams or a smaller number.

Fire chiefs have also expressed their opinion that the federal government’s mutual-aid computer program, the Resource Ordering and Status System (ROSS), is antiquated and that it is better designed for logging pay and hours than rapidly shifting resources real time across multiple counties. Operated by the National Wildfire Coordinating Group, ROSS is a nationwide, web-based database system for managing wildland firefighting resources. It was designed to improve the efficiency of borrowing and sending home of fire equipment in a large, campaign-type fire. The Interagency Resource Ordering Capability (IROC) will be replacing ROSS early this year. It is supposed to provide a modern tool to support the interagency wildland fire community in ordering, tracking and managing resources in response to wildland fires and all-hazard incidents.

In a perfect world, the computer system should be able to quickly identify which fire departments have available assets positioned nearby to respond to a developing blaze, take into account weather conditions and other factors and alert them quickly. Instead, there has been criticism that the existing ROSS system is so outdated that it hinders them from getting to the scene of a fire in a timely manner. We will have to wait to see how IROC performs.

As a workaround to delays in receiving mutual aid, the chiefs of Southern California’s biggest firefighting agencies — Los Angeles, Ventura and Orange counties, along with Los Angeles City

Fire — say they now circumvent the mutual-aid system altogether in the first stages of fighting a fast-moving fire.

The Los Angeles Times article states:

When the Saddleridge Fire broke out in Sylmar in late October of 2019, Fennessy said, he dispatched firefighters before the request arrived at his station. When the 46 Fire erupted in Riverside County in the middle of the night later that month amid powerful winds, Los Angeles County sent two teams of engines and firefighters even though the request didn't reach dispatchers until 9:30 a.m., officials said.

“From the perspective of accountability and tracking resources, it's a good tool,” Los Angeles County Fire Chief Daryl Osby said of the mutual-aid software. “But from a perspective of getting resources to an incident quickly, it creates delays.”

The system is essentially facing challenges on two fronts: not enough resources and aging technology.

Fire departments when they request mutual aid have to negotiate system software to deploy them. Fire chiefs allege that there is an inherent delay built in to an outdated computer system. When the situation is urgent, local agencies opt to work around it in the short term.

As a result, local fire chiefs will contact one another directly when resources are needed immediately. In one instance a Los Angeles Fire Department Chief stated that he texted Ventura County Fire when the Easy Fire began and showed him a projection of where it would go and told him they were sending a strike team and a helitanker to Ventura County. On the same text, two other fire chiefs indicated they were sending two strike teams each.

Fire chiefs indicate that submitted requests for mutual aid can take hours to flow through the system. The Los Angeles County AAR stated that at one point the Woolsey Fire spread three miles in fifteen minutes. This highlights the fact that even a delay of two hours can have serious consequences in fighting a fire. After the 2007 recession, when local governments everywhere began to tighten their spending, a culture of “waiting for the order to come through” took hold when the requests were big and far away.

The Los Angeles Times article also provided, “I may not know the chiefs so they are essentially waiting for the coordination center to fill them in,” said Glendale Fire Chief Silvio Lanzas, who similarly relies on close relationships with his neighboring departments. “There is definitely a slowdown in the resource ordering process.”

What the chiefs are finding is, that in an emergency, it is much quicker to call their neighbors for help.

Going outside of the mutual aid system to obtain needed fire support is not optimal in that it does not let the system know where firefighting assets are and what is available to be deployed to other agencies.

Using local assets first is actually how the mutual aid system is supposed to work. Each fire department is expected to use their own resources first. If these resources are not sufficient then other local agencies, through the mutual aid system, may be asked to assist. Additional mutual aid should then come from within their local mutual aid region, then from other state mutual aid

regions. If the event is bad enough, mutual aid may come from other states and federal government sources.

The issue of how much mutual aid is available to fight fires was highlighted in the Los Angeles County AAR on the Woolsey Fire. In the fire's first 10 hours, commanders requested 299 additional fire engines and received only 42 percent of what they had asked for. By the time the worst of the blaze was over, requests for 874 engines had gone unfulfilled; in other words, 50 percent of what commanders asked for had never arrived.

Some fire chiefs are indicating that the farther away a request for resources goes from their community, the less likely they are to receive assistance and the longer it will take for the requested firefighters to arrive. This occurs in part because fire departments have realized that when their units and firefighters are deployed to areas of the state far from home, they are often away for weeks at a time.

This creates a sense of provincialism in that there is an increasing reluctance on the part of fire departments to send firefighting resources far away to fight fires for extended periods of time. They are more likely to send aid if it is to a neighboring community even if they are experiencing bad fire conditions such as high temperatures or winds. During the recent Kincadee Fire in northern California, a southern California fire chief indicated that his department sent just one strike team to Sonoma County; adding that they did not send more teams because of the weather conditions that were forecast locally. The reality is that if deployed units are nearby there is a possibility that they could come back sooner if there was a local fire.

The Los Angeles County AAR details a dramatic increase in the number of mutual-aid requests that have gone unfulfilled since at 2012. In 2012, requests for 134 fire engines and water tenders were unfulfilled through the system. By 2015, the year that the wind-driven Valley Fire burned Clear Lake, that number climbed to 954.

In 2016, the Soberanes Fire took months to extinguish and unfilled mutual-aid requests jumped to more than 3,000 engines. The number hit an all-time high the next year when requests for 6,134 engines and water tenders went unfulfilled amid the fires in the wine country and the Thomas fire in Ventura and Santa Barbara counties. Unfilled mutual-aid requests dropped to 2,724 last year.

The following pages are pages 30-21 of the Los Angeles County AAR that specifically relate to mutual aid requests and "unable to fill" responses.



afternoon and, as the fire storm winds abated a little, other air resources were brought in. Much of this was not noted on the ground due to the smoke conditions.

2.3.5 The Mutual Aid Response

Since the early 1970s, the California mutual aid system was designed for agencies to help each other. Before the deadly fires of the past few years, there were typically not multiple fires that would catastrophically empty the mutual aid system. However, due to the growth of fires, the changes to fire weather severity, and economic pressures on local government, the California mutual aid system has seen a decline in mutual aid being available during multiple fire events.

Table 3—Approximate of Total California Fire Engines (Type 1, 2, & 3) by Agency

Agency	Number of Engines
Local Governments	5,928
Cal OES	154
CAL FIRE	343
California Department of Corrections (Prison crews rarely leave site)	74
U.S. Forest Service	277
U.S. Bureau of Land Management	28
Bureau of Indian Affairs/Tribal	24
National Park Service	17
FWS	14
Department of Defense	41
Total	6,900*

*The 6,900 total number of fire engines in the aid system represents seasonal resources and total inventory of resources. Not all fire engines are available for outside agency and immediate response.

The following table shows the historical count of mutual aid deployed to major fires and fire siege events.



Table 4—Past California Fire and Rescue Mutual Aid System Deployments

Fire or Fire Season	Number of Deployments
1991 East Bay Hills Fire	410 engines
1992 Fire Season	1,800 engines
1993 S. CA Wildfire Siege during October/November	1,525 engines
2003 Fire Siege	1,160 engines
2007 Fire Siege	1,150 engines
2008 Fire Season	4,895 engines
2009 Fire Season	2,125 engines
2010 Fire Season	475 engines
2011 Fire Season	495 engines
2017 Fires from 12/4/17 through 12/6/17 – Thomas (616), Creek (217), Rye (86)	919 engines
2018 Camp Fire (Paradise)	622 engines
2018 Woolsey Fire	619 engines

The following table shows the recent history of the California Mutual Aid system’s inability to send large quantities of firefighting units, which has become a serious fire command issue.

Table 5—California OES Unable to Fill (UTF) Statewide Resource Summary

Year	2012	2013	2014	2015	2016	2017	2018
Engines / Water Tenders	134	214	403	958	3,029	6,134	2,724
Overhead/Command, etc.	1,073	1,404	2,315	4,758	4,034	4,867	3,375
Total	1,207	1,618	2,718	5,716	7,063	11,001	6,099

As seen in Tables 3, 5, and 6, the system cannot deploy sufficient resources to large incidents. This trend affected the Woolsey Fire response.

The Woolsey Fire unified command team *requested mutual aid early, often, and in high numbers*. Because the Hill Fire was more dangerous at first, it received the “normal, local” mutual aid that all Region 1 departments had pre-authorized to their dispatch centers to send the morning of November 8 as the departments prepared for a severe fire weather day. In fact, the Hill Fire received a five-engine strike team from LA County Fire as first responders. That team was already on the Hill Fire when the Woolsey Fire started. It was released back to the Woolsey Fire later on Thursday evening. From the start of the Woolsey Fire, there was frequent communication between the Incident Commanders of the Hill Fire and Woolsey Fire.



Los Angeles County

After Action Review of the Woolsey Fire Incident

When the Woolsey Fire needed its initial unit request number and hundreds more, many agencies could not fulfill the request. Other jurisdictions may not have been willing to release additional firefighting resources due to their own exposure to fires during the Santa Ana wind conditions and the need to maintain staffing levels for regular life safety needs. As the Hill Fire became less threatening, Hill Fire command shifted units to the Woolsey Fire.

During the first two days of the Woolsey Fire, 53 percent of the fire engine mutual aid requests were unfilled. That totals a staggering 874 units, and the fire burned 96 percent of its final footprint in that time. LA County Fire deployed every unit it could from its own stock, including repairing units in the shop and lowering resources in multiple stations across the County. LA County Fire fielded 100 engines/units to the Woolsey Fire and still maintained coverage of its 2,200 square-mile area for routine 9-1-1 incidents. In addition, LA County Fire double shifted each of its assigned units to forego rest periods to ensure all 100 engines were on the road operating continuously within the impacted communities.

2.3.6 Firefighting Tactics in Woolsey

In the hours from ignition to the late evening on Thursday, November 8, fire command attacked the fire directly with the normal range of tools and procedures, all of which were well pre-planned in the Highway 101 corridor. The winds were variable which seemed to suggest the normal wildfire approach with a northeast wind would work. Three factors broke the plans:

1. Very challenging terrain, especially after dark on Thursday / Friday morning
2. Winds shifting and increasing
3. An uninterrupted, open vegetation fuel bed line from the ignition area straight to Point Dume, as shown in Figure 6

Conclusion

California's mutual aid system has been and still is an important part of our firefighting arsenal. It is literally a system of "neighbor helping neighbor" in times of need and disaster. This system however, is now showing the strains placed upon it by the huge, fast moving and devastating fires of the past few years. Hundreds of thousands of acres burned, thousands and thousands of structures destroyed, and the deaths of many Californians has created pressures on our fire professionals to act outside of the mutual aid system. Concerns for protecting your own backyard in times of devastating fires and the overwhelming nature of these emergencies has meant that desperately needed fire teams are sometimes not available. The new normal of wildfires has also proven that our mutual aid system is finite and cannot help everyone when they need it when state resources are overwhelmed.

This hearing will seek testimony from our fire professionals and our state agencies on the future of mutual aid what what California needs to do to ensure that maximum resources are available to our communities in time of emergency.

Attachment A

How California Governments Respond to Disasters

Features of State's Disaster Response System

When a disaster strikes in California, government agencies are responsible for reacting quickly to help to insure the safety of people and limit damage to their property. In order to facilitate this, the state uses a system of disaster response known as the Standardized Emergency Management System or SEMS, which sets out the ground rules for responding to various types of emergencies.

The state's system of disaster response starts at the local level. It has been said that, "all disasters are local." This means that when a disaster occurs it is generally a local government agency that is alerted to the incident through calls to the 9-1-1 system and is initially tasked with a response. Upon receiving such the alert, local first responders such as police or fire departments will be dispatched to respond to the incident. This means that incidents like small fires or localized flooding will be handled only by local first responders. In these cases, no other assets or personnel will be called in to assist.

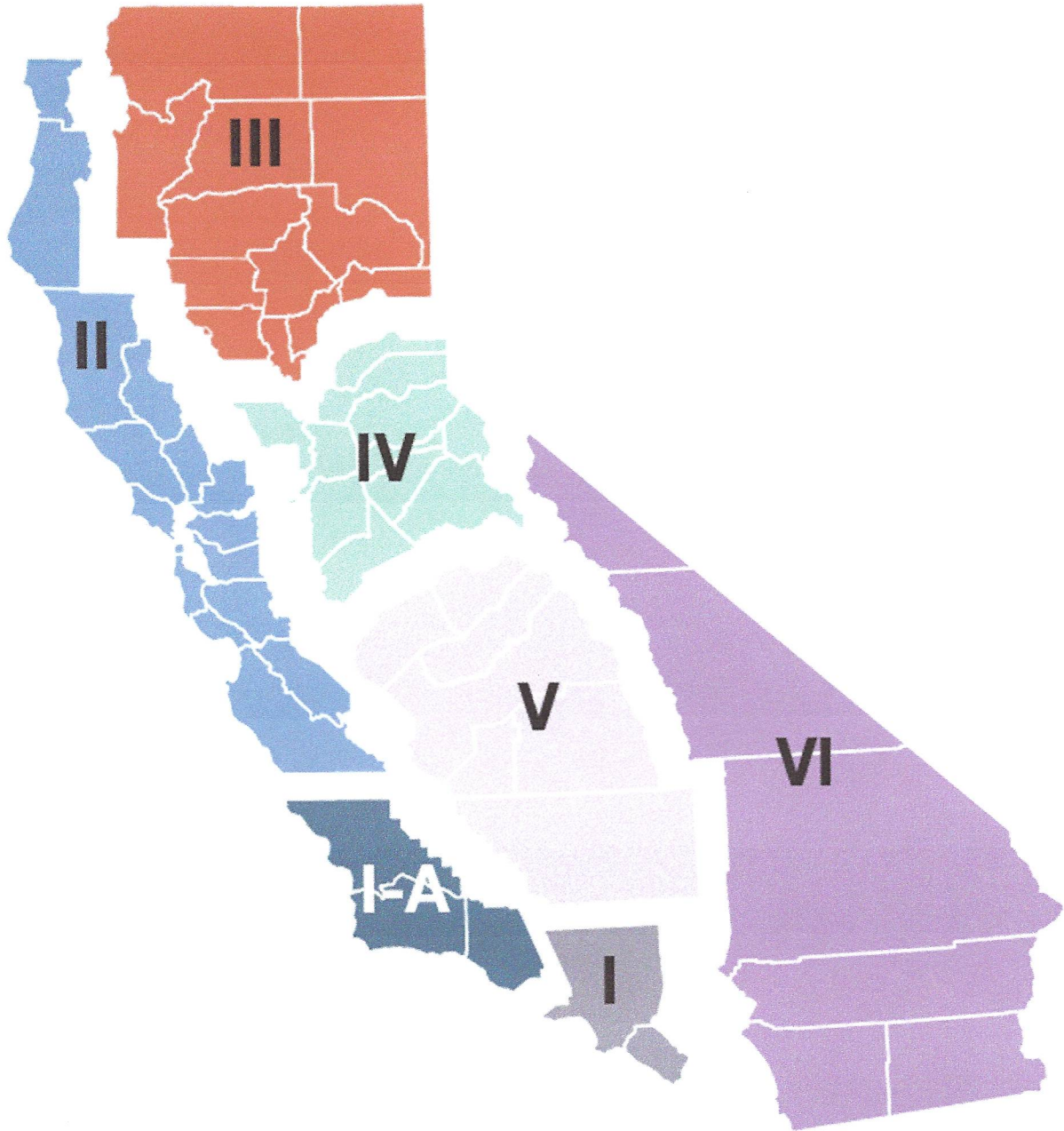
When a disaster incident is large enough that it overwhelms or might overwhelm a local government's capacity to respond, the local government can request additional resources, such as emergency responders or equipment, from other governmental entities through California's mutual aid system. This voluntary system allows communities that have depleted all of their local resources to access assistance from other communities. In turn, communities that participate in the mutual aid system are expected to reciprocate and provide assistance when requested and reasonably available to others when they need it.

When a jurisdiction needs additional assistance to respond to emergencies, it typically requests it first from other local agencies in their county (known as the Operational Area). If a disaster incident requires additional assistance beyond what is available within the county, the Operational Area can seek assistance from other Operational Areas within its predefined mutual aid region. Their request for assistance will be facilitated by the regional mutual aid coordinator.

Figure 1 shows the state's six mutual aid regions for fire and rescue assistance. There are seven regions for law enforcement assistance. This accomplished by splitting one fire and rescue mutual aid region into two regions for the purposes of law enforcement. The remaining five mutual aid regions are the same for fire and rescue and law enforcement.)

Figure 1

California's Mutual Aid Regions



Note: Mutual aid regions 1 and 1-A are combined for fire and rescue but not for law enforcement.

LAO'S

If the resources within a mutual aid region are insufficient because the disaster has grown very large, regional mutual aid coordinators work with state-level staff to request additional resources

from other areas, including local governments in other parts of the state, various state agencies, other states, the federal government, or other countries.

There are various agreements that govern the provision of mutual aid by these entities, such as the Master Mutual Aid Agreement or MMAA - which governs intrastate mutual aid) and the Emergency Management Assistance Compact or EMAC -which governs interstate mutual aid. These agreements often define when mutual aid will be provided and the conditions under which it is to be reimbursed. In some cases, state or federal funds reimburse entities for providing mutual aid, such as when state or federal governments make certain disaster declarations.

The Master Mutual Aid Agreement (MMAA).

The MMAA creates a formal structure where each jurisdiction retains control of its own facilities, personnel and resources, but may also receive or render assistance without the expectation of reimbursement, to other jurisdictions within the State. A statewide mutual aid system, operating within the framework of the MMAA, allows for the mobilization of resources to and from local governments, operational areas, regions and state to provide requesting agencies with adequate resources.

The system includes several discipline-specific mutual aid agreements, such as fire and rescue, law, medical, building and safety, coroners, emergency managers (EMMA) and public works. These systems are consistent with NIMS and SEMS at all levels. In addition to the mutual aid agreements that are in place within the State of California, the Governor signed the Emergency Management Assistance Compact (EMAC), which allows California to participate with the other states in a nationwide mutual aid system.

Mutual Aid Regions

Mutual Aid Regions I-VI were established in California under the Emergency Services Act and each contains designated counties. To facilitate mutual aid, discipline-specific mutual aid systems work through designated mutual aid coordinators at the operational area, regional and state levels. The basic role of a mutual aid coordinator is to receive mutual aid requests, coordinate the provision of resources from within the coordinator's geographic area of responsibility and pass on unfilled requests to the next level. Mutual aid requests that do not fall into one of the discipline-specific mutual aid systems are handled through the emergency services mutual aid system by emergency management staff at the local government, operational area, regional and state levels.

Attachment B

Key findings of the “Los Angeles County After Action Review of the Woolsey Fire Incident.”

The Los Angeles County AAR is 203 pages long and deals with many different issues of emergency response, from firefighting, to law enforcement, communications and other important issues. Los Angeles County has done an admirable job of reviewing the entire emergency response to the Woolsey Fire. Attachment B highlights and comments on their review .

On pages 2 of the Executive Summary states:

While the Los Angeles County Fire Department (LA County Fire), the Los Angeles City Fire Department (LA City Fire), and the Ventura County Fire Department (Ventura County Fire) regularly plan for and practice their response to a large fire in the region, they could not have planned for a complete exhaustion of California’s limited firefighting resources brought on by a regional wildfire weather threat in conjunction with the Camp Fire, a mass casualty shooting in Ventura County, and the Ventura County Hill Fire, which began just before the Woolsey Fire started.

As is the case in all fires, the responding fire departments’ top priority was to protect lives. During the initial stages of the Hill and Woolsey fires, all three departments were engaging in fire perimeter control, structure defense, and life safety actions. However, as the Woolsey Fire developed, the Camp Fire and Hill Fire consumed significant mutual aid resources and dry, northeast winds covered much of California, causing extreme fire behavior. As a result, by 2:30 PM on November 8, the southern California agencies that provided mutual aid resources to the Hill Fire now knew that no central or northern California agencies could send help south, and thus were very cautious about sending more of their resources to yet another local fire, which would leave their local areas vulnerable to the same conditions. Approximately 50 percent of requested resources were provided to the Woolsey Fire. Thus, as the Woolsey Fire grew Thursday evening, the fire services mutual aid system was already exhausted.

Comment: The report acknowledges that during extreme fire disasters, our mutual aid system can reach a point of exhaustion and may not be able to provide fire mutual aid necessary to respond to fires throughout California. Because of the Camp Fire, agencies in southern California that had sent aid to the Woolsey fire knew that they would not receive aid if a fire occurred in their own community.

Page 3 continues:

This necessitated the Woolsey Fire command team to strategically shift all resources to prioritize life safety as the fire rapidly grew, fanned by the Santa Ana winds gusting over

50 miles per hour. This strategy, along with a large, two-county sheriff's department evacuation force, successfully evacuated over a quarter of a million people and their animals from harm.

The initial emergency services response to the Woolsey Fire from two counties and the City of Los Angeles was proportionate to the initial fire; the experienced departments were ready and had planned for a severe fire weather day. Yet, the incident still presented unprecedented complexities:

- Multiple agencies (fire services, law enforcement, public works, and animal services) experienced an incident speed that, at times, outpaced their historically strong response efforts.
- Lives, structures, and critical infrastructure were threatened in the initial hours.
- Extensive evacuations across a multiple-jurisdictional area were required.
- Extensive infrastructure damage, at times, affected field operations, detoured evacuations, and delayed repopulation.
- The loss of the electrical system, due to wind and burned-down wooden power poles, created multiple challenges.
- Simultaneous neighboring and northern California fire incidents caused fire command's mutual aid requests to go significantly unfilled. Of those filled, the majority arrived after the fire reached Malibu.
 - Large Unable to Fill (UTF) mutual aid fire engine orders:
 - November 8: 175 engines UTF (58 percent)
 - November 9: 289 engines UTF (50 percent)
 - November 10 Noon: 874 engines UTF (53 percent)
- Relative humidity (RH), which plummeted to five percent, at times worsened the dry tinder fuel beds, many of which had not experienced fire for ten to forty years.
- Winds approaching hurricane force speeds and darkness Thursday evening combined to severely limit fixed-wing and rotor-wing aircraft firefighting drops, except for three LA County Fire Firehawk helicopters and LA City Fire helicopters.
- Although LA County Fire pulled as many resources as possible from its other fire stations to attack the Woolsey Fire, it was still required to maintain the resources necessary to respond to the nearly 1,100 daily 9-1-1 calls throughout the Department's 2,200-square-mile jurisdiction.
- All County personnel had to remain fully engaged without relief on the fire in the initial period.

Comments: This extremely fast-paced fire quickly outpaced the ability of Los Angeles County to respond and mutual aid requests were not significantly filled by other agencies. This caused county personnel to remain on duty for extended periods of time and meant there were not enough resources on hand. The first responsibility or priority of our fire departments is to protect lives, not fight fires. The number of 9-1-1 calls and the number of individuals who did not heed evacuation orders required Los Angeles County to strategically shift resources to protect people who often did not require assistance. This took valuable personnel and firefighting equipment away from fighting the fire.

Page 5 on Expectation Versus Reality.

- In large, dynamic wildfires, some life and structure loss are a tragic but expected possibility; however, what occurred in less than 24 hours was not anticipated by any prior plan or preparedness exercise. Three of the four historic Santa Monica fire corridors burning at once was beyond prior experience.
- The California Fire Master Mutual Aid System is a worldwide model; yet, contributing factors over two decades inhibited rapid resource movement to the Hill Fire and Woolsey Fire commensurate with each fire's rapid pace.
- The expectation of round-the-clock electrical power and internet connectivity became a myth, with no quick fallback for the public and emergency responders.
- Social media has led people to expect access to real-time information; yet, the infrastructure and processes could not meet the fire storm's pace demands.
- Throughout California, no single public communication system exists that successfully crosses social, economic, age, and generational abilities to receive emergency information.
- The public has not been educated and trained enough regarding evacuation routes and does not understand the complexities of returning. These unmet expectations, and others regarding the level of firefighting resources, are causing some people to consider ignoring the next evacuation orders.

Comments: The new normal of today's fires include huge firestorms that spread extremely fast and go beyond anything that our fire departments have considered or trained. The Woolsey Fire was completely beyond what Los Angeles County had experienced in the past.

California's mutual aid system is now similarly becoming unprepared for the new normal of today's fires. The system is accused of being slow to respond to requests for aid to fight fires that travel fast (at one point the Woolsey Fire traveled three miles in 15 minutes). Even delays of hours processing a request can mean the difference in lives and property lost. The new mega fires are not only causing other local agencies to become reticent to send aid, the time required to shift assets from one part of the state to the other might mean they will arrive late for the crucial early hours or days of a fire.

Los Angeles County recognizes the problems that California is facing in getting emergency alerts out to the public. There is no one communication system that can adequately reach everyone in an emergency. Communities are required to rely on multiple systems (IPAWS WEA, Code Red, Nixle, Reverse 911 and other systems) to try to reach everyone and even this is not satisfactory. In many instances our first responders are forced to use personnel to go knocking door to door to warn or inform people of danger.

The last bullet point above regarding the public not being "educated and trained enough" regarding evacuation routes is another big weakness in our emergency and disaster preparedness. Local government can prepare by doing best planning, best practices and preparation, but if the public does not participate or understand what their role and options are in an emergency, then our efforts are largely wasted. Our citizens need to prepare by having a "GO Bag", they need to sign up for local alerts, know when to evacuate, have a personal emergency plan and they need

to listen to and heed the directions of their local emergency responders. While some of our citizens are prepared, not enough of us are educated and trained enough to be part of the disaster response solution. During the Woolsey Fire, Los Angeles County was required to divert personnel and resources to Life Safety rather than fighting the fire.

The Report also recognizes what emergency responders are identifying as one of the major problems facing first responders during an emergency; problems associated with lack of power, communications, and evacuations. Page 7 also highlights these concerns.

From Page 7.

- During the initial phases of evacuations, the City of Malibu, the Los Angeles County Sheriff's Department (County Sheriff's Department), LA County Fire, and all other stakeholders worked on the evacuation of over 250,000 residences. While successful, the effort may not be reproducible as, in the early hours, there was not a clear, single, comprehensive voice speaking to evacuation, and not all notification tools were used or used often enough.
- There was an over-reliance on Twitter; care must also be taken to account for the digital divide in which not everyone is on Twitter or even the internet, creating the need for multiple methods of public emergency communication.
- Entry and repopulation policies were not well briefed to checkpoints or the public.

Comments: In the fog of war during a disaster, communicating effectively with the public is vital. Los Angeles is not alone in its need to address better, more reliable, redundant emergency communications. Loss of power to cell towers and other phone systems is an issue facing all jurisdictions.

While not a mutual aid issue, Los Angeles County is reporting that they experienced significant problems with emergency alerting, lack of power and inadequate evacuation procedures. The new normal of wildfire is causing public safety power shutoffs (PSPS). This in turn creates problems because most of our communications capabilities require power to run their equipment. No power means reduced cellular service, fewer functioning home phone lines, no internet and loss of access to 911 and emergency alerts. Communication with citizens is vital. The lack of evacuation planning is also troubling.

Page 7.

Collaboration: County leadership should strive for a more collaborative "One Team LA" mindset. This applies to not just the County agencies, but to the cities and special districts for wide-area multiple-county events. Every large area emergency must be framed as a unified command operation where key decision makers come together under an Incident Commander who uses policy direction to determine objectives, achieve unity of effort, and direct a single voice for communications. The public may not always know what agency directly serves them—but in these situations, every Southern Californian expects and deserves seamless collaboration.

- As this fire demonstrated, wildfires do not respect jurisdictional lines of agencies, cities, special districts, or counties. A Los Angeles sub-regional planning, response, and recovery dialogue must occur across county lines via a Multi-Agency Coordination system for large-scale wildfire, terrorism, and earthquake incidents.
- As the incident rapidly expanded, command post locations shifted to account for the Woolsey Fire's growing size and subsequent impact. This resulted in commanders not always being able to communicate face to face, which presents unified command communications challenges.
- The large Los Angeles County agencies are set-up with regional facilities and Department Operations Centers (DOCs) that routinely manage large emergencies without needing to depend on the Los Angeles County Emergency Operations Center (County EOC). As the Woolsey Fire grew, there was a stronger and less practiced need to work on the regional impact between the County EOC Woolsey Incident Command Post (ICP), the DOCs, and each independent city EOC.
- There is a need for greater inter-agency pre-incident evacuation and repopulation planning for the communities in Fire Hazard Severity Zones.
- No pre-prepared traffic evacuation plans/scenarios exist for the areas impacted by the Woolsey Fire.

Comments: Better coordination of local agencies and departments will mean better response and outcomes. Emergency management and lines of command and control are extremely important. Preparing for and practicing this coordination will mean better relationships and trust on the local level. The effect will be a more viable and concerted local mutual aid response.

Page 8, Near Term Agency Recommendations

NEAR-TERM AGENCY ACTION RECOMMENDATIONS

Acquiring funding and implementing the technical recommendations across the themes beginning in **Section 5** are largely in the hands of agencies. Key highlights include:

1. Improve coordination of multiple-agency emergency public messages.
2. Increase the speed and use of all alerting tools in wide-area, fast-paced disasters.
3. Create more specific evacuation plans that can adapt to major road closures and a fast-paced disaster.
4. Help the public understand the risks and ramifications of not evacuating to protect their property when Fire Front Following and Life Safety First strategies are being utilized.
5. Address the impact of long-distance fire storm ember spotting through education and an emphasis on using layered buffer zones, including appropriate vegetation mitigations, improving soil moisture, and structure hardening techniques.

Comments. These recommendations are ones that every community should undertake to strengthen and perfect. Coordination of agencies and the ability to communicate effectively and

quickly with the public are vital to the safety of our communities. Since California has experienced disasters over the past few years, we have seen an awareness that the state has been woefully unprepared to respond to emergencies. Only a few years ago, many communities did not know how to send emergency alerts to their citizens. Some local communities were not even certified by the federal government to send wireless emergency alerts. There were some local governments where emergency management was performed by an individual in a part time job. Most communities did not have prepared evacuation routes and a great many of our citizens still do not understand how and when to evacuate during an emergency. While the state is making great strides in these regards, we still need to do more.

Page 23 -24

2.3.1 Key Firefighting Tactics in Extreme Conditions

Firefighting in the wildland area involves either perimeter control (directly attacking and controlling the outline of the fire) or point protection (protecting structures). During wind-driven wildfires, firefighters often employ point protection until wind conditions diminish. Point protection can be static at one location or, on dynamic moving fires, firefighters may use a tactic called Fire Front Following. When enough fire resources are available, tactical patrols will remain behind the fire front, watching for incipient fires igniting structures.

Additionally, when there are not enough resources for firefighting, the units available are directed into Life Safety First, in which all efforts are utilized to protect lives at immediate risk. The two terms regarding these tactics are here defined and used in this After Action Review (AAR):

1. Life Safety First: Units remain mobile to ensure civilians are evacuated out of harm's way and to answer 9-1-1 calls for help, rather than fully engaging in traditional structure defense operations.
2. Fire Front Following: When fire storm conditions are overwhelming, inhibiting firefighters' ability to breathe or even survive, the units find a safe refuge point and let the main fire front pass over/around them. When human activity is again possible, the fire units search for victims, effect perimeter control, extinguish spot fires around structures, control hot spots, and reduce ember production. This action is taken when there is insufficient time to safely set up ahead of the fire, or the intensity of the fire would likely cause injury to personnel located in front of the the fire.

On Friday, November 9, the Los Angeles County Fire Department (LA County Fire) dispatch center received approximately 1,800 additional calls for help (above the normal Countywide volume of about 1,100) from neighborhoods within the fire area. Even the engines assigned to structure defense within Malibu early Friday could not keep up with the volume of 9-1-1 calls and, sometimes, by the time a unit had arrived, the caller was gone or wanted the fire engine to stay even though the situation did not yet warrant it. By informal estimates, in some threatened areas, almost half the 9-1-1 calls were not life threatening or no one was found upon arrival, significantly impacting the ability of very limited fire units to engage in life safety and structure defense operation.

However, there were multiple rescues, and some structures saved through heroic commitments. Dispatchers, firefighters, and field commanders were acting with the best information available, often putting themselves in harm's way.

Discussion: The lesson that November 8, 2018 has taught California firefighters is that during largescale devastating fires, our mutual aid system and resources can be stretched so thin that local agencies may be left largely on their own in fighting a fire. This means that an initial fire response may be limited to the fire personnel and equipment that is on hand. How these assets are allocated between saving lives and fighting the fire will depend on the circumstances of the fire and the danger to the population. Fire departments give priority to saving lives (Life Safety First).

Los Angeles County found that the large number of 9-1-1 calls they received served to divert resources away from areas where they could have been better applied. Better communications and public awareness alerting messages are important in these situations. A program of public outreach and education prior to a disaster on what to expect during an emergency might also reduce call volumes.