INDEPENDENT REVIEW PANEL REPORT

CANYON 2 FIRE REVIEW
October 9, 2017

Independent Review Panel

Bill Bamattre
Tim Casey
Bob Roper

Executive Summary

Over a two-week period, there were two fires in the Mutual Threat Zone (MTZ) involving the following jurisdictions: Orange County Fire Authority (OCFA); City of Anaheim; City of Corona (CFD); California Department of Forestry and Fire Protection (Cal Fire); and the United States Forest Service (USFS).

- The Canyon 1 Fire occurred on September 25, 2017
- The Canyon 2 Fire occurred on October 9, 2017

Following the Canyon 2 Fire on October 9, 2017, the OCFA Board of Directors commissioned an Independent Review Panel (IRP) to review various issues related to the response to the Canyon 2 Fire. This Executive Summary provides a brief overview of the IRP's key findings and conclusions.

1. **Citizen Complaint:** A citizen reported to the cities of Orange and Anaheim (ANA) that on October 8, he had overheard radio scanner traffic between an Anaheim Police helicopter (Angel 26) and OCFA ECC (Emergency Command Center) in which the Anaheim Police helicopter reported flames outside the burn area of the September 25, 2017 Canyon 1 Fire. The citizen alleged that OCFA refused to respond, which contributed to the start of Canyon 2 Fire on October 9, 2017.

   IRP Findings/Conclusions: *The citizen complaint is inaccurate and unfounded. The complainant only overheard the limited communications between OCFA ECC and Anaheim PD. The Anaheim PD helicopter reported flames "inside" the burn area of the previous Canyon 1 Fire. OCFA ECC had several communications with the United States Forest Service (Cleveland National Forest) regarding the fire report, including offering to launch an OCFA helicopter to drop water. USFS has jurisdictional responsibility for the area of the fire and did not accept the OCFA offer of assistance. The IRP also concurs with the joint Anaheim FD/OCFA/Cal Fire Incident Investigation Report that found no connection between this fire and the Canyon 2 Fire start on October 9, 2017.*

2. **News Story: Orange County Sheriff's Department (OCSD) states they were ready to drop water:** According to this news story, OCSD had water dropping helicopters over the fire at the start of the Canyon 2 Fire and was ready to drop water within 15 minutes. According to the news story, OCSD offered to drop water, but OCFA refused.

   IRP Findings/Conclusions: *OCSD did not have water dropping helicopters over the fire at the start of the Canyon 2 Fire. OCSD did have one helicopter training in the Irvine Lake area and two other helicopters located at various locations in the county. OCSD did contact OCFA ECC to offer assistance several times shortly after the outbreak of the Canyon 2 Fire. OCFA initially declined the offers of assistance. Several hours after the start of the Canyon 2 Fire, OCFA did contact OCSD to determine if an OCSD helicopter was available to provide Helicopter Coordinator (HLCO) support. OCSD did not provide a helicopter for HLCO support due to fuel tender support issues.*

3. **News Story - Non-use of OCSD helicopters:** Why were no OCSD helicopters used on the Canyon 2 Fire?

   IRP Findings/Conclusions: *The IRP has not been able to determine a definitive answer to this question. At the outset of the Canyon 2 Fire, OCFA was able to fill its immediate, initial helicopter needs utilizing its own helicopter resources (ORC1 and ORC2) and CDF 305. Subsequent air resource needs were filled by Cal Fire "South OPs" (Cal Fire/USFS geographical area command center in Riverside) through the established ordering process using available Fire "Agency" helicopters. Several hours after the start of the Canyon 2 Fire, OCFA did contact OCSD to determine if an OCSD helicopter was available to provide HLCO support. OCSD did not provide a helicopter for HLCO support due to fuel tender support issues.*

   The IRP recommends that OCFA and OCSD develop a collaborative "Agency" relationship that will enhance the level of service to the public, improve operational integration and provide cost savings.

