2003 Fire Siege Findings

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California is a fire prone state. Its Mediterranean climate, long dry summers, Santa Ana winds, chaparral, brush, rangelands, wooded foothills and forested mountains together make California a prime target for wildland fires. When combined with its burgeoning population; continued residential development of wildland areas; environmental and air quality regulations that impede the implementation of effective vegetation and fuel management programs; budgetary restrictions; and both negligent and malicious acts of some individuals; it's obvious that California will continue to experience the nightmare of wildland conflagrations.

Southern California, in particular, has the highest population in the United States that is in a fire prone wildland/urban interface (WUI) area. Its most critical parts are in and around the four southern forests. Long term drought, together with extremely low relative humidities, has caused widespread brush and timber mortality, record low dead fuel moistures, and widespread critically dry live fuels. In addition, its mountain and foothill communities have significant populations with limited means of egress.

"The most critical areas will continue to be the urban interface areas in and around the four southern forests. These communities have significant populations and limited means of egress. Concentrations of standing dead trees increase the potential for fire to spread rapidly. Evacuation and firefighting efforts in these communities are difficult and dangerous."
— Chief Ray Quintanar, Director, Fire and Aviation Management, USFS

Jurisdictional and Operational Barriers

As recognized by California's Disaster and Civil Defense Master Mutual Aid Agreement, it is critical that all of California's resources be available to prevent and combat the effects of disasters that may result from such calamities as wildfire. With a multiplicity of federal, state and local departments, agencies, political subdivisions, municipal corporations, and other public entities, each with its own requirements and responsibilities, the elimination of jurisdictional and operational barriers to ensure the protection of life and property is a battle that demands mutual acknowledgment and cooperation.

"During the event, each day San Diego operated 50 engine companies, 22 brush companies, 9 trucks and 2 airport fire fighting companies. This represented the equivalent of approximately 500 firefighters who were deployed each day of the fire."
— P. Lamont Ewell, San Diego Assistant City Manager

Finding 1

There is confusion as to whether there is a requirement that all available local resources, including civilian contract aircraft, be exhausted before requesting federal resources to assist in fighting WUI fires.

California state and local governments have been under the impression that the federal Economy Act requires that all local resources, including civilian contractors, be exhausted before requesting federal resources. According to representativesfrom the U.S. Department of Defense (DOD), no such requirement exists.

"It's going to take some extraordinary actions and some extraordinary recommendations from this Commission in order to deal with future fire sieges in the State of California."
— Chief P. Michael Freeman, L.A. County Fire Department

Finding 2

"As we found in California with earthquakes, the further you get away from the earthquake, the less it's on your mind, and what happens, I believe, is that many agencies, because of budget constraints and other factors, haven't done as much training and exercising as we should."
— Director Dallas Jones, Governor's Office of Emergency Services

There are numerous conflicting land management and environmental laws and regulations at all levels of government.

Federal, state and local agencies have conflicting requirements and enforcement authorities that must be rectified. Environmental regulatory requirements have failed to adequately address fire prevention and fuel management needs, which have contributed to conditions that will likely result in future conflagrations if immediate action is not taken to resolve the crisis.

Finding 3

"Wildfires are burning too many homes, killing too many people, destroying the environment and eroding homeland security."
— Supervisor Jim Venable, Riverside County

One-third of the California Department of Forestry and Fire Protection's (CDF) workforce has retired during the past few years, resulting in vacancies in key positions. In addition, the number of fire crews has decreased due to a decline in the number of Department of Corrections (CDC) inmate firefighters, California Youth Authority (CYA) wards and California Conservation Corps (CCC) members. As a result, CDF had to deploy higher level managers to perform Assistant Chief level functions during the October 2003 Fire Siege.

Over the past 20 years, CDF forces have been reduced by 25 fire engines and 36 fire crews, leaving only 336 fire engines and 197 fire crews remaining to support its statewide mission. Last year, the CCC withdrew from participation at two CDF camps (one in San Diego County) resulting in the loss of eight CDF fire crews. This year, CYA plans on withdrawing from two camps, resulting in the loss of an additional 10 CDF fire crews at a time when CDF is already trying to cope with over 50 vacancies at the key Assistant Chief level. These unfilled vacancies are the result of retirements, voluntary demotions and a recruitment/retention crisis resulting from salary compaction.

Finding 4

CDF is operating a fire protection system year around on an eight month budget allocation.

Although CDF provides various contractual fire protection services in 35

of California's 58 counties, its staffing is based on a fire season which has traditionally ranged from five to eight months. CDF has 21 administrative units throughout California. The three Southern California units—San Bernardino, Riverside and San Diego—are funded based on an eight month fire season. Some sources say California is undergoing a climatic change, and its fire season is now year round in these areas.

Finding 5

"Military surplus does not necessarily translate into less expensive."
— Larry Roberts, Senior Director, American Eurocopter

CDF acquires used military aircraft through the federal excess property program and refurbishes them into working firefighting aircraft. However, availability of these federal excess property aircraft is diminishing and will soon be exhausted.

CDF is utilizing 1960 vintage Bell UH-1 (Huey) helicopters, some of which flew in Vietnam. These airframes are experiencing extreme structural fatigue and the availability of excess military aircraft is diminishing. CDF will soon need to begin replacing these helicopters, either by purchasing new ones or finding other alternatives, such as commercially certified helicopters.

Finding 6

"Typically, CDF is staffed with three people on a fire engine, but in Riverside, San Diego and San Bernardino, we've enjoyed for the last two years, 4-0 staffing and that has helped tremendously."
— Kelly Zombro, Battalion Chief, CDF

Four person (4-0) staffing on fire engines may be more efficient than lower levels of staffing and allow firefighters to be more productive in their fire suppression activities, thereby maximizing engine response capability during WUI fires.

Typically, CDF's fire engines are staffed with three people (3-0) per engine. However, during the past two years, CDF engines in Riverside, San Diego and San Bernardino counties have had 4-0 staffing pursuant to a Governor's Executive Order. Such 4-0 staffing may be more efficient, as it allows the captain or crew leader to take a command role, to plan, to consider where the fire is going and to properly manage his crew. In addition, 4-0 staffing adds a safety factor and accountability.

"If you use the equipment we have in Alaska, I would feel comfortable flying those fire fronts . . .even during hours of darkness and during areas and times with very limited visibility due to smoke, haze, fog, etc."
— Leonard Kirk, University of Alaska

Finding 7

CDF aircraft, federal aircraft and military aircraft equipped with Modular Airborne Fire Fighting System (MAFFS) units operate with inflexible "cut-off" time policies.

CDF aircraft, federal aircraft and military MAFFS units have cut-off times associated with sunrise and sunset, which are based on projected flight visibility and imposed for purposes of flight safety. These cut-off time policies restrict aircraft operations and allow no flexibility regardless of other considerations.

"With no finger pointing whatsoever, I will point out that on the 30th we made the request for Predator UAV. In the time it took to process it, we lost roughly the state of Rhode Island."
— Lt. Col. John Crocker, Air Guard Operations, California Military Department

Finding 8

The National Interagency Fire Center (NIFC) in Boise, Idaho, is the nation's coordination center for wildland firefighting and has the ability to call upon the DOD when additional assistance is needed.

When NIFC, which is made up of many different agencies that are effective in protecting life, property and natural resources, requires additional support, it requests assistance from the Secretary of the DOD. The system has proven effective and, in the case of the October 2003 Fire Siege, some requests for DOD support were personally approved by the Secretary within two hours after receipt. While DOD has very few active duty military firefighters, most of whom are specially trained for aviation or ship type fires and deployed overseas, the available firefighters that DOD does have can be easily trained as Type II firefighters. However, because of worldwide commitments, DOD resources may not always be readily available for firefighting or other emergency support functions.

Finding 9

Aerial firefighting resources cannot be solely relied upon to establish an effective fire line. It requires a coordinated effort with ground firefighting resources.

While aerial attack plays an important role in keeping a fire at bay, airplanes and helicopters do not put out large fires – firefighters do.

Finding 10

There is a fundamental yet unmet need in WUI suppression and management to be able to consistently monitor and understand the behavior of wildland fires at their full scale and as they occur.

Reliable fire information is necessary for the strategic and tactical deployment of resources during fire suppression, to understand and mitigate fire effects in the environment, to improve firefighter safety and understanding of fire behavior, and to evaluate the effectiveness of forest management.

"We really have a need to have a downlink – real time downlink information. From the Cedar Fire we all know that there's a need to know what's going on at all times, where that fire's headed, and what it's doing."
— Dennis Hulbert, Regional Aviation Officer, USFS

Training

"The conditions that those firefighters were working under, something that in my near 30 years experience, were way beyond what I had ever seen before." — Jim Wright, Deputy Director for Fire Protection, CDF

California has over 62,000 firefighters, most of whom specialize in one of the following response areas: structural, airport, emergency medical services and wildland. While in the public's mind all firefighters are the same, in reality, each individual firefighter has a specific level and type of training. When called upon, firefighters will all respond and do their best. However, their ability to do an effective job is dependent upon training and education, and each and every component of emergency response must be at the same level of readiness for firefighters to do their jobs effectively.

Finding 1

There are currently no minimum statewide service level or training standards mandated by law for California firefighters, nor are there statewide mandates for continuing training or maintenance of performance standards.

"Under the California system, once you're trained and certified, future training is not required unless you want to go on to the next level of certification." — Dave Ebert, Chief, Training and Education Program, CDF

Unlike peace officers, whose minimum training standards and continuing education requirements are prescribed by the Commission on Peace Officer Standards and Training (POST), there are no mandated statewide training and education standards for firefighters. Training programs are currently determined by the individual fire service entity based on local response needs and the availability of resources to provide training for its personnel. Fire service personnel who achieve certification for positions such as firefighter, company officer or driver/operator are not required to maintain certification through continuing education or other means. As a result, firefighters, though certified, may not meet the performance expectations of an individual who functions at that level. Emphasis must be placed on the need to have a comprehensive, continual and adequately funded training and education system that meets the needs of all disciplines within the fire service profession, including, but not limited to, suppression, prevention, communications and emergency medical services.

"Firefighters put out their own money to take classes so they feel comfortable in doing their job." — Dennis Marsh, Chair, California State Firefighters Association Training and Education Committee

Finding 2

Training of California's firefighters is complex and diverse, and has many agencies participating in the development and delivery of training programs. While California has led the way in developing new training programs, the programs have yet to be brought together in a coordinated manner.

