



# ORANGE COUNTY FIRE AUTHORITY

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## Santiago Fire 2007

Written Statement of Fire Chief Chip Prather,  
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presented to the

DOMESTIC POLICY SUBCOMMITTEE

OF THE

OVERSIGHT AND GOVERNMENT REFORM COMMITTEE

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**RESIDENTIAL SPRINKLERS AND SMOKE DETECTORS SAVE LIVES**

Good morning, Chairman Kucinich, Ranking Member Issa, and members of the committee. I am Fire Chief Chip Prather, of the Orange County Fire Authority and it is my pleasure to address you today on our response to the Wildfires of 2007. Specifically, I will address our response to the Santiago Fire beginning on October 21<sup>st</sup> with an act of arson and ending on November 8<sup>th</sup> when full containment was achieved. However, the impact of that incident is ongoing as we've begun to see the potential for further damage due to rain induced landslides. We've already begun extensive planning and preparation with our partners at the US Forest Service, CalFIRE, County of Orange, City of Irvine, City of Tustin, Red Cross, Inter-Canyon League and Fire Safe Council.

I understand that your primary interest and jurisdiction may be over those federal agencies that contributed to the response but I know that you will also need to understand what local resources and actions were taken both in conjunction with and independent of those agencies. While large incidents such as these wildfires require assistance from our out of state friends and federal agencies there is a lot of work being done by local agencies to prepare and respond with all available local resources. I will also discuss groups such as the Fire Safe Councils and the work they performed in planning and responding. Hopefully you are also receiving information from our state partners at CalFIRE, who I know work closely with federal agencies and the military to coordinate aerial assets.

The wildland urban interface (WUI) fires in Southern California during October 2007, on the heels of a similar disaster just four years ago, provide a good opportunity to set new risk reduction and emergency response goals so that a better outcome might be achieved. In addition to providing an overview of the WUI fire environment within the Orange County Fire Authority's (OCFA) service area and a short review of the October 21<sup>st</sup> Santiago Fire, the purpose of my testimony is to suggest ways in which those responsible at all levels (elected policymakers, appointed leadership, home/landowners, and public safety responders) can change the future as it relates to WUI fires. In other words, I would invite this committee to focus not on what went wrong or "who goofed" during the 2007 October firestorms but rather on what must be done to achieve a different and more acceptable outcome next time.

It is my professional opinion that the outcome of the 2007 Southern California WUI fires is much better than that which occurred during the 2003 Firestorms. Indeed the drought and wind influenced burning conditions were more extreme than those present during 2003 and there were more large fires but, by any measure; the losses are fewer this time.

I would respectfully ask this committee, and the many others that have been so quickly assembled to review this disaster, to consider this perspective as you go about your important work:

- Were there activities which could have been done better – of course, that will always be the case when man confronts Mother Nature during a disaster response. Our collective responsibility is to learn from this disaster and adjust or enhance our efforts to confront the next event.
- Did any firefighter, police officer, fire manager or emergency manager intentionally do anything other than their very best with this widespread and rapidly changing disaster – absolutely not. No doubt there are decisions or actions made during this disastrous conflagration which, with the benefit of "Monday morning clarity", will be changed for

the future or which will be handled differently next time. I can assure this committee, when it comes to striving for perfection and reviewing one's performance for areas of potential improvement, there are few professions more critical of themselves than the fire service.

- Will a different outcome be achieved when the next overwhelming series of major WUI fires come to Southern California by spending this important time searching for mistakes, or defending decisions, rather than collectively agreeing that this outcome, while better than the past, is not what our community expects or deserves and then providing the leadership, accountability, and resources necessary to create that future situation.

I have little or no experience with forest management, water or air quality, dealing with endangered species or habitat, or commanding a massive timber fire. I do, however, have considerable experience in the urban environment including WUI risk management, prevention, enforcement, public education, and emergency response. These are demonstrably different fire environments requiring demonstrably different preparation/prevention, response and recovery efforts. I would be happy to discuss that experience and my qualifications with the members of this committee at another time if desired.

### **The Orange County Fire Authority**

The OCFA is the fire department for well over 1.3 million people living in 22 cities and the unincorporated areas of Orange County. The fire and life risk within the OCFA's 551 square mile service area ranges from that which would be expected in a highly urbanized and densely populated community to thousands of acres of less populated brush covered hills and deep canyons. Much of the brush covered areas have been impacted by the lack of rain as well as an atypical "freeze" within the last 12 months. The OCFA provides emergency service to its community from a network of 62 strategically located fire stations. In addition to "municipal" type fire engines and ladder trucks, the OCFA maintains an array of "risk specific" vehicles and apparatus including 21 engines designed to work in the WUI environment, 2 helicopters equipped with fixed water tanks, 2 bulldozers, 3 hand crews, along with several patrols and water tenders. The OCFA also provides a robust fleet of "relief" fire engines which are staffed when needed as additional assets during periods of anticipated high fire risk/activity. A series of established procedures are also in place to commit additional engine companies to the large scale emergency while maintaining service coverage for responses to new emergencies within the diverse service area (fire, medical, rescue, HazMat and the like).