   As a positive step consistent with this recommendation, subsequent to the Canyon 2 Fire, OCFA ECC has implemented new procedures requiring OCSD notification:

   > *"In all medium and high watershed dispatches, the OCFA will check to see if the OCSD has a Type 2 helicopter available. If available, they will be added as an* ***EXTRA*** *resource to the response."* ***(Appendix A: OCSD Helicopter – Vegetation Fire Response Memo, October 27, 2017)***

4. **Inquiry from Metro Net Dispatch**: Metro Net inquired as to OCFA's timeline, indicating that Metro Net transferred a call to OCFA at 9:28 a.m. on October 9, 2017 with a report of smoke and flames inside the burn area and OCFA dispatched a vegetation fire response at 9:43 a.m.

   IRP Findings/Conclusions: *The IRP confirmed the Metro Net call to OCFA. Rather than immediately dispatching a response consistent with department protocols, ECC attempted to confirm and validate caller information using various methods, thereby preventing a timely dispatch. Post Canyon 2 Fire, Metro Net and OCFA have a new directive to dispatch personnel to facilitate quicker dispatch of emergency resources.* ***(Appendix B: ECC Communications - Vegetation Response Memo, October 25, 2017)***

5. **Internal Analysis - Handling of initial phone reports:** OCFA's Dispatch Center (Emergency Command Center, or ECC) received a transferred call from CHP at 8:32 a.m. on October 9, 2017, wherein the caller reported "fire" at the 91 Freeway/241 Toll Road. Understanding that OCFA's dispatch for a vegetation fire response occurred at 9:43 a.m. following a subsequent call, the details of this earlier 8:32 a.m. call require review.

   IRP Findings/Conclusions: *The IRP confirmed the call transfer from California Highway Patrol (CHP). ECC attempted to validate caller information rather than immediately dispatching a response consistent with department protocols. Post*

Canyon 2 Fire, OCFA has a new directive to dispatch personnel to facilitate quicker dispatch of emergency resources. ***(Appendix B: ECC Communications - Vegetation Response Memo, October 25, 2017)***

6. **Internal Analysis - Mutual aid response:** Review the impact of "immediate need" mutual aid strike team response to Sonoma County, and specifically, what was the impact on OCFA's ability to respond to the reports of "fire" beginning at 8:32 a.m. on October 9, 2017?

   IRP Findings/Conclusions: *The Strike Team response to Sonoma County, which included Station 53 in Yorba Linda, did affect the availability of the closest OCFA resource to respond to the reports of fire at 8:32 a.m. OCFA could have implemented other interim short-term coverage options to mitigate the anticipated delay in fully staffing Station 53 through the backfill/coverage process. Post Canyon 2 Fire, OCFA has updated its Move-Up & Cover Procedures to provide for the timely relocation and redistribution of OCFA resources during periods of fire station vacancies.* ***(Appendix C: Move-Up and Cover Procedures, OP.06.27)***

Note:

There are several reviews being conducted; each having a different scope of work. The following describes the parallel tracks underway at the time of this report's publication:

- After Action Review (AAR)
  - The AAR is a standard process the OCFA performs after each notable incident to identify what worked well and what can be improved on. It is more global in nature.
- Administrative Investigation
  - This process is a confidential personnel investigation to determine specific policy/practices violations that may have occurred.
- Independent Review Panel (IRP) Report
  - This report addresses specific questions identified in its scope of work as authorized by OCFA Board of Directors.
- County Board of Supervisor's Review
  - This report addressed specific questions identified in its scope of work as authorized by Orange County Board of Supervisors.

These four reviews, while being conducted simultaneously, will have different release dates and processes. The reader should consider the contents of all four reviews to obtain a comprehensive assessment of the Canyon 2 Fire.

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Purpose of Review & Process

Orange County experienced two major wildland fires in the same area over the span of two weeks, both of which originated in the City of Anaheim. The second of those fires, the Canyon 2 Fire, erupted on October 9, 2017 and burned through several communities in the Anaheim Hills, Orange, and north Tustin areas. The fire was later contained; however, homes and structures were damaged and destroyed. Since then, questions, complaints and allegations have arisen about the timeliness and manner of OCFA's handling of the initial response to the Canyon 2 Fire.