The training of California's firefighting workforce is complex and has many agencies and entities participating in the development and delivery of training programs. State agencies such as the California Department of Forestry and Fire Protection/Office of the State Fire Marshal (CDF/OSFM), the Governor's Office of Emergency Services (OES), the State Emergency Medical Services Authority (EMSA), CAL/OSHA and California community colleges, as well as the California Fire Fighters Joint Apprenticeship Committee, the California State Fire Fighters Association, the California Fire Chiefs and Fire Districts Association, and the United States Fire Administration/National Fire Academy all play key roles and provide training and education opportunities for California firefighters.

"I fully support uniformity of training for firefighters. This is especially important in the wildland-urban interface where the firefighters may be trained for fighing structure fires, but not brush or open area fires. Uniformity of training will also undoubtedly assist in coordination of efforts."
— Assembly Member Christine Kehoe

Over the last three decades, the increasing sophistication of firefighter training has transformed the profession. However, because there are no standardized training requirements or means to fund the development, delivery and cost to attend training, adherence to these standards is voluntary.

Finding 3

Because participation in CDF/OSFM training programs is unfunded, a statewide needs assessment has not been conducted, new programs take years to develop, training programs are not readily available in all areas of the state, and instructor availability is limited in some geographic areas.

"This is a very, very serious problem, and I think we really have to take some action to do something about it."
— Senator Nell Soto

Funding for staff to develop, deliver and coordinate these programs is derived from fees generated by student attendance, and the purchase of class materials and certification. The programs receive no support from the general fund or other sources of revenue.

Courses are currently being delivered based on economic factors in order to cover the cost of providing the training. Due to the cost to attend, post-cover costs (overtime to fill in behind the trainee) and travel costs, training programs may not be accessible in areas where the need is the greatest. Furthermore, no statewide needs assessment has been conducted to assist in the development of a comprehensive training plan.

Finding 4

Funding for the Army National Guard to conduct or participate in multi-agency training is not available at a time when integration of their resources into the state's firefighting resources is needed.

The training agreement between the California Military Department, the National Parks Service, the U.S. Forest Service (USFS), CDF and OES is a model for the country, and the California Army National Guard is currently exporting the program to other western region states. However, Army National Guard aircraft crews have not performed the annual two day required training conducted by USFS and CDF because training funds are not available.

Finding 5

"We set up the emergency operation center and conducted three functional operations and two dress rehearsals within the past 12 months, which was very important. Everyone knew each other, knew how to coordinate, knew who to coordinate with and when."
— Chandra Waller, San Diego County Public Works Department

Keeping up with the firefighting training component of the active military is very difficult.

Training with local government resources for effective wildfire suppression in the WUI is difficult due to the mobile nature of the active military.

Finding 6

The USFS has six centers in California that provide training to federal, state and local government fire service employees and a National Wildfire Training Center that houses its national apprenticeship program.

The USFS plans on providing 143 training classes in 2004 for fire service employees. The USFS also has a National Interagency Wildfire Apprenticeship Program that is taught at the National Wildland Fire Training Center at McClellan Air Force Base in Sacramento. To replace attrition, it is believed that 600-800 entry level firefighters must be trained.

Finding 7

A comprehensive public awareness education program is needed.

The lack of a comprehensive public education program by local, state and federal agencies has resulted in a public that is uninformed or apathetic about wildfire prevention, risk reduction and firefighters' capabilities to combat catastrophic wildfires.

"30,000 of these training kits were distributed to local governments, free of charge."
— Caroll Wills, Communications Director, California Professional Firefighters

Interstate/Regional Mutual Aid Systems

"Although there are 25 cities within Riverside County, our fire departments all come together anytime there is an emergency, dropping city, district and county boundaries and providing service to all. It is because of this extraordinary relationship and the cooperative efforts of all of our departments, that Riverside County is able to keep the fires within our county relatively small, quickly contained and controlled."
— Chief Tom Tisdale, Riverside County Fire Department

California state and local governments have long recognized their responsibility to mitigate the effects of natural, manmade and war caused emergencies which produce conditions of disaster or threaten state resources, as well as their obligation to protect the health and safety and preserve the lives and property of the people of the state. To ensure that preparations are adequate to deal with such emergencies, mutual aid agreements have been developed to prepare for emergencies that by reason of their magnitude are, or are likely to be, beyond the control of the services, personnel, equipment or facilities of any single jurisdiction.

During the Southern California fires, from throughout California, 1160 local government fire engines, 275 CDF fire engines, 102 OES fire engines, 5 OES water tenders, 2 California National Guard C-130 MAFFS air tankers and 8 California National Guard helicopters were deployed. In addition, 175 fire engines were committed by federal agencies, 50 fire engines and 3 National Guard helicopters arrived from Nevada; 50 fire engines were sent by Arizona; and 20 fire engines and 2 National Guard helicopters came from Oregon.

Finding 1

Interstate Mutual Aid compacts provide liability and reimbursement clauses, but these compacts are not completely detailed and have not been regularly updated.

"At the peak of the activity we were dealing with 14 separate incidents and prioritizing them. That had its own unique difficulties."
— Robert Praytor, Deputy Chief, FIRESCOPE Programs, Governor's Office of Emergency Services

The Interstate Civil Defense Disaster Compact (ICDDC) is the master agreement for all 58 states. This agreement, which was written in the 1950's and has not been updated, allows the Governor from one state to send resources into another state and sets the rates of pay. Under this compact, the sending state is responsible for tort liability, and a disaster does not have to be declared before moving resources. California has a subcompact with the states of Arizona, Idaho, Nevada, Oregon and Washington that more specifically sets the rates of pay.

Under the Emergency Management Assistance Compact (EMAC), which is administered by the National Emergency Management Association, a disaster has to be declared before moving resources and the receiving state is responsible for tort liability. Many liability concerns have not been resolved, however, such as issues

relating to workers' compensation, disability, death benefits and retirement. California is not a signatory to EMAC for these reasons.

Finding 2

States vary as to their process for allocating resources.

Some states utilize strike team configurations, five fire engines per team, that are available and ready to launch when a call for assistance is received, while other states utilize an individual increment configuration.

Finding 3

California has a variety of mutual aid and cooperative agreements through which public entities may be reimbursed.

"In California right now we have nearly 45 million acres of land that are ready to burn. Last October's fires were absolutely terrible, but we are still facing an even worse situation; one that could be the largest disaster California has ever seen."
— Supervisor Jim Venable, Riverside County

California has six fire and rescue mutual aid regions, which are made up of 6 to 16 operational areas, over 900 city, county and special district fire departments and over 62,000 firefighters. There are currently two primary California agreements: the Master Mutual Aid Agreement, which is voluntary, and the California Fire Assistance Agreement (CFAA), which provides financial support. The CFAA provides that in the case of a large wildland fire, the local government response is not reimbursed during the first 12 hours. If assistance is required beyond 12 hours, funding is provided for the full incident commitment time through the agreement under assistance for hire or other local agreements.

There are several reimbursement agreements under which the rate of pay is determined in advance. The Cooperative Fire Protection Agreement, consisting of CDF, USFS, Bureau of Land Management and the National Park Service, provides that the agencies reimburse one another for costs when necessary. The agreement for local government fire suppression assistance to forest agencies is the CFAA arrangement under which local governments may obtain reimbursement.

Finding 4

The Southern California Tribal Emergency Management Consortium consists of Native American tribes in San Diego, San Bernardino and Riverside counties, and has developed the same firefighting capabilities as any other local or state government fire department.

The Southern California Consortium has 15 fire departments with various firefighting equipment, including specialized apparatus such as aerial ladder trucks, hazmat and paramedic units.

"In the October fires, we saw almost 3,000 to 4,000 patients and had almost 8,000 patient contacts."
— Jeff Rubin, Chief, Disaster Medical Services Division, Emergency Medical Services Authority

Finding 5

Emergency Medical Services Authority (EMSA) is important to a unified and coordinated emergency response to WUI fires.

A statewide medical response mutual aid system is important to minimize human suffering during major emergencies such as WUI fires.

Finding 6

California's mutual aid system is recommended by the federal government as a national model.

The California Mutual Aid System, Incident Command System (FIRESCOPE-ICS), Multi-Agency Coordination System (MACS), and Standardize Emergency Management System (SEMS) have been recommended as a national model since 9/11.

"One of the components we need to discuss is how we used the Multi-Agency Coordination System, MACS, during the fire siege. MACS is designed to improve the control allocation of interagency coordination in situations where there are multiple incidents. The function of MACS is to coordinate resources, disseminate information to cooperating agencies, and establish priorities based upon incident values at risk."
— Kim Zagaris, Chief, Fire and Rescue Branch, Governor's Office of Emergency Services

Local Building, Planning and Land Use Regulations; Brush Clearance and Fuel Modification

California has a growing population, with an ever increasing demand for new housing. This exploding population has forced an ever relentless encroachment of housing and development onto the state's wildland and rural areas, which geometrically increases the difficulty and demand for fire prevention and suppression programs and services. Sound, effective fire safety and fire prevention practices, including fire safe building standards and codes, realistic and coordinated fuel reduction programs, and the commitment of communities, families and individuals are critical to the prevention of future fire related disasters and the concomitant loss of life and property.

"The City of San Diego has a five point plan that we are implementing that includes such things as toughening building code standards. Yesterday, the City Council banned wood shake shingle roofs in the City of San Diego. We are now pursuing strengthening brush management requirements, upgrading firefighting equipment and increasing firefighter personnel in the city." — Mayor Dick Murphy, City of San Diego

Finding 1

The protection of life and property from wildfire cannot simply rely on the availability of firefighting resources. Until the removal of thousands of acres of dead bark beetle infested trees and sound forest stewardship is achieved, Southern California and other forested areas of the state will continue to have hazardous standing fuel just waiting to become the next conflagration. Fuel reduction and fuel modification programs are essential to reducing the potential threat of major WUI fires.

Contributing factors to conflagrations in California include extended years of drought; inadequate vegetation management; increased development of communities in WUI areas; poor accessibility; continued use of combustible building materials; topography contributing to extreme fire behavior; and inadequate water pumping/supply systems.