The OCFA, and the 10 independent fire departments located within Orange County, along with law enforcement and all other local government agencies, share a common communication system, tactical plans and response procedures, and have a well-coordinated mutual and automatic aid response system. All fire departments, including OCFA, participate in the State master mutual aid process and are NIMS compliant.

### **The Santiago Fire**

The outcome of the 28,000 acre Santiago Fire provides a good contrast between today's land use planning efforts and the challenges associated with the so-called "pre-existing non-conforming" areas scattered throughout Orange County. While the Santiago Fire burned for several days, the most significant brush fire threat to values at risk in Orange County (lives and property) is from the smaller open space WUI fire that "hits the houses" in minutes rather than hours. The wind-driven Santiago Fire traveled 3 miles, from the remote portions of the OCFA's service area into highly populated WUI areas, in approximately 20 minutes. The first communities directly threatened by this rapidly advancing and expanding fire were in neighborhoods recently

constructed under modern building and fire codes. Consequently, there were well maintained fuel modification zones, defensible space near the homes, and, among many other things, non-combustible roofing on the buildings. These required features, along with a massive deployment of firefighting resources, prevented an ember intrusion caused conflagration within the urban community. Over the next several hours, thousands of additional homes located in newer WUI communities were seriously threatened by the Santiago Fire on the different flanks. The homes within these communities, like those which were initially threatened, are constructed under locally adopted codes and/or ordinances aimed at addressing the historical fire risk within the WUI. The building and fire code features in these new communities performed as expected and provided the firefighters standing between the approaching fire and the homes a safe place to work and with a considerable success advantage. Exposure fires (structures) that did begin to burn within these areas were quickly contained by the hundreds of firefighters deployed throughout these neighborhoods avoiding a conflagration.

When the Santiago Fire spread from the urbanized areas of Orange County into the more remote canyon areas, homes built before the newer code requirements became threatened. A series of narrow roadways provide access into these deep brush covered canyon communities where the fire behavior is extreme and the firefighting environment is exceptionally dangerous. These are the areas in which the 15 homes were destroyed in Orange County. While the loss of 15 homes cannot be accepted as a success, it is important to know that there are 1500 to 2000 homes scattered throughout these canyon areas and which were threatened by the Santiago Fire. The work of the Inter-Canyon League and the Fire Safe Council, done long before this fire, in educating and assisting the canyon residents to better protect their homes enabled the many firefighters who courageously stood their ground to save much more than anyone ever expected. Pre-action tactical plans developed for these “very high hazard fire severity zones” anticipate wide spread destruction throughout the area.

#### **Challenges encountered:**

1. The demand for wildland firefighting assets needed to conduct perimeter control outpaced the available mutual aid supply. Specifically, the response time for the following assets, requested within 10 minutes of the initially report of the Santiago Fire, was longer than anticipated:
  - a. Air tankers
  - b. Helicopters
  - c. Bulldozers
  - d. Handcrews
  - e. Type 3 fire engines (wildland specific fire engines)
2. The defensible space limitations in the canyon areas and pre-existing non-conforming construction types.
3. Extreme burning conditions (high wind, low humidity) and large areas of old age class brush with exceptionally high concentrations of dead fuels (drought/freeze caused) within the canyon areas.
4. Hundreds of homes threatened on various fronts required “bump and run” tactics along with frequent redeployment of large numbers of firefighting resources as new areas became threatened.
5. Rapidly advancing fire, with dangerous long-range spotting, required sustained defensive firefighting operations with few opportunities for offensive tactics (i.e. limited perimeter control).

#### **Action being taken by OCF following the Santiago Fire:**

1. Comprehensive review of how the WUI building and fire code requirements preformed.

2. Comprehensive review of what options exist to improve fire safety within those communities/areas which were constructed prior to the WUI building and fire code requirements
3. Seeking ways to provide a greater measure of support to the Fire Safe Councils within Orange County
4. Reviewing alternatives which will provide a greater level of enforcement authority to assure WUI fire code compliance
5. Reviewing alternatives which will provide a greater level of emergency response “surge” capacity at the local level to decrease the reliance on mutual aid or support from state or federal responders such as:
  - a. Increasing the number of helicopters operated, or controlled, by OCFA
  - b. Increasing the number of bulldozers and hand crews
  - c. Increase the number of firefighters staffing “brush” engines
  - d. Increasing the number of “relief” fire engines