In order to ensure a thorough and transparent review of the response, and to ensure that the Authority correctly assesses and learns from the fire and the actions taken, the OCFA's Interim Fire Chief (Chief McIntosh) recommended an independent review be undertaken of the fire response and the OCFA policies and procedures and that a report and recommendations be provided to the Board. On October 26, 2017, the OCFA Board of Directors authorized this independent review.

The specific Board action, upon recommendation of the Fire Chief, was to "*Direct staff to retain an independent panel to review the actions that occurred between the Canyon Fire and the Canyon 2 Fire and the relevant policies and procedures in place, and report back to the Board.*"

This independent review is intended to focus specifically on an evaluation of questions raised, and related matters, as further described in the Scope of Work detailed below. This independent review is not a traditional After-Action Review (AAR), which will be performed separately by OCFA to evaluate all aspects of the OCFA organizational response to the incident. Further, any OCFA employee corrective actions will be handled via separate administrative examinations.

Scope of Work

In summary, the scope of work is to independently review the complaints that have been brought to OCFA's attention relating to the response to the Canyon 2 Fire, along with associated issues that have been identified as OCFA reviewed the complaints internally, and related issues that may continue to be discovered during the performance of the independent review.

The specific issues for review include:

1. **Citizen Complaint:** A citizen reported to City of Orange and Anaheim that he overheard scanner traffic between an Anaheim Police helicopter and OCFA in which the Anaheim Police helicopter reported flames outside the burn area of the initial Canyon Fire on October 8. The citizen alleged that OCFA refused to respond, which contributed to the start of Canyon 2 Fire.

2. **News Story - OCSD states OCSD ready to drop water:** According to this news story, OCSD had water dropping helicopters over the fire at the start of the Canyon 2 Fire and was ready to drop water within 15 minutes. According to the news story, OCSD offered to drop water, but OCFA refused.

3. **News Story - Non-use of OCSD helicopters:** Why were no OCSD helicopters used on the Canyon 2 Fire?

4. **Inquiry from Metro Net Dispatch:** Metro Net inquired as to OCFA's timeline, indicating that Metro Net transferred a call to OCFA at 9:28 a.m. on October 9, 2017 with a report of smoke and flames inside the burn area and OCFA dispatched a vegetation fire response at 9:43 a.m.

5. **Internal Analysis - Handling of initial phone reports:** OCFA's Dispatch Center (Emergency Command Center, or ECC) received a transferred call from CHP at 8:32 a.m. on October 9, 2017, wherein the caller reported "fire" at the 91 Freeway/241 Toll Road. Understanding that OCFA's dispatch for a vegetation fire response occurred at 9:43 a.m. following a subsequent call, the details of this earlier 8:32 a.m. call require review.

6. **Internal Analysis - Mutual aid response:** Review the impact of "immediate need" mutual aid strike team response to Sonoma County, and specifically, what was the impact on OCFA's ability to respond to the reports of "fire" beginning at 8:32 a.m. on October 9, 2017?

Project Goals and Deliverables

The project goals include:

- Determine facts
- Analyze findings
- Uphold an environment of openness, honesty and transparency
- Develop recommendations to foster continuous improvement

Process

The objective of this effort was to have the IRP remain independent and provide a fact based, unbiased report that will provide clarification and make recommendations for improvement pertaining to the six issues, operational responses and related work environment.

The IRP focused on the six specific issues within the "Scope of Work" while determining and evaluating if there were any underlying and/or contributing factors that impacted the appropriate and timely dispatch, response and mitigation of the Canyon 2 Fire. The initial "Fact Finding" involved requesting a variety of operational data; incident timelines; 911 call records and radio transmission recordings; dispatch procedures and protocols; and researching industry practices. The next step was to interview various staff within OCFA, OCSD, Metro Net and other entities. Individual interview notes were taken, collated,

reconciled and given back to each person interviewed to verify and affirm the factual content. To encourage frank, unfettered, comprehensive feedback from interviewees, names and personal notes are not included in the report.