"As we continue to develop cities and subdivisions on top of an ecosystem, we will continue to have tragedies from wildfires. Over 90% of these fires burned in chaparral and coastal sage where fire is part of the natural system. High intensity fires occur every 25 to 50 years in chaparral, but it regrows quickly and is ready to burn as intensely again after only 7 to 8 years." — Director Andrea Tuttle, CDF

Fuel modification and fire management on private and public lands are essential to the preservation of public resources, property and lives. Creating defensible space around structures and employing other fire protection measures is essential to minimize risks.

The outcome of the 2002 Cone Fire on the Blacks Mountain Experimental Forest provides positive evidence that forest thinning helps stop catastrophic wildfire. The area of the forest that had been thinned and managed with prescribed burns effectively stopped the Cone Fire dead in its tracks.

The League of California Cities (League) and the California State Association of Counties (CSAC) have developed a collaborative plan to decrease the impact of WUI fires on public health and safety (Appendix F) and are seeking ways to create new jobs from the harvesting and use of biowaste in a productive and environmentally friendly way.

Finding 2

Community involvement is essential to helping implement necessary fire prevention and fire safety programs at the local level.

"Firewise Community Workshops bring the communities together to figure out how to solve these issues about living in wildland urban interface areas."
— Mike Rogers, Consultant

Federal Firewise Community Workshops bring communities in WUI areas together, teach them fire prevention programs and how to build fire safe communities. In California, Fire Safe Councils are developing and implementing County Fire Plans that promote pre-fire management and fuel reduction projects to protect communities and watersheds. Through the efforts of CDF and the Community Assistance Grants under the National Fire Plan, local community and County Fire Safe Councils are developing throughout the state and concerned citizens are working collaboratively towards environmentally safe and economically feasible solutions to existing hazardous fuel problems in their areas.

"Over 27,000 acres in the City of Santee burned, that's almost one third of the land area within our corporate limits, and 478 homes were directly threatened, and not one single home was burned."
— Keith Till, Santee City Manager

The National Fire Protection Association's (NFPA) addresses key elements of wildland fire safety such as community education and training, risk analysis, thinning and pruning of live vegetation, access and egress for firefighters, adequate water supplies, building design, location and community planning and can be of assistance to fire agencies in dealing with the escalating challenges of the increasing number of WUI communities.

Examples of fire safe communities include the following:

The Mountain Area Safety Taskforce (MAST) was a huge success. As the fire threatened the San Bernardino County mountain communities, mandatory evacuation orders were issued to all residents. Despite the conditions and limited evacuation routes, over 80,000 residents evacuated their homes and businesses without a serious incident. This task force is made up of state, local and county fire personnel and the community of Lake Arrowhead.

The Southern California Agency of the Bureau of Indian Affairs works with 29 tribes in Southern California, of which 10 are in San Diego County. The tribes have learned the importance of fuel management and are developing fuel reduction projects and WUI projects with federal funds. Twenty-two (22) of 29 tribes have completed or are currently working on developing a fuels reduction project.

"Eleven tribal reservations were impacted by the fire, 30,403 acres were burned, 142 homes were destroyed, and 10 lives were lost on or near reservations." — Chief Ed McOrmond, Pechanga Fire Department

It will only be through such collaborative efforts at the local level that a cohesive strategy will be put in place that works.

Finding 3

Currently, appropriate minimum building standards and fire safety requirements are neither mandated nor consistently enforced in all communities in High and Very High Fire Hazard Severity Zones.

"It is critical that the building officials be part of the solution." — Brad Remp, Vice President, California Building Officials

California Building Officials (CALBO) states there are many implementation challenges that must be dealt with by coordination between fire officials, building officials, planners, local governments and communities. The challenges are numerous and include: jurisdiction's level of acceptable risk; willingness to enforce new code requirements for post-fire rebuilding; threshold of justification for increased requirements; lack of knowledge of techniques for mapping high fire hazard areas; ability to maintain defensible space over time; balancing environmental protection and brush management policies; establishing a stable funding source via assessment districts, general fund and grants; lack of wildfire based fire testing on building materials; balancing prescriptive requirements against maintaining architectural freedom; and coordination between fire officials, building officials and planners.

Damage assessments from the October 2003 Fire Siege determined that structure proximity and orientation to slope; single pane and older windows; lack of defensible space; vegetation within 10 feet of the structure; overhanging vegetation; accumulation of vegetative debris on or near the structure; open wood eaves combined with venting and/or proximate vegetation; raised sub floors, especially when proximate to downward slope; attic and roof vent location, eaves and soffits increased structure vulnerabilities to fire. Quarter-inch mesh, which has commonly been used to block vents, and soffits were found to be insufficient to prevent entry or accumulation of embers. Structures that suffered badly from fire

Clearly, the fires in 2003 had enormous impact on the society and environment in Southern California. The most poignant of these impacts are the loss of life and the loss of structures and residences. But it's important to remember that the fires have a variety of other impacts on the ecology, the environment and the natural resources of the region. — Greg Greenwood, Deputy Assistant Secretary, California Resources Agency

often had low flow for water and no emergency shut-offs on site, resulting in tanks running dry when compromised. Untreated wood frame structures like patio covers and decks attached to homes were particularly vulnerable. The assessments also found that dual pane tempered and annealed windows, buffer zones immediately around a structure and within 10 feet, no vegetation right next to windows and walls, and fire retardant Class A roofing helped save structures.

Finding 4

"We have to educate the homeowners that if they choose to live in an urban interface area, it is going to cost more to build their homes and potentially to insure their homes."
— Senator Deirdre Alpert

The insurance industry must be an intimate and integral part of the solution to addressing the WUI problem.

The California Department of Insurance (DOI) has received approximately 9,000 to 10,000 claims as a result of the Southern California fires, of which approximately 3,600 are total loss claims, a small number are partial loss claims, and the great majority are smoke damage claims and/or additional living expense claims for the time they were evacuated from their homes even though they did not suffer damage to their homes. The Department has received approximately 180 complaint claims to date. Some consumers discovered that the insurance they purchased was insufficient to make them whole and rebuild their homes. Others complained that living expense reimbursements (e.g., hotel, food and other living expenses) are time limited.

The Personal Insurance Federation of California (PIFC) is a trade association of insurance companies that writes approximately 46 percent of all the property and casualty insurance in the state. The members of the insurance companies routinely educate policyholders about fire safety, prevention and fire loss mitigation programs as part of their day-to-day operations, including distribution of brochures, pamphlets, booklets and videos to teach fire safety and prevention in schools throughout the state.

"Over the last 40 years, the Santa Monica Mountains in western Los Angeles County have been entirely blanketed by wildfires, and they will continue to be so. . . .we must be extremely serious about our fuel modification."
— Don Schmitz, Land Use Consultant

Finding 5

Vegetation has not been adequately managed to mitigate wildfire risks. The most destructive, costly and dangerous wildfires occurred in older, dense vegetation burning under extreme conditions.

Approximately once a decade, weather and fuel conditions develop in Southern California that result in catastrophic wildfires. Where these conditions become manifest, wildfire growth and intensity overwhelm suppression efforts, including aerial assets.

Finding 6

Most structural losses occurred where homes had little or no vegetation clearance or were built using combustible building materials, and were thus vulnerable to wildfires.

In Ventura County, where building codes and brush clearance requirements have been in place for over a decade, no homes were lost. Despite such successes, recommendations relating to vegetation management/fuel hazard abatement and building code requirements have consistently been among the most difficult to implement.

"22 out of 29 tribes have completed or are currently working on developing a fuels reduction project through BIA."
— Steven Fillmore, Fuels Management Specialist, Southern California Agency of the Bureau of Indian Affairs

Communications Interoperability, Information Technology and public outreach

"The Commission must ask not only what the practices are and what the capabilities of those protocols in 2003 were, but also what the technological capabilities in the 21st Century should be."
— Congresswoman Susan Davis

The ability of firefighters to effectively and efficiently communicate when and where needed with one another, incident commanders, other agencies and the public is critical to their safety and the protection of life and property. Modern information technology has the capability to greatly enhance firefighter's situational awareness and to provide the public with accurate and timely information.

Finding 1

Communications interoperability is essential in the effective command and control of personnel and resources during multi-agency, multi-discipline responses to major incidents.

"At one point we had to increase the 30-port line that was there and go to a more secure process. We went to 60 lines to bring on the additional folks from not only in-state but out-of-state and around the country that wanted an input into what was going on."
— Robert Praytor, Deputy Chief, FIRESCOPE Programs, Governor's Office of Emergency Services

During the October 2003 Fire Siege, incompatible communication systems and technology often made it impossible for strike teams to communicate with incident commanders or just about anyone else. Firefighters had to use their ingenuity to the fullest to compensate for such communications problems. Many used cell phones and two-way radios, while others developed special signals on their engines to send out emergency warnings. In some cases, firefighters found it necessary to carry three or four different radios, two extra batteries, a text capable pager and a cell phone, and had to check multiple frequencies and contend with busy signals in order to maintain communications and obtain needed information. In fact, a number of strike team leaders found it necessary to designate someone to monitor radio traffic across the various frequencies. Some departments with more sophisticated 700 MHz and 800 MHz systems had an even more difficult time communicating, because of the limitations of these systems in areas with mountainous terrain.

"Interoperability should not be strictly limited to firefighting crews. Medical personnel, emergency services including utility providers, and homeland security must be incorporated. In San Diego, crews were out in the fire areas dealing with downed electrical lines, ruptured gas lines, and low water pressure. They all need to be able to communicate easily with one another."
-- Assembly Member Christine Kehoe

Although FIRESCOPE did an excellent job devising standard radio loads, over the years, radio systems and frequencies have changed. Information regarding system and frequency changes has not been systematically shared with other entities with a need to know to ensure interoperable communications. Even when information has been shared, the costs associated with reprogramming existing radios to maintain interoperability can be insurmountable and may be as much as $250,000 for some agencies. Yet failure to reprogram radios in advance

of a major event can result in an inability to communicate and the loss of critical time in the field. Use of cell phones by firefighters to augment radio communications can result in command personnel losing situational awareness and failing to adapt tactics to accommodate changing circumstances.

"Even if we had radios, it wouldn't have worked, because the noise was so intense from the 100 foot wall of flames."
— Lt. John Hanley, President, Fire Fighters Union

It may be too impractical, too costly and too slow for the state to consider building a statewide communications system that will solve all interoperability problems. Other alternatives must also be considered. State agencies can take advantage of work that has already been done at the local government level to create regional systems, and join with local agencies on a regional basis to enhance those systems. Solutions that deal not just with major disasters, but also the day-to-day interactions of public safety agencies and their interoperability requirements, must be found.

"I think it goes without saying that UAV capability might have been useful."
—Lt. Col. John Crocker, Air Guard Operations, California Military Department

The Commission recognizes that communications interoperability is a major problem which requires immediate attention. The *Public Safety Radio Strategic Planning Committee* and *California Statewide Interoperability Executive Committee* are existing entities looking at these problems and need to address such issues as:

- Developing short-term and long-term solutions;
- Assessing funding requirements and sources (including grants);
- Seeking additional spectrum (frequencies);
- Identifying the quantity of frequency converters necessary for regional, short-term solutions; and
- Evaluating satellite capabilities and uses.

Finding 2

Unmanned Aerial Vehicle (UAV) provides long loiter time surveillance, reconnaissance and intelligence.

"There is a big difference between a news helicopter flying over a no fly zone, safely away from the instability that comes with a fire such as updrafts and turbulence, and somebody flying directly over that fire."
— Supervisor Judy Mikels, Ventura County

With infrared image capability, UAVs make it possible to see people and flames and discern if there has been recent activity in areas based on heat marks. Some UAVs possesses synthetic aperture radar and a variety of other capabilities that have great potential fire line applicability, including providing exact coordinates and fire plotting, which can greatly enhance firefighter situational awareness.

Finding 3

Geographic Information System (GIS) technology is an effective tool for quickly providing a visual representation of critical information, such as the status and potential impact of complex incidents during a major wildfire.

To maximize the effectiveness of GIS technology, issues surrounding the sharing of data between agencies must be addressed before an incident occurs, and focus placed on mitigation as strongly as it is on response.

Finding 4

It is important that the public, elected officials and the media have accurate, timely information.

"Emergency preparedness should be part of the planning process and should consist of educating the public at schools, groups, organizations and emergency exposition dates."
— Teresa Jordan, Simi Valley Resident

An example is the public perception that if aircraft are not flying, fires are not being suppressed. Firefighting aircraft dropping water or fire retardant is the most visible fire suppression effort that the public sees. When these aerial resources are not flying, the public does not understand why these vital resources are not being utilized. It is important that the public is educated and understands the role and use of aircraft in firefighting operations. Aircraft can only be used when they are effective and do not pose an undue safety hazard to the pilot, other firefighters and the public. It is extremely ineffective and dangerous to fly in high wind conditions.

Efforts to provide the public, elected officials and the media with accurate, timely fire incident and personal safety information need to be expanded. San Bernardino County's establishment of a Joint Information Center (JIC); CDF's use of a website for particular incidents; and the use of Public Information Officers at Emergency Operations Centers (EOC) are just some of the ways that are currently used to attempt to accomplish this goal. At the same time, information must be provided to the public before an emergency occurs so that individuals can minimize their risk and support the actions recommended by fire officials.

2003 Fire Siege Recommendations

The Commission has categorized each recommendation as a *Policy* or *Fiscal* recommendation, and numerically prioritized its importance as: (1) must implement; (2) should implement; and/or (3) should be studied further.

"As the fires were burning out of control in San Diego, we received calls from Arizona and Nevada offering assistance to the City and County of San Diego, but there was confusion about the ability to utilize these resources. I know we have a good mutual aid system in California, but what about our relationship with other states who are willing to help?" — Mayor Dick Murphy, City of San Diego

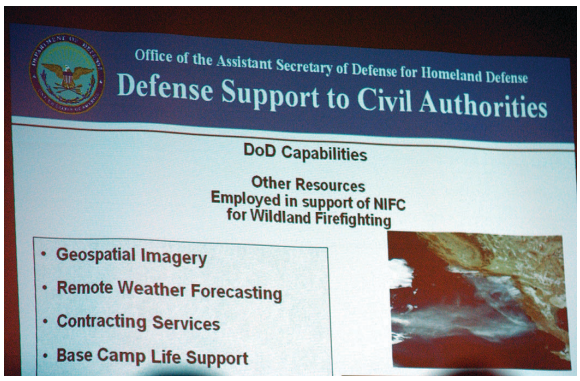
Jurisdictional And Operational Barriers

Multi-jurisdictional Recommendations

Multi-Jurisdictional Recommendation 1

The Commission recommends that OES arrange a meeting of federal, state and local partners to further clarify and improve the process of utilizing federal resources and access to military assets. (Policy-1)

According to representatives from the DOD, the federal Economy Act does not require that all local resources, including civilian contractors, be exhausted before requesting federal resources. Since many California state and local government officials have been under the impression that this requirement exists, the Commission recommends that OES arrange a meeting of appropriate representatives of all relevant entities to clarify and improve the process of utilizing federal resources and obtaining access to military assets.



Additionally, the Commission has been informed that Congress has requested that the Director of the Office of Management and Budget conduct a review of existing authorities regarding the use of Air Force and the Air National Guard Modular Airborne Firefighting Systems (MAFFS) and other DOD assets to fight fires. This report is due to Congress at the end of March. Therefore, the Commission further recommends that Congress review the 2004 National Defense Authorization Act report and the updated Memorandum of Agreement prior to the beginning of California's 2004 fire season to ensure that federal law and policy facilitates, to the greatest extent possible, the use and rapid deployment of federal resources and assets to assist in combating WUI fires.

"It doesn't take very long before you understand that there is a real problem, as in war, in knowing exactly what the fire's doing, where it is, there's terrain, there's smoke, there's brush, there's trees, it's hard to know what's coming when you see that glow. That glow may be a half-mile away, it may be five miles away. That's why there's such a need for good fire information." — Dr. Philip Riggan, Scientist, Forest Fire Laboratory, USFS

"What happened in Southern California will happen again unless we make some significant improvements to address fuel management, land use policies and fire safe building standards that are vital to protecting lives, structures, infrastructure, watershed, community parklands and other community assets at risk to wildland fire in the state."
— Chief Russ Tingley, Hermosa Beach City Fire Department

"Unless fuel reduction is combined with the restoration of the natural patchy structure and well adapted species composition of our pre-settlement forests, neither fire suppression nor fuel reduction, singly or in combination, will give us forests that can be sustained in the long run."
— Frank Stewart, Sierra Region Director, California Fire Safety Council, Plumas County

Multi-Jurisdictional Recommendation 2

The Commission recommends that federal (U.S. Department of the Interior [DOI] and USFS), state (CDF and OES) and local fire agencies work in conjunction with the military to jointly develop and adopt agreements, regulations and operating policies for the employment of aerial assets during WUI firefighting efforts. In addition, FIRESCOPE should develop a statewide plan to increase local agency capacity to provide additional air resources for combating WUI fires. (Policy-1)

Aerial resources play a critical supporting role in the suppression of WUI fires. Their capabilities to rapidly drop large quantities of water or other fire retardants on otherwise difficult to reach areas and areas in immediate danger is difficult to duplicate by other means. At the same time, aerial assets equipped with the latest technology can provide unparalleled real time information to firefighters regarding a fire's current and predicted behavior, thus greatly enhancing resource planning and both firefighter and public awareness and safety.

Such capabilities are useless, however, if they cannot be readily accessed when needed, or if the very fact of their availability is unknown. To that end, it is critical that agreement and a common understanding be reached by all potentially relevant parties regarding the polices, processes and procedures for obtaining and utilizing these resources, as well as for ensuring that those who may need these resources are aware of their availability—or lack of availability—before the next WUI fire occurs.

Such agreements should include:

- Concurrence on meeting equipment, communications and training criteria as established by U.S. Department of the Interior (DOI), USFS, CDF and OES;
- Submission of annual declarations of participation to DOI, USFS, CDF and OES by military base commanders by May 1st of each calendar year; and
- Weekly affirmation of availability status in accordance with developed policy.

Multi-Jurisdictional Recommendation 3

The Commission recommends that a task force be established to review the social, political, economic and scientific issues relating to conflicts between environmental and ecosystem values and land management planning, and their impact on the use of proven fire prevention and fire safety measures to protect lives and property in our WUI areas. (Policy-1)

In recent decades, the threat of fire to forests and adjacent communities has been exacerbated by inadequate forest and wildland fuel management. Forest management and other agencies, as well as private landowners, face numerous restrictions that impede their ability to manage their responsible areas in an effective and timely manner, such as overly bureaucratic regulations, the threat of litigation, and excessive environmental review. In fact, according to a June 2003 report by Congress' General Accounting Office, 59 percent of all fuel reduction activities in the United States were slowed or stopped because of litigation. In California, 68 percent of all fuel reduction activities were stalled by legal action.

Conflicting federal, state and local environmental and land management laws, regulations and policies must be resolved, or efforts to prevent future conflagrations will be doomed to failure. To accomplish this, a task force made up of all appropriate impacted entities, including federal, state and local agencies; building and insurance organizations; environmental organizations; community representatives; elected officials and others should be established to explore solutions and develop recommendations. The recommendations of the Task Force should include: modification of existing laws and regulations, as necessary, including assignment of responsibility to a single entity with final authority to resolve conflict and enforce decisions with respect to environmental codes, standards and fire prevention programs; and establish mandatory fast track timelines with respect to any litigation that challenges fire prevention related actions.

Multi-Jurisdictional Recommendation 4

The Commission recommends that federal and state statutes be clarified, where necessary, to reaffirm the status of the fire service as a public safety entity and to recognize the integrated responsibilities for fuel management as reflected in the National Fire Plan, Healthy Forests Restoration Act and existing agreements between the Wildland Fire Leadership Council (WFLC) and federal, state and local fire agencies. (Policy-1)

"The common denominators throughout all these fires is poor access for emergency vehicles, hot, dry weather conditions, sloping topography, a build up of wildland fuels, narrow roads, inadequate defensible space, and roads that hamper both the emergency access and evacuation of homeowners, and the use of construction of materials that are highly flammable – all these common denominators could have been eliminated through subdivision or individual home construction, planning and defensible space. Most of these wildfires and the losses from these wildfires can be minimized or avoided by very simple steps and precautions."
— Supervisor Gary Gilbert, Madera County

"We received a grant from the U.S. Fire Service to do prescribed burns between the national forest and the urban areas. Consequently, those prescribed burns were delayed because we ran into snags with the U.S. Fish and Wildlife Service."
— Mayor Judith Valles, City of San Bernardino

"I'm here today to pledge NFPA's assistance to the Commission's efforts."
— Gary Tokle, Assistant Vice President, Public Fire Protection of the National Fire Protection Association

Inclusion and identification of firefighting as a public safety entity would raise the level of public awareness of the critical services provided by firefighters and in the allocation of limited public funds between multiple competing priorities.

Recognition of fire agencies' integrated responsibilities for fuel management would elevate public awareness of fire agency responsibility for enforcement of fuel management requirements and the critical role it plays in the prevention of wildfires.

"We need to improve. The technologies that we need to fly at night are not night vision, that's a fallacy. We need comprehensive systems of navigation, terrain following, and the only ones that possess that technology, and we spent billions to get, is the military. And the military is willing, ready, and able to rent that resource to us anytime we call upon it and work with us."
— Tag Gaines, GT Equipment Services

Multi-Jurisdictional Recommendation 5

The Commission recommends that all federal, state and local forest firefighting agencies review their aircraft operations cut-off times and determine if there can be a window of flexibility to expand incident operations times, while at the same time taking into consideration flight crew safety. Additionally, these agencies should review available and emerging technologies to extend available aerial emergency response capabilities. (Policy-1)

Concerns regarding pilot visibility and safety are of critical importance. However, agencies should review their aircraft operations policies and, if possible, establish general guidelines to provide a window of flexibility that takes into consideration the totality of the circumstances, and review other technological capabilities that impact flying during nighttime or limited visibility conditions.

"When you call 911, we're going to respond. Firefighters are going to be there. But what is the staffing level on that engine, who is going to be responding and how far away they're going to be responding is up to the legislators, it's up to the citizens and the public of the State of California to determine."
— Tom Gardner, Emergency Command Center Captain at Cedar Fire

Multi-Jurisdictional Recommendation 6

The Commission recommends that federal, state and local fire agencies implement 4-0 staffing for all fire engine companies responding to OES Mutual Aid calls for immediate, planned response, and set a goal of 4-0 staffing for WUI initial attack response. (Policy/Fiscal-1)

OES and CDF standards require four person crews on all engine strike teams. Engines with 4-0 staffing are safer and more efficient and enable crew leaders to take a command role to plan and properly manage their crews.

Multi-Jurisdictional Recommendation 7

The Commission recommends that all firefighters responding to WUI fires be provided with the necessary wildland personal protective gear, safety and communications equipment. (Policy/Fiscal-1)

Firefighter safety must be of paramount concern. It is critical for the health and safety of firefighters responding to WUI fires that they be properly equipped with the appropriate protective, safety and communications equipment necessary to properly perform their duties.

"Aircraft are a wonderful resource, but airplanes don't put out the fires. Firefighters do. Lots of firefighters with the right equipment and the right training."
— Dan Terry, President, California Professional Firefighters

Multi-Jurisdictional Recommendation 8

The Commission recommends that sufficient funds be allocated to state and local fire agencies to address California's fire prevention and suppression needs. (Fiscal-1)

California has more residents living in WUI areas than any other state in the nation. CDF is responsible for the protection of lives, property and watershed on these areas which comprise some 31 million acres of WUI lands and, on average, responds to approximately 7,000 large fires per year in State Responsibility Areas (SRA) totaling about 130,000 acres. CDF also assists by responding to wildfires on federal and local responsibility areas when necessary.

The limitations on CDF's budget, as summarized in the Findings section of this Report, not only affects CDF's ability to respond appropriately, but also creates a strain on California's Master Mutual Aid System when local governments are not timely reimbursed for their fire agencies' response to major emergencies. Consideration should be given to establishing a secure additional funding stream for CDF through user fees, logging revenues, or other revenue sources. Although Proposition 172 in 1993 explicitly identified fire and paramedic services to receive a portion of its 1/2 cent sales tax increase, little of this revenue has found its way into the fire service and consideration should be given to allocating a portion of future growth in Proposition 172 monies to fire and paramedic emergency services.

"Using future funds from Prop. 172 may be a way to fund some of the recommendations from this Commission."
— Chief Chip Prather, Orange County Fire Authority

Multi-Jurisdictional Recommendation 9

The Commission recommends that federal, state and local policymakers consider creating a stable funding infrastructure for the California Fire Alliance and Fire Safe Councils. (Fiscal-2)

"We found in the fire service community that funding Fire Safe Councils and supporting Firewise programs provides a significant benefit to those communities where they've been successful."
— Chief William McCammon, Alameda County Fire Department; President, California Fire Chiefs Association

The California Fire Alliance is a statewide organization that supports community fire safety efforts and creates consensus on fire safety issues among diverse audiences. Local Fire Safe Councils are community organizations, made up of community members, active in minimizing the potential for wildfire damage to their communities and maximizing the health of California's natural resources. They also assist communities in developing fire loss mitigation projects and provide outreach to increase community awareness of program opportunities.

The Lake Arrowhead communities' Mountain Area Safety Taskforce (MAST), which works in partnership with other local Fire Safe Councils, is but one example of these community based efforts. MAST was instrumental in the successful evacuation of over 80,000 residents during the October 2003 Fire Siege, without a single serious incident despite being in the cross hairs of the Old Fire.

To ensure continuation and expansion of such essential community based services in WUI areas, federal, state and local policymakers should explore funding for mitigation grants.

Federal Recommendations

"There are advanced technologies having to do with areas of aerial surveillance that may be applicable to firefighting, and I think that's worthy of exploring."
— Peter Verga, Principal Deputy Assistant Secretary, U.S. Department of Defense

Federal Recommendation 1

The Commission recommends that the federal government (DOD, USDOI, USFS, etc.) investigate whether the successful MAFFS program concept of operation and emerging technologies can be applied to other aerial firefighting systems. (Policy-1)

The MAFFS program concept of operation, which is a partnership between the federal and state governments, has been successful for several decades and should be examined for potential application to other aerial firefighting systems, including emerging technologies such as UAVs, aerial infrared imaging, and synthetic aperture radar.

Federal Recommendation 2

The Commission recommends that Congress support and fund a single source database that enhances real time and nighttime WUI intelligence. (Fiscal-1)

An interagency fire intelligence/information gathering system with an expedited, single source database can greatly enhance real time and nighttime intelligence and predictive services and enhance information dissemination to incident management, ground resources, elected officials, the public and the media.

Federal Recommendation 3

The Commission recommends that Congress consider authorizing additional federal grant funds for wildland fire mitigation, including the establishment of a National Fire Science Research Institute to compile, evaluate and fund technological advances related to fire prevention and suppression at the federal level. (Fiscal-1)

"We'll be providing in excess of $14 million as a result of this fire disaster through OES."
— David Fukutomi, Federal Coordinating Officer, FEMA, U.S. Department of Homeland Security

The Federal Emergency Management Administration's (FEMA) flood and hurricane program for natural disasters should be considered as a possible program model.

Federal Recommendation 4

The Commission recommends that the federal government reduce or eliminate "match" requirements for federal grant funds for hazard mitigation programs in areas where there has been a state declaration of emergency. (Fiscal-3)

"We need to develop a climate in which pre-fire management, fuels management, vegetation management, or whatever you want to call it, is socially acceptable and demanded. We're killing more native species with wildfire than we're saving by not having fires."
— Bruce Turbeville, Chairman, California Fire Alliance

Although some counties have been notified that grant monies will be provided from a variety of federal sources, concern remains regarding the counties' ability to take advantage of such grants due to potential match requirements during a time of severe budget shortfalls.

State Recommendations

State Recommendation 1

The Commission recommends development of a permanent Joint Legislative Committee on Emergency Services and Homeland Security. As part of the Committee's mandate, it will have the responsibility, in so far as possible, to implement the

"We need to explore what happened with these conflagrations and learn from them so that we can do a better job. Where there were successes, we need to talk about those successes. In the case of the Cedar Fire contained in my district, the fact that there are 90% of the homes still standing in that area is a tremendous success when you are talking about a fire that broke out at absolutely the worst time weather wise, the worst time resources wise and the worst location that it could possibly have broken out. But where there were failures, we need to explore those and improve there as well, and there were failures. And where they were failures of law, we need the Legislature to fix those. Where they were failures of regulation, we need to have the agencies fix those. And if there were failures of command, we need to hold those people accountable."
— Senator Dennis Hollingsworth

"The good news is, that we can do this, that we can create the science and the policies to protect ourselves. The bad news is, is that you are almost certainly doomed to fail. And the reason why is because after this Commission goes home to Sacramento or Washington, D.C., and we made excellent recommendations at the Commission hearings, the guys in the trenches are going to continue to be assaulted by the different regulatory agencies that are going to do everything in their power to dissuade proper fuel modification."
— Don Schmitz, Land Use Consultant

recommendations of the Blue Ribbon Fire Commission. The Committee will oversee all relevant rules and regulations to resolve conflicting issues. Additionally, the Committee will have technical advisory committees to help evaluate strategies and shall periodically report its progress to the Governor and the Legislature. (Policy-1)

The Commission recommends that a permanent Joint Legislative Committee on Emergency Services and Homeland Security be established to expeditiously review and resolve conflicting laws, regulations and responsibilities and develop consistent guidelines for timely implementation of vegetation/fuel management fire mitigation activities.

The Committee should establish any necessary technical advisory committees, including representatives from the public safety and emergency services disciplines, to provide technical assistance on an ongoing basis and to take active roles in supporting the passage of any necessary legislation.

State Recommendation 2

The Commission recommends that the Blue Ribbon Fire Commission reconvene six months after the submission of this report, and again six months later, to assess progress in implementing the Commission's recommendations. (Policy-1)

The Commission should reconvene and report back to the Governor and Legislature six months after the submission of this report, and again six months later, with an assessment of the progress made in implementing the recommendations of this report.

State Recommendation 3

The Commission recommends that FIRESCOPE research and pursue efforts so mutual aid deployed engines have the capability to utilize newer technologies, such as foams and gels. (Policy-2)

Such capabilities would provide greater probability of success in preventing homes and other structures from burning and enable firefighters to move on to other homes or structures more rapidly.

State Recommendation 4

The Commission recommends establishing a secure year round operational capability for CDF, where appropriate, including the implementation of 4-0 staffing for all CDF state funded engine companies. (Fiscal-1)

"There's no lack of technology. What we need to do is figure out how to best use that technology, how to bring it in, how to use the resources that we have."
— John Sorensen, CEO, Seagull Technology

CDF's funding ebbs and flows in accordance with the traditional five to eight month fire season. This traditional funding source is no longer adequate due to the current year round nature of California's wildland fire threat.

Consistent with CDF standards requiring four person crews on all strike team engines, engines with 4-0 staffing have been found to be more efficient at keeping fires contained and in maintaining firefighter safety.

State Recommendation 5

The Commission recommends that the state examine alternatives for replacement and diversification of CDF's aging helicopter fleet and fire engine apparatus, and begin a replacement planning cycle. (Fiscal-1)

"Most of all, I'm extremely proud of all of our firefighters, who everyday put forth an all out effort for all of our citizens and who performed heroically during the fire season of 2003."
— Chief Tom Tisdale, Riverside County Fire Department

CDF is utilizing 1960's vintage Bell UH-1 (Huey) helicopters, some of which flew in Vietnam. These airframes are experiencing extreme structural fatigue, and the availability of excess military aircraft is diminishing. Consequently, CDF will soon need to begin replacing its helicopters. Since excess military aircraft will not be available, replacement helicopters will likely need to be purchased from other sources.

State Recommendation 6

The Commission recommends that the state develop a program to fund the acquisition of 150 additional OES fire engines and the requisite logistical support necessary to address California's fire suppression needs. (Fiscal-1)

"There was a lot of shock that a fire could sweep into a city and devastate suburban communities."
— Assembly Member Christine Kehoe

The additional fire engines would be assigned by OES to local fire departments with commensurate staff available to meet deployment requirements. During the October 2003 Fire Siege, many fire service agencies throughout California reported that they had additional personnel available to respond to assist in fighting the wildfires but did not have additional apparatus to send. The additional fire engines would enable California and local government fire agencies to mobilize and support emergency incidents more effectively by the state maintaining a fleet of additional OES engines for surge capability and would expand mutual aid capabilities to utilize other available resources.

Training

Multi-Jurisdictional Recommendations

Multi-Jurisdictional Recommendation 1

The Commission recommends that nationwide training agreements be expanded. (Policy-2)

The training agreement between the California Military Department, the National Parks Service (NPS), USFS, DOI, CDF and OES is considered a model for the country, and the California Army National Guard is exporting the program to other western region states.

"The most defining difference between those people who adversely are affected by future events and those who were sent to do something about it, is the training and education of those individual responders."
— Ronny J.Coleman, Interim Chief, City of Santa Rosa Fire Department

Although training for National Guard helicopter MAFFS is institutionalized and conducted annually, regular military personnel are only trained in firefighting on an "as-needed" basis. To maximize firefighting capabilities, federal, state and local governments should work together to determine where trained military assets could be best utilized. Appropriate military personnel should then be included in state and local fire service training exercises.

Federal Recommendations

Federal Recommendation 1

The Commission recommends that Congress increase efforts to provide training for local fire departments through federal grant programs and expand the Rural Fire Assistance (RFA) grant program. (Fiscal-1)

Legislation should be introduced to expand funding for the RFA grant program and a depository or clearinghouse of relevant grant information and opportunities created for easy access by local fire agencies.

"Control burns provide invaluable tools to train new crews, especially at the beginning of fire season. Readiness, operations, and burning are one of the major control tools that we utilize in the fire service to combat these fires."
— Bob Wolf, District Vice President, California Professional Firefighters

State Recommendations

State Recommendation 1

The Commission recommends that the state create a multi-layered public education outreach campaign for residents living in WUI areas. (Policy/Fiscal-1)

Such educational outreach should: provide residents in WUI areas with fuel management education and promote fuel reduction and hazard recognition; encourage residents to develop plans to manage their safety in the event of a wildfire; educate residents on structural fire safety measures; and provide children with age appropriate information regarding WUI fire and fuel hazards.

State Recommendation 2

"While California has one of the best trained, best equipped and most experienced fire service communities in the world, on-going, constantly updated and comprehensive training is absolutely critical to maintaining that high level."
— State Senator Bill Campbell (Ret.)

The Commission recommends that CDF/OSFM develop and maintain an adequately funded standards, training and education program, similar to the Peace Officer Standards and Training (POST) program to ensure that trained and qualified personnel are prepared to respond. The training plan should support the use of the California Incident Command Certification System (CICCS) and incorporate the Fire Officer Certification process approved by the State Board of Fire Services. (Fiscal-1)

The CDF/OSFM should conduct a statewide training needs assessment to determine the training that is needed for California's fire service, and develop and implement a plan that establishes minimum standards, training and education, including mandated core WUI training and continuing education and recertification for all levels of certification. The plan should include a trainee mentoring program and support both CICCS, which provides specific training for firefighters to fill Incident Command positions on major wildland fires, and the Fire Officer Certification process.

Since training is critical to the fire service's ability to save lives and protect property, California must find a means to ensure the training needs of the fire services are met. CDF should also identify and develop an ongoing funding mechanism similar to that utilized by POST as part of this plan.

State Recommendation 3

The Commission recommends that state funds be made available to each Operational Area to support annual WUI fire suppression training exercises that include National Guard and federal military resources. Funding should also be made available by the state to improve the training level of smaller fire departments. (Fiscal-1)

Since firefighting in a WUI environment requires different knowledge, skills, and techniques than fires that occur in an urban area, it's critical to firefighter safety and effectiveness that firefighters gain the experience that can only be provided through controlled group training exercises. Inclusion of National Guard and federal military resources in such exercises will not only increase their effectiveness, but also provide real world experience in integrating their activities with those of state and local firefighters, thereby enhancing overall efficiency, effectiveness and safety.

"Nobody likes to think of it, but here in California, being the Disneyland of disasters, we all need to constantly remind ourselves that it could be worse."
— Director Dallas Jones, Governor's Office of Emergency Services

Smaller fire departments, with their limited resources, can especially benefit from state funding to improve their level of training and resulting ability to assist in responses to large scale, wildland incidents.

Interstate/Regional Mutual Aid Systems

Multi-Jurisdictional Recommendations

Multi-Jurisdictional Recommendation 1

"At 0400 hours, the first request for mutual aid went outside the County of San Diego."
— Robert Praytor, Deputy Chief, FIRESCOPE Programs, Governor's Office of Emergency Services

The Commission recommends that all federal, state and local fire agencies in California review their various assistance for hire agreements for appropriateness and their potential to undermine California's Master Agreement and Master Mutual Aid System. (Policy-1)

There are currently numerous mutual aid agreements in California that define individual agency responsibilities and obligations under a variety of circumstances, including rates of pay, liability and process for reimbursement, to name just a few. Some of these agreements are voluntary and some are mandatory, but the number of and differences in these agreements can make it cumbersome for local governments to determine obligations and processes during times of crisis. Some agreements may have the potential to undermine California's Master Agreement and Master Mutual Aid System, and should be reviewed for appropriateness and replaced with a single master agreement for coordination and reimbursement of all resources in California.

"It is a matter of fact that public safety officials from different state and local agencies cannot communicate effectively with one another. This limits success in routine daily business, such as pursuits across jurisdictions, and multi-agency responses in emergencies like natural disasters or terrorist strikes."
— Senator Bruce McPherson

Multi-Jurisdictional Recommendation 2

The Commission recommends that FIRESCOPE facilitate federal, state and local fire service agencies working together to reach consensus on the definition of structure protection versus perimeter control, and address the release of mutual aid companies back to their jurisdictions of origin when immediate needs dictate such return. (Policy-1)

Lack of consensus on the definition of structure protection versus perimeter control is currently perceived to be undermining the effectiveness of mutual aid agreements and ordering requests. The difference in interpretations impacts reimbursements and can affect whether or not a given entity will send needed resources during critical times of need.

Multi-Jurisdictional Recommendation 3

The Commission recommends that forest agencies integrate local incident command team members within their respective incident management teams when local agencies are in unified command on major WUI fires, and that a module relating to interfacing with local Emergency Operations Centers (EOC) be included in USFS Type 1 and 2 team training programs. (Policy-2)

"I think we can all admit that if a fire's big enough, the weather's bad enough, we don't put them out. The only chance we have is to get them when they're little. We try to manage them, we try to put as much resources in the path of it, but until it runs out of fuel or the weather changes, we don't stop them."
— Robert Roy, Retired L.A. Fire Department

Lack of knowledge or awareness of local fire protection planning efforts, area geography, fire behavior, and political boundaries can negatively impact the effectiveness of fire suppression, logistical support, and public information efforts. As a result, local fire agencies have identified a need for the integration of qualified local agency personnel at all levels of incident management to insure that local knowledge and experience are incorporated into the incident management objectives and operational strategies and tactics.

Multi-Jurisdictional Recommendation 4

The Commission recommends that all federal, state and local agencies continuously maintain and update their mutual aid and cooperative agreements to reflect contemporary needs and costs. (Policy-2)

"We had tribal resources that were implemented throughout the state on all the fires as they were occurring from Simi Valley all the way down to here in San Diego."
— Chief Ed McOrmond, Pechanga Fire Department

To ensure the efficacy of mutual aid and cooperative agreements, it is critical that such agreements reflect current needs and costs and that all relevant personnel are knowledgeable and, therefore, trained regarding the obligations and processes they establish. Reimbursement mechanisms must be clearly identified and understood in advance to avoid any delays in sending much needed resources during a firestorm.

State Recommendations

State Recommendation 1

The Commission recommends that OES and FIRESCOPE incorporate the Emergency Medical Services Authority (EMSA) into the Master Mutual Aid Agreement. (Policy-1)

"Under our umbrella, these groups agree about one thing—whatever we're doing to stop wildfires from damaging our communities, we need to do it better."
— Bruce Turbeville, Chairman, California Fire Alliance

In order for EMSA to ensure a coordinated standardized approach and unified response to medical emergencies during a WUI fire, EMSA should be incorporated into OES' statewide Master Mutual Aid Agreement.

Local Building, Planning and Land Use Regulations; Brush Clearance and Fuel Modification

Multi-jurisdictional Recommendations

"We have to set the priorities for public safety while maintaining some semblance of rationality when it comes to environmental regulations."
— Senator Dennis Hollingsworth

Multi-Jurisdictional Recommendation 1

The Commission recommends that the Joint Legislative Committee on Emergency Services and Homeland Security convene with appropriate representatives of federal, state and local governments to build upon existing governmental efforts to develop a comprehensive interagency, intergovernmental wildland vegetation management plan for California, and integrate the plan's direction into revised or amended federal, state and local land management, land use plans. (Policy-1)

The central elements of the comprehensive plan should include, but not be limited to:

- A scientifically credible balance of harms assessment that evaluates long term costs and risks to people, capital improvements, and natural resources, including air and water quality and listed or endangered species;
- A wildland fuel hazard rating, indicating flammability potential and locations of highest wildfire risks, relative to social, community and ecological values;
- A wildland fuel treatment objective aimed toward achieving a safer mix of age-class distribution in chaparral fuel types and condition-class distribution in conifer fuel types;
- A prioritized treatment schedule aimed toward achieving wildland fuel treatment objectives in a specified timeframe;
- Economic incentives to establish new, unconventional markets as a means to accelerate fuel hazard abatement treatments, including: stewardship contracting, and tax incentives for alternative fuels (e.g. wood biomass for electric cogeneration);
- Development of programs to upgrade the fire safety of nonconforming structures in WUI zones;
- Consideration of tax credits for retrofitting older homes;
- An investigation into whether the MAFFS program concept of operation and emerging technologies can be applied to other aerial firefighting systems;
- Acquisition and implementation of real time and nighttime WUI intelligence;

"With the CEQA guidelines, it takes us six to nine months to be able to get approval and get a burn done."
— Chief Bob Roper, Ventura County Fire Department

"The California Coastal Commission is creating a hazardous fuel preservation program up and down the coast. They've also implemented a $12,000 an acre penalty for people doing brush clearance as penalty for complying with the L.A. County Fire Code."
— Ann Hoffman, President, Land Use Preservation Defense Fund

- Consideration of use of emerging technologies for firefighting purposes (e.g., military technology, GPS, UAVs, Operational Area Satellite Information System [OASIS]);
- An operational and funding strategy to implement an interoperable communications strategy; and
- Development of a comprehensive public outreach program that includes emergency evacuation education.

" It's going to happen again, and we've got to get ready."
— Professor Patrick Pagnea, University of California, Berkeley

Until the thousands of acres of dead bark beetle infested trees are removed and sound forest stewardship is achieved, forested areas of the state will continue to have hazardous standing fuel just waiting to become the next conflagration. Existing efforts to remove this threat should, therefore, be expanded.

"This does not need additional research, debate and discussion, this needs application."
— Phil Aune, Vice President of Public Resources, California Forestry Association

One option for accomplishing this goal may be to focus CDF's and USFS's pre-fire management research towards developing uses and markets for the products of vegetation removal. A concerted effort in this regard could develop new products and new markets so that brush removal requires no more subsidy than timber harvesting or coal mining.

Local and state tax incentives, as well as insurance incentives, that would assist homeowners in retrofitting older homes should also be considered.

Multi-Jurisdictional Recommendation 2

The Commission recommends that in WUI areas, the Statewide Fire Safe Council promotes the establishment of local Fire Safe Councils and encourages federal, state and local governments to assist in this effort. (Policy-1)

"Firewise Community Workshops bring the communities together to figure out how to solve these issues about living in wildland urban interface areas."
— Mike Rogers, Consultant

Each committee would be instrumental in coordinating planning, response, and recovery activities and in implementing the recommendations contained in this report for their respective county. These committees should include local experts, citizens, elected officials, fire service and law enforcement personnel and other first responders, and should assist in ensuring effective, multi-agency evacuation planning and drills and encourage a consistent, long-term commitment to fire safe communities.

"These preservation modalities have resulted in a situation where it appears animal and plant habitat are more important in some cases than human habitat."
— Ann Hoffman, President, Land Use Preservation Defense Fund

"We were prepared, we have a fire resistant house, concrete, plank siding, Class A roof, and we have vegetative clearance. The house before us had a shake roof and no vegetation clearance, and he wasn't very lucky. They lost the entire structure despite about a dozen helicopter buckets of water dropping on it."
— Dr. Bob Martin, Professor Emeritus, University of California, Berkeley

Multi-Jurisdictional Recommendation 3

The Commission recommends that all federal, state and local agencies and officials give serious consideration to fostering and advancing citizen involvement in the establishment and operation of disaster prevention, recovery and rebuilding groups. Furthermore, the state should develop a disaster recovery model based on the collective input of OES, FEMA, faith-based and community groups, victim advocates and other relevant organizations. (Policy-2)

Federal, state and local agencies and elected leaders should recognize the importance of citizen involvement in the establishment and operation of disaster prevention, recovery and rebuilding groups. Such groups represent community assets to be drawn upon.

Multi-Jurisdictional Recommendation 4

"We need to develop a code that will generically address building construction methodology for all structures located in or near a designated wild land area."
— John J. Tennant, California State Fire Marshall

The Commission recommends that DOI, FEMA, USFS, CDF and OES identify ways to assist, including financially, local governments with WUI fire preparation and mitigation efforts. (Fiscal-2)

The costs and required resources associated with preparation and mitigation efforts on the scale currently required can impose significant burdens on already financially strapped local governments. Federal and state entities should work with local governments to identify ways, both financially and otherwise, to assist local governments to appropriately accomplish these goals.

"One of the barriers for fuels management program is funding."
— Larry Hamilton, Director, Office of Fire and Aviation, BLM, U.S. Department of the Interior

Federal Recommendations

Federal Recommendation 1

As far as California being fire safe, let's not fool ourselves, or anyone else. We have a long way to go.
— Bruce Turbeville, Chairman, California Fire Alliance

The Commission recommends the Wildland Fire Leadership Council address issues of Wildland Fire Prevention and Control and inconsistencies in the interpretation and implementation of the National Fire Plan, Wildland Fire Policy, Structure Protection, and Cost Apportionment process. (Policy-1)

The Wildland Fire Leadership Council would bring focus at the highest level to the problem and to inconsistencies that negatively impact interagency relationships, incident management, mutual aid systems, and local agency budgets.

Federal Recommendation 2

The Commission recommends that Congress considers establishing a National Wildland Fire Insurance Program (NWFIP), with appropriate eligibility criteria, under the direction of FEMA. (Fiscal-3)

The fire protection services responsible for the interface zone, as well as inhabitants and developers, need positive incentives to do a better job of prevention and protection. There are no more tax funds available to provide these resources. Establishing a national wildland fire insurance program similar to the existing National Flood Insurance program would help protect homeowners, provide incentives for compliance with fire safe standards and assist with the funding of local fire protection systems. The program would allow insurance company buy-in and a portion of the premiums would help pay for recovery and for local fire protection, including inspections. In addition, a small commission to determine property owner mitigations and development standards that could be used to reduce premiums should be established.

"I want to compliment FEMA who rushed to our aid, opened a local assistance center in the City of San Diego within 24 hours – 48 hours of the fire."
— Mayor Dick Murphy, City of San Diego

"It's been shown that when you thin pine, you grow better shrubs and the trees grow much better. These fuel treatments would be strategically located, first to protect structures and developments, special natural features, and archeological features, and then divide the landscape to aid fire protection."
— Ray Quintanar, Director, Fire and Aviation Management, USFS

State Recommendations

State Recommendation 1

The Commission recommends that OSFM continues to conduct fire research, including development of fire test protocols for vents, radiant heat exposure for windows and other applicable areas to improve ignition resistant construction techniques. The research process should include implementation of a comprehensive damage assessment process to collect data on efficiency and effectiveness of mitigation practices. (Policy-1)

Statewide WUI fire safe construction features, hazardous fuels/vegetation clearance and modification programs, water supplies, access and defensible space issues should be addressed.

"The fire burned 630 of our 650 acres but we didn't lose a single home on our reservation due to our strict building codes."
— Chris Walters, Disaster Services Coordinator, San Manuel Reservation

Based on its findings, OSFM should make recommendations on the adoption of and future changes to a new WUI Code and local ordinances, with consideration given to mandating a minimum standard of Class A roofing in high and very high hazard zones; double pane windows; louvered attic vent screens; residential addressing; firefighting water supply; defensible space requirements; attic sprinklers; proper ingress/egress for fire equipment; and fire shutters.

"Shortly after the fires, the rain came along and erosion took out almost as many lives as were lost by the fire."
— Congressman Jerry Lewis

Discussions surrounding these and like issues should include building, fire, planning and environmental groups to enhance communication and support of OSFM's fire testing efforts.

"Despite the National Fire Plan, California Fire Plan, local fire plans, the 100 plus local Fire Safe Councils, etc., preventing wildfires is not a priority. Funding for prevention efforts is down from historic, yet still under funded, levels.
— Bruce Turbeville, Chairman, California Fire Alliance

State Recommendation 2

The Commission recommends that Mountain Area Safety Taskforce (MAST) type programs be considered as a model for fire safe council efforts in target areas. (Policy-1)

Communities are encouraged to initiate planning where it does not exist and to review implemented efforts for completeness. Planning efforts should include community level danger recognition, evacuation planning, and coordinated response of law enforcement, fire services, public utilities, and other critical infrastructure.

State Recommendation 3

"Insurance companies must notify homeowners of the incentives that are available to them as they make claims for reimbursement for losses and go forward and rebuild. Because all we're doing is recreating the same mess that we just got ourselves out of."
— Chief Jeff Bowman, San Diego City Fire Department

The Commission endorses SB 1855 by Senator Deirdre Alpert. (Policy-1)

SB 1855 would eliminate unintended underinsurance by requiring insurers to provide a cost comparison and explanation of each available coverage for a particular home.

Communications Interoperability, Information Technology and Public Outreach

Multi-Jurisdictional Recommendations

Multi-Jurisdictional Recommendation 1

The Commission recommends that all EOCs dedicate a Public Information Officer (PIO) or establish a Joint Information Center (JIC) to inform and respond to questions from the media, the public and elected officials. The PIO or JIC should be stationed in or near the EOC and have timely access to the latest information. All available technologies should be explored to expedite the timely dissemination of information. (Policy-1)

Dedicating a person in the EOC as the PIO or establishing a JIC similar to the one San Bernardino County used during the October 2003 Fire Siege enables the media, public and elected officials to obtain accurate, updated information without interrupting or interfering with fire suppression activities.

While fire agencies can inform the public through the media and/or Emergency Alert System of information such as road closures, path of the fire and evacuations, all available technologies should be explored for expediting the dissemination of such information.

If a JIC is created, the Commission recommends that the JIC be located adjacent to a county EOC so as to enhance information coordination.

"Coming in as a strike team leader, even though I had the standard load that CDF had, I didn't have the frequency because the command net in Southern California was changed. We ended up having to reprogram six radios on the strike team because none of us had that frequency. That takes time, it accounts for a lot of confusion. There is also the possibility of inaccurately entering that frequency because it's all done manually in the heat of the battle. It's not good, it creates problems.
— Kevin O'Meara, Battalion Chief, CDF

Federal Recommendations

Federal Recommendation 1

The Commission recommends that sufficient standardized frequencies be issued by the Federal Communications Commission (FCC) to meet the interoperable communication needs of fire and emergency personnel. (Policy-1)

The ability of public safety emergency and support personnel to communicate with each other via voice and data in real time is critical in large magnitude events where multiple disciplines and multiple jurisdictions are involved. A lack of sufficient radio frequencies, as well as

"In the period of time during the fire, we had 265,000 busies in the east San Diego county area...that's 24 times normal. That was from someone hitting the button on the radio, speaking into the mike and getting a busy signal."
— Curt Munro, Manager, San Diego/ Imperial County Regional Communications System

"Robert E. Lee had better communications at Gettysburg than we did."
— Chief Darrell Jobes, East County Fire Department, quoting Cedar Fire Incident Commander David Hawkins

incompatible systems and technology, at times made it impossible for strike teams to communicate with incident commanders during the October 2003 Fire Siege. Many firefighters found it necessary to carry three or four different radios in order to keep communication lines open, while others used their cell phones or developed special signals on their engines to send out emergency warnings. Some strike team leaders found it necessary to designate someone to monitor radio traffic across various frequencies, or to do so personally, diminishing their availability for other critical activities and distracting their attention from the job of saving lives and property.

Consequently, funding for interoperable communications systems should be a high priority at the federal and state levels and consideration should be given to the use of homeland security funds, among other resources, to achieve this goal.

"It's not within the realm of normal traditional business for agencies to share their information and work together, even between departments. But where this is done, success can be found."
— Russ Johnson, Public Safety Industry Manager, ESRI—Geographic Information System

Currently, many state and local agencies rely on proprietary radio technology, which prevents public safety personnel with equipment from different manufacturers from communicating with each other. To facilitate emergency fire communications, fire communications vendors should be encouraged to adhere to consistent bandwidth and frequency standards and, as radio systems change and new communication frequencies are added, capability to continue to communicate on currently existing frequencies should be maintained and federal partners should continue to provide for narrow band analog for major incident communications until state and local agencies are equipped for digital communications.

State Recommendations

State Recommendation 1

"We're talking about saving lives. We lose people when we aren't able to give them advance notice and say, the fire's right there, head over there."
— Robert Roy, Retired L.A. Fire Department

The Commission recommends integration of the Multi-Agency Incident Resource Processing System (MIRPS) with the California Fire and Rescue Mutual Aid System. (Policy-1)

Integrating MIRPS with the California Fire and Rescue Mutual Aid System would increase efficiency and timely dispatch of mutual aid resources by enabling state emergency coordinators to quickly determine the status of local resources.

State Recommendation 2

The Commission recommends that the state implement a research and development working group within FIRESCOPE to explore emerging technologies for firefighting purposes (e.g., military technology, GPS, UAVs, Operational Area Satellite Information System (OASIS)). (Policy/Fiscal-1)

Scientific and technological advancements can increase wildfire predictive capabilities, preparedness and efficient real time responses, greatly enhancing fire suppression efforts and firefighter safety. New and existing technologies should be explored for, among other things, the ability to safely fly fire fronts during hours of darkness and times of limited visibility and the ability to identify fire location and assist in predicting a fire's future location and intensity.

"FIRESCOPE a number of years ago did an excellent job with coming up with these standard loads for the radios. Problem is, over the course of the last 30 years, radio systems have changed, people have changed frequencies. Unfortunately in the fire service, even though we share a lot of information, often times those changes in frequencies aren't shared. And even if they are shared, the cost of reprogramming the radios is insurmountable."
— Kevin O'Meara, Battalion Chief, CDF

For example, Predator-type UAVs have capabilities such as infrared and other equipment that would enable fire personnel to observe a fire line at night, including through smoke. Such platforms can be placed in an orbit above a fire or series of fires and provide continuous real time information, instantaneous situational awareness capabilities to firefighters and incident commanders that greatly enhance fire suppression efforts and save lives. GPS technology, attached to each fire engine, would enable Incident Command Centers (ICC) to know the exact location of each of its engines.

Coupled with other currently available technology, a graphic display of the current location of a fire and the predicted future location of the fire and its intensity, including annotation of the location of fire suppression vehicles and other air and ground resources, such as ground personnel, is possible.

The California National Guard's recently created mechanism that enables commanders to access real time information via the Internet and satellite downlink should also be explored.

State Recommendation 3

The Commission recommends that each engine crew and chief officer have the capability to communicate effectively across multiple frequency bands. (Policy/Fiscal-1)

"The lack of money for radio purchases and system upgrades is perhaps the largest barrier to the implementation of interoperable radio systems. It is clear that funding levels need to be significantly increased, but in these difficult budget times, that is easier said than done."
— Senator Bruce McPherson

Communication is critical to firefighter safety and effective fire suppression. With mixed frequency ranges utilized by diverse fire agencies, radio communication reliability must be improved. Much reliance is made on radio caches, but their on scene availability is often delayed.

The Commission also recommends that all local fire service agencies meet the FIRESCOPE requirements for minimum 32 channel VHF radio capability for radio interoperability on all firefighting resources responding to WUI fires.

"What happened that Sunday really changed the way people view the threat of fire in the city. As a result, there are many questions, media coverage and public discussions about how the fire got so big and why so many homes were destroyed."
— Assembly Member Christine Kehoe

"People evacuated not because they were notified to evacuate but because their electricity went out. There needs to be a more effective and direct method of evacuation."
— Hal Mintz, Property Owners Association, Disaster Service Coordinator

"We can make huge investments in communication systems and coordination systems and command systems that would have little or no real benefit under extreme burning conditions without paying attention to the factors that predispose these highly intense, severe, rapidly growing wildfires. I'm not sure that Humpty Dumpty and all the King's men and the most expensive radio systems that we could ever imagine would ever keep up. The tin cans with the string don't work anymore."
— Jerry Williams, Director, Office of Fire and Aviation, USFS

State Recommendation 4

The Commission recommends that local governments improve public outreach and emergency evacuation education. (Policy/ Fiscal-1)

Such outreach and education is necessary for public safety and to ensure public support of fire service activities. For example, it is not uncommon for the public to inaccurately assume that a fire is not being properly fought unless planes are in the air, and better public understanding of the appropriate use of aviation resources during wildfires is needed. While fixed and rotary winged aircraft are an important firefighting tool to slow the spread of fire, they are only one of many resources utilized. Additionally, it is considered both a life safety threat and potentially wasteful to make aerial retardant drops during wind conditions over 35 mph.

State Recommendation 5

The Commission recommends that state agencies take advantage of the work that has been done locally to create regional communication systems and join with the local agencies on a regional basis to enhance those systems. (Policy-2)

The state must begin to fashion solutions that deal not just with major disasters, but also the day to day interactions of public safety agencies and their interoperability requirements. The public safety community in California must move toward interoperability using a standards based approach and acceptance of the Project 25 standard as a criteria for federal funds, but must also realize that an independent funding mechanism will be necessary to expedite and accomplish interoperable communications. Additionally, any statewide communication system should include all strategic and tactical medical providers and both urban and rural coverage.

State Recommendation 6

The Commission recommends that the state update and expand current handheld and mobile radios to be utilized on major mutual aid incidents as a short-term, temporary solution to the interoperability problem. (Fiscal-1)

This lack of wireless interoperability often compromises safety and effective emergency operations during WUI firefighting and other mutual aid incidents. Updating and expanding current handheld and mobile radio caches can provide an immediate but temporary work around to address this critical problem.

State Recommendation 7

The Commission recommends that OES Fire and Rescue Command Networks be expanded. (Fiscal-1)

The doubling (putting one on top of the other) of the current 28 mountaintop repeaters will result in four different command nets to improve statewide communication. This will expand OES fire radio networks and allow better coordination between ICS and Operational Area Communications Centers.

Additionally, the OES OASIS Communication System, which connects all 58 counties and is utilized on a daily basis, was installed in 1989, and should be upgraded to maximize communications and interoperability.

Local Recommendations

Local Recommendation 1

The Commission recognizes the critical role of timely emergency notification of the public of imminent threats and recommends that local governments prioritize the development of appropriate early warning systems to address the needs of their communities. (Policy-1)

Many of the victims of the October 2003 Fire Siege indicated that they had no warning of the fire's approach. In examining potential early warning systems to address the needs of their communities, local governments should consider reverse 911, emergency evacuation siren systems and potential combination systems, especially in remote areas.

"The role of communications is a lifeline for firefighters."
— Mike Wingate, Regional Incident Communications Coordinator, USFS

"As an engine company Captain, I want an incident action plan that actually has as part of it a communications plan."
— Captain Mark Hartwig, San Bernardino Professional Firefighters

"We are the ones that go out there and put the fires out. We are the ones that risk our lives out there. All I can say is that, without proper communications, I'm surprised we didn't lose more bodies than what we did, and I ask that the Commission look into the communication problems because there's nothing more frustrating to a company officer than, when you engage in a fire, and you have communication problems."
— Captain Dave Lopez, L.A. County Firefighters

"One of things that was very frightening for a lot of people was getting a bang on the door or a sheriff's deputy going down their street with a PA system telling them to get out now without having any forewarning whatsoever."
— Supervisor Greg Cox, San Diego County

"It's obvious, not just from these fires, but from other incidents as well, that we still have a way to go on interoperability of communications."
— Director Dallas Jones, Governor's Office of Emergency Services