**Information needed to assist OCFA, and other local jurisdictions, in determining the level of action which should be considered by the local policymakers:**

1. Air tankers:
  - a. Work has been underway for some while to increase the efficiency of fire retardant drops from military C-130 aircraft by fitting these planes with an improved dispersing mechanism.
    - i. What is the status of this project, when will it be completed and how many military C-130’s will be available for this purpose in Southern California?
  - b. A few years ago, following a NTSB notice, the USFS grounded a very large portion of its contract initial attack heavy air tanker fleet because of safety concerns.
    - i. Are there fewer initial attack heavy aircraft available today than before the NTSB notice was issued?
    - ii. If so, what steps are underway to replace those initial attack heavy air tankers and when will that be completed?
    - iii. Given the increasing frequency of destructive WUI fires in Southern California, is the USFS planning to increase the number of initial attack heavy air tankers available in this state?
2. Engine companies:
  - a. There are many versions floating around of what the USFS expects of its firefighters when it comes to protecting structures within the WUI. What is the USFS policy regarding their engines protecting structures?
  - b. How does the number of firefighters and fire engines on duty each day compare to that which was provided in Region 5 last year and the year before?
  - c. Is it indeed the case that funding to pay for the temporary relocation (pre-positioning) of USFS suppression resources from one area to those areas experiencing, or expected to experience, high risk fire conditions has been eliminated or changed in some way?

**What could be done to achieve a different outcome?**

While there is no single solution to the challenges associated providing fire protection to WUI communities, the steps necessary bring about a more desirable outcome aren’t overly complex or difficult to identify – turning those items into sustained action, however, is exceptionally difficult, expensive and controversial. Specifically;

1. Land Use Management consistent with the known risk within the environment. Many communities within the state and across the country are within high risk wild land fire zones where conditions are particularly conducive to large vegetation fires and large, fast spreading fires. Not only are fires in these areas more expensive to suppress they are the costliest in terms of loss of life, property, and our natural resources. It must be recognized that these “high risk” zones require higher standards in building codes; higher levels of available suppression resources, and increased fuels reduction in the adjoining forests.
  - a. Planning/Zoning restrictions. Planning and prevention efforts necessary for creation of fire safe communities are lacking. More needs to be done to recognize the hazard and identify appropriate mitigation.
    - i. Recognition: State and local planning agencies need to partner with fire safety experts when developing General Plans and assessing development proposals.
    - ii. Guidelines: Federal guidelines should be developed to assist state and local agencies in development of land use policies that reflect wildfire hazards and mitigation strategies. These guidelines should include assessment criteria based on results of post-fire incident analysis and wildfire modeling and indicate situations where the risk is too high to be mitigated by reasonable measures (vegetation management and construction requirements).
    - iii. National Development Policies: A national position on land use relative to development in wildfire prone areas should be developed and incentivized with restrictions on federal reimbursement.
  - b. WUI specific building and fire codes. California only recently developed ignition resistant construction requirements, which will be in effect in designated high fire hazard zones statewide by July 2008. Challenges include:
    - i. Fire Hazard Zones: Application of the requirements is controversial as statewide, let alone national, designations are difficult to secure. Identification of structures subject to direct flame impingement and/or radiant heat versus ember intrusion only is not an exact science. Funding for post-fire analysis and pre-fire modeling and development of criteria will go a long way in improving the science and assisting local agencies in determining where additional “hardening” of homes and other structures is necessary. National construction codes contain flood, seismic and wind maps, yet nothing on fire which claims more lives annually than all other national disasters combined.
    - ii. Product Standards: Developed with Federal grant funding, the new regulations include CA product test standards which window, eave, wall and deck manufactures are struggling to meet. National standardization and testing, and availability of testing laboratories would be beneficial in increasing availability and reducing costs. Products should carry a national listing such as UL does for approved electrical appliances.
  - c. Risk reduction measures: Construction requirements are of limited value without appropriate fuel reduction around and within communities. Efforts are needed to:
    - i. Determine appropriate clearance distances relative to fuel, topography, weather and fire history. Standards should be performance based rather than prescriptive in order to maximize flexibility
    - ii. Identify regional planting palettes (type, spacing, irrigation/maintenance requirements, etc.) that reflect fire safety and environmental concerns