IRP members researched and validated the stated facts/findings listed after each of the six issues. Key documents, citations, sources and reference materials are listed in the appendices.

The staffs of OCFA, OCSD, Metro Net, Anaheim FD and Cal Fire were cooperative and instrumental in providing data files without the IRP being beholden to any party. We also would like to thank the Orange County Employees Association (OCEA) for providing timely employee representation during this process.

Underlying and/or Contributing Factors

During the course of the IRP review, there was continuing media coverage of the conflict between OCFA and OCSD regarding their respective aviation programs, and responsibilities. During our interviews, there were clearly strong opinions among the staff of each agency regarding this issue. While not specifically included in the IRP Scope of Work, we felt compelled to address this issue and offer recommendations for the consideration of both agencies. Our observations and recommendations are set forth in a separate section at the end of this report.

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Background

In order to understand the issues and recommendations contained in this report, it is necessary to have a basic understanding of how 911 calls are processed; how public safety resources are managed and dispatched; and how public safety aviation programs are administered.

9-1-1 Call Processing

The 9-1-1 telephone system was designed for a caller to easily and rapidly report an emergency incident. When a caller dials 9-1-1, the call goes to the nearest Public Safety Answering Point (PSAP), which will usually be the local Police, Sheriff or California Highway Patrol (CHP). The PSAP dispatches the law enforcement resources as needed and/or transfers the caller to fire and/or ambulance dispatch for assistance. If the PSAP transfers the caller to fire and/or ambulance dispatch, the PSAP can stay on the line to monitor information to enhance the dispatch process. All dispatch centers have performance metrics that measure time of first ring, call processing time, time to dispatch and all calls are recorded. Most fire agencies also provide Emergency Medical Dispatch (EMD) where a caller is given pre-arrival instructions (i.e. CPR, etc.) simultaneously while the call is being dispatched.

Dispatchers have a very demanding, stressful job as they hear first-hand accounts of traumatic events and must process/dispatch an appropriate and timely response. All dispatch centers have interface tools to accommodate deaf, blind and multi-lingual callers. Dispatchers must triage calls to prioritize calls and determine incident location. This skill is essential when dealing with multiple callers often reporting the same or similar type of incident, but from a multitude of different perspectives. This was a challenge before and during the Canyon 2 Fire as callers reported numerous smoke calls from different freeway directions and dispatchers were battling “smoke fatigue.”

When a call is transferred from a PSAP or directly received from a caller, the dispatcher must first define the type of call and verify location. This call processing time varies depending upon the caller’s familiarization of the incident location and their ability to articulate what they are seeing. If there is confusion or any language barriers, valuable time can be lost trying to determine these factors. Once these factors are defined based on the best information available, the call is dispatched per pre-designed algorithms within the Computer Aided Dispatch (CAD) system. CAD will monitor and dispatch the closest available response units per the various aid agreements between different jurisdictions. The dispatch room is staffed with multiple dispatchers and a dispatch supervisor. The supervisor must monitor the various call takers/dispatchers and make spot decisions based upon a changing resource matrix. The supervisor must make these timely dispatch command and control decisions when the challenges exceed the black/white CAD protocols.

Dispatch: Situation Status/Resource Status

Technology has influenced the evolution of dispatch centers and emergency operations. Public Safety dispatch centers are constantly assessing "Situation Status" by monitoring a plethora of information sources and using predictive analytics: weather, traffic, time of day, special events, etc. Concurrently, "Resource Status" elements must be constantly monitored and updated: resource location, staffing, closed resources, committed resources, pre-staged resources, etc. This dynamic management challenge of Situation Status and Resource Status is key to ensuring the coverage necessary to meet response time goals and provide the level of service the public expects and supports.

The dispatch focus of this report is the role of the OCFA ECC (Emergency Command Center) in the management of its responsibilities related to the Canyon 2 Fire. A good synopsis of the process is provided by the following information and table found in the "OCFA Fire Danger Operating Plan." ***(Appendix P: Fire Danger Operating Plan)***

ECC's Role

OCFA's ECC has primary responsibility for implementing this Fire Danger Operating Plan in terms of resource deployment, which involves Fire Communications, ECC Supervisors, the EOC Staff Captain, and the Duty Chief. Decisions are based on the following flow of information:

Resource Deployment Information Flow

RAWS Data *Remote Automated Weather Stations (3 in Orange County)*	WIMS *Weather Information Management System*	Watershed Dispatch Level *Dictates Staffing & Resource Levels*	Possible Modifications *Per Weather Conditions or Fire Activity Levels*	ECC's Initial Attack Response *If a fire happens*
*Each OCFA RAWS, including Fremont Canyon, Bell Canyon, and Aliso Laguna, supports an OC Fire Danger Rating Area (FDRA), which are based on NWS zones, and possess relatively uniform fire danger.	WIMS is a centralized weather data processing system, where daily fire danger ratings are produced that impact staffing levels.	Watershed Dispatch Levels (WSDL) is determined for each FDRA by WIMS indices forecasts.	OCFA's Duty Chief can modify the WSDL's for each OC FDRA, with ECC's coordination.	For purposes of resource dispatching, the highest forecast at 1600 or later determines staffing levels for all OCFA for the following day and is effective for 24 hours from 0800 – 0800.

The Duty Chief position is responsible for strategic level operational Command and Control decisions, while constantly monitoring and evaluating dynamic situational intelligence, to ensure appropriate situational status and resource management.

Public Safety Aviation Administration

Overview

Most public safety aviation programs began through the acquisition of “excess” federal aviation assets derived from a variety federal assignment programs. The use of federally acquired aviation assets may come with air flight restrictions over type of use and/or use over populated areas. While these programs initially have low acquisition/operational cost; the long-term maintenance and replacement costs are similar to civilian model aviation programs. Most public safety aviation programs that start with federally acquired assets have or will transition to a civilian model program for ease of maintenance and operational control.

Fire service and law enforcement essentially share and partner in a common mission: Public Safety. Public safety aviation programs are usually administered by a fire agency; a law enforcement agency; and/or through a joint use fire/law agreement. Each discipline has primary responsibilities and crossover capabilities. Fire aviation programs have the primary responsibility for fire suppression. Law aviation programs have primary responsibility for law enforcement. Examples of crossover capabilities that either discipline may acquire through appropriate training, experience and certification are: Incident Management; Search and Rescue (SAR); Evacuation; Hoist Operations; Tactical Patrol; Water Rescue; Specialized Tactical Deployment (e.g. Haz-Mat, SWAT; Special Events). Both fire service and law enforcement types of aircraft have the same basic communications, operational capabilities, and can be outfitted with FAA approved technical tools. Consequently, a law aircraft could be used on a fire incident and a fire aircraft could be used on a law incident with appropriately trained, experienced and certified technical staff onboard. In California, the CA-Office of Emergency Services (CA-OES) has a model public use aviation matrix to help delineate the rescue call type challenges. ***(Appendix D: OES MOU)*** In Orange County, the Orange County Fire Authority and the Sheriff have been using a MOU to help define how best the two aviation programs can collaborate and interface. Public agencies can also invoke the “Duty to Act” clause while serving the public, which affords certain legal provisions/immunities. **(*Appendix E: 2016 OCFA/OCSD MOU)***

It is hard to mandate any one specific type of stand-alone or joint use aviation program. Usually, independent fire/law public safety aviation programs are based on a combination of need, politics and budget support. Joint use programs are usually initiated where fire/law entities find that there’s not enough flight hours and budget allocation to justify a stand-alone program. The challenge is to ensure the public is provided with the best available public safety service absent parochial objectives that compromise response time and level of service.

The use of aircraft for rescues and/or emergency medical transport is two-fold. First, rescues are loosely defined as “remote” in State documents as the SAR of lost hikers falling under the Sheriff’s responsibility. General rescues of injured victims on or off road are referred to the OCFA. This delineation of duties is contained in the signed 2016 MOU between OCFA and the OCSD. The second area of interest is the use of helicopters for

medical transport. In California, each Emergency Medical Services Agency (EMSA) Director is empowered to grant licenses for ground transports as well as air transports per the ***2005 California Health and Safety Code, Sections 1797.200-1797.226 Article 1. Local EMS Agency***. The EMSA Director has permitted Mercy Air to do on-road air transports and could utilize his/her authority to help clarify air transport roles for OCFA and OCSD.

The use of aircraft for wildland firefighting involves private and public use aircraft. Private aircraft are usually contract services to a public agency at the local, state or federal level. Private aircraft can be further classified as "exclusive use" or "Call When Needed (CWN)." Exclusive use is an enhanced contract service level where the asset is hired by the public agency for a set period of time, guaranteed to be available and receives a stand-by rate as well as an hourly rate. CWN is the hourly contract rate for ad hoc pickup of aircraft when needed. CWN can be applied to private and public aviation assets. Another category of public aircraft is "Agency" assets. These are primarily fire agency aircraft that have extensive fire ground experience and high-level proficiency ratings. There are some joint fire/law aviation programs that share "Agency" classification.

These aircraft and their operations are governed under FAA rules and practices specific to the wildland fire discipline. These specific practices include:

- Common communications packages
- Use of the Incident Command System (ICS)
- Certification, also referred to as "carding," by Cal Fire and/or the USFS
- Joint training programs
- Adherence to incident command/control authority

Orange County Fire Authority – Overview

OCFA began their aviation program in 1994. They currently have four ships, fuel tenders, mechanics, pilots, medics and support staff. Their air operations are located at the Fullerton Airport and staffed on a 24/7 basis. OCFA's primary mission is fire response and rescues. OCFA has stringent pilot recruitment requirements as advertised on their employment qualifications. OCFA performs off-road rescues and aerial rescues in urban environments and has paramedic capable crews.

OCFA is considered an "Agency" resource and maintained in the local and regional Resource Ordering Status System (ROSS) as both a local and regional aircraft asset. OCFA ships are all Type 2 and have belly tanks. OCFA's Night Vision Goggle (NVG) program is one of three certified programs in California. They maintain skills and resources to fulfill an "all-hazard" mission. Support staff is also certified to perform various ICS related aircraft operations.

Sheriff Aviation Unit – Overview

OCSD began their aviation program in 1985. They currently have five ships, fuel tenders, mechanics, pilots, medics and support staff. Their air operations are located at the John Wayne Airport and is staffed on a 7-day/0800, 1800-hour basis. OCSD's primary mission is law enforcement and rescues. OCSD does not have advertised pilot recruitment requirements per their employment recruitment descriptions but does ensure pilot proficiency through their employment process. OCSD performs "remote" rescues for lost hikers and has paramedic capable crews.

OCSD has a CWN contract established with Cal Fire. They are maintained in the OCFA ECC ROSS as a "local" use aircraft, not to be used outside of Orange County. OCSD ships are a combination of Type 2 and Type 3. Both the Type 2 and 3s can drop water and the Type 2s recently were outfitted and carded with belly tanks (Post Canyon 2 Fire). The typing of helicopters for water dropping does not differentiate between using buckets or belly tanks.

Both the OCFA and OCSD have qualified and capable aviation programs. Each program has clearly identified primary missions and some overlap/duplicate services. Since 2000, the OCFA and OCSD have been operating under a mutually agreed MOU to delineate roles and responsibilities, updated in 2016. This MOU was based upon the CA-OES Fire/Law model and was maintained through regular joint training. This MOU allowed each entity to cross train staff and perform exchange of missions in order to provide the public with the optimal level of public aviation services. Exchange of missions included water dropping, HLCO platforms, aerial recons and rescues. Since the Canyon 2 Fire, OCFA has implemented a new directive that OCSD will be notified of all wildland fire incidents and may be used as an "**EXTRA**" resource if they are available.

Oversight

These programs rely on extensive pilot recruitment/qualification programs and "in-house" or contractor maintenance staff in addition to the aircraft. All aviation programs are under the oversight of the Federal Aviation Agency (FAA) and many also participate in specific ancillary certification guidelines. Locations for heliports are usually at public use airports that have controlled air space for safety reasons and not private uncontrolled airports. Fire agencies usually have extensive pilot qualifications as they predominately hire outside agency pilots and make them firefighters. Law enforcement sometimes does not have published extensive pilot qualifications as they may hire officers and train them to be pilots. Either type of program always ensures pilot proficiency and maintenance for obvious safety reasons.

Certification or "Carding"

"Carding" is the term used in the fire aviation industry to display uniform qualifications of helicopters and pilots. Both helicopters and pilots must go through a rigorous annual process administered by Cal Fire and/or USFS aviation teams. Either administered process is valid and has reciprocal acceptance. This process provides basic pilot and

aircraft qualifications for use on wildland fires but does not rate proficiency. Helicopters are certified based upon their type, equipment, capability and maintenance. Pilots are certified based upon their training, experience and operational demonstration of the basic ship and any optional features (i.e. buckets, Forward Looking Infra Red (FLIR), belly tanks, AIDs, etc.). Each aviation resource is also required to have a fuel tender available as a team resource. Fuel tenders are required as the helicopter reimbursement rate is considered a "wet rate," thereby relieving the incident from being responsible to refuel ships. The fuel tender is to have two operators and ensures that the proper bonding, fuel and fuel transfer operation is viable. These fuel tenders also carry a variety of specific helicopter related maintenance parts. If an agency is sending multiple ships to an incident, they are usually allowed to share a fuel tender. If the incident is within a local area, arrangements can be made with a local Fixed Based Operator (FBO), but this exception needs to be authorized when filling the incident request.

Aviation Dispatch Procedures for Fires

When a wildland fire is reported, the original call can come to OCFA ECC via their 7-digit phone line, call transfer from CHP, local law enforcement, Metro Net or OCSD. The OCFA ECC dispatcher performs caller triage to ensure best location, type of smoke/fire report and hazards at risk. Once enough data is validated, the ECC dispatcher may respond one OCFA helicopter for aerial recon and/or dispatch a full vegetation response based upon the daily declared fire hazard severity index.

OCFA is the primary fire aviation "Agency" response entity within Orange County; therefore, they will be part of the initial dispatch. The term "Agency" refers to a fire agency ship or sponsored ship. Agency ships are the preferred/prioritized aviation assets because of the extensive training (operations and communications) to ensure safety and performance. There is also a second-tier helicopter level used under a CWN contract. These are generally private contract helicopters but may also be "public use" helicopters (i.e. OCSD). CWN ships are generally used once "Agency" ships are exhausted. This is a common aviation practice for fix wing planes and helicopters, based upon industry practices/regulations. CWN resources can be reclassified as "Agency" assets if the responsible fire agency facilitates the operation. This may include having the CWN ship under a direct contract or having an operational partnership that is professional, safe and transparent in operations, including communications. This partnership requires regular joint training and a positive working relationship to enable the joint aviation resources to interface proficiently and safely.

When a wildland fire breaks out, the agency having jurisdiction or agency having part of a MTZ will respond aviation resources per pre-established agreements. If the fire is within a MTZ, you may have duplicate response of resources, as the goal is to not delay a response while dispatch is trying to validate jurisdiction. In the Orange County area, there are several MTZs, so it is not unusual to have OCFA, USFS, Los Angeles County (LACO) and Cal Fire helicopters working together as they are all "Agency" ships.

If multiple helicopters are dictated per the call type, OCFA may provide the 2nd ship