- iii. Pre-emptive status over environmental regulations should be granted to property owners following established vegetation maintenance standards
      - d. Pre-Existing Non-Conforming Homes: Comprehensive review of what can be done, including grants, research and/or incentives, for the pre-existing non-conforming homes within the WUI and high hazard areas. The risk is difficult to mitigate in these areas, and more needs to be done:
        - i. Vegetation management: Once guidelines for creation of defensible space are established they also need to be adapted to address existing homes with limited property to effect required clearance (additional thinning, removal, spacing, etc.).
          - 1. Model agreements for national and state lands should be drafted and criteria developed for off-site vegetation management where risk remains high.
          - 2. Community wide fuel breaks and vegetation management on interior open space lands should be considered, even when such management must occur on publicly held lands to be effective.
        - ii. Reconstruction: Incentives, including rebates and/or insurance rate reductions, should be given to those who choose to “harden” their homes, i.e., replace combustible roofs, box eaves, protect or relocate vent openings, replace single pane/non-tempered windows, replace combustible decks and patio covers, etc.
        - iii. New technologies: Research into new technologies (gels, foams, wraps) that can protect homes in high risk areas should be conducted and where found to be effective products should be tested, listed and marketed.
- 2. An engaged and informed community along with solid code/ordinance enforcement and compliance.

Within California, the Fire Safe Council Concept is well accepted. Using matching federal funds and mostly volunteers, communities get directly involved in reducing fuel loadings and increasing defensible space within and around their communities. It has been shown many times this effort has made a difference. This effort can easily be increased by eliminating the “matching” fund requirement side and ensuring the funding for such grants remains consistent and unrestricted when used to reduce risk. Again the volunteers who lead this effort simply do not have the means to match the grant even with a soft or in kind match.
- 3. An overwhelming response of trained firefighters, on the ground and in the air, that is well-coordinated and immediate.
  - a. The priority of every firefight is to 1) protect life; 2) protect structures/property; 3) protect the environment. When the prevention efforts fail, the best way to achieve these priorities is to confine fires to “initial attack” (keep them small).
    - i. Confining fires to initial attack requires a quick response of trained firefighters on the ground and in the air.
    - ii. Sufficient air and ground firefighting assets must be provided to aggressively attack fires while they are small.
  - b. While large WUI fires occur throughout the year in Southern California, history shows the multiple/simultaneous large loss WUI fires are common between September and December.
    - i. Steps should be taken to establish a “surge” capacity by pre-positioning additional assets into the expected theater operations during those periods

- to reduce response time and to provide a greater number of ground and air assets as fast as possible to 1) control fires quickly, 2) protect values at risk, 3) control perimeter.
- ii. FEMA currently does this with its locally staffed Urban Search and Rescue Task Forces, and other disaster assets, when a hurricane meeting certain predicted thresholds is forecasted to “make land” within the United States.
- c. During these major deployments, the California Wildfire Coordination Group (CWCG) consisting of federal, state and local personnel define priorities and use the Incident Command System (ICS) developed through FIRESCOPE here in California. An area that repeatedly comes to light after an event such as this is the difficulty that occurs in rapidly providing the CWCG with the information needed to perform this task; incident status, values at risk, resources needed and resources available to meet those needs. Although California is a model for the country, there remains a need to increase the efficiency of this coordination process especially during those times when several major emergencies are simultaneously occurring.
- i. The best way to bring about these improvements is by expanding the use of pre-event interagency simulation exercises (training).
  - ii. Supporting this effort with a single purpose (task specific) federal grant funds would make a significant difference in making this happen.

In summary there is more work needed for all levels of government, private sector and members of the public to ensure that we are better prepared and better equipped for the next large wildfires. I hope that your committee can help focus efforts on looking forward and holding all parties accountable for the steps that need to be taken. I believe several steps have already begun but there are other actions that need to be considered. For one the federal government and states should consider what they can do to create incentives for responsible land use planning. While many communities were built prior to the benefit of some of the standards and codes in place now there are steps that can be taken to improve defensible space, replace old roofs and improve other features. In some cases you should also consider disincentives for poor planning and whether federal reimbursements for emergency incidents should be tied to local actions to improve these items.

Funding is needed to support those things we know worked well. Community action via Fire Safe Councils and pre-planning for evacuations ensured that there was no massive loss of life. It has been our experience in Orange County that the citizens in those areas are known to be at risk want to take the steps to improve their chances. They are highly motivated, organized and independent people who will take steps provided they receive good information. The federal government can provide critical assistance to create performance based standards on mitigation and clearance activities both on federal and private lands and creating regionally based plant palettes. We are not environmental experts and local agencies need guidelines to inform property owners on what steps to take to create defensible spaces.

Finally, there is no doubt that as we continue to look into the response to these fires that we will identify tactical steps that can be taken to better position resources prior to these events. As with every incident we always find ways to make sure we have just one more engine, one more firefighter or one more bit of equipment for the next fire. We learn and we get better. The process is under way amongst policy makers and fire professionals to review what type of additional assets are needed and how much. However, I encourage you not to focus on the of



resource questions. At some point it doesn't matter how many personnel and equipment you have if the other steps have not been taken.

Again thank you Chairmen Kucinich, Ranking Member Issa and members of the committee for allowing me this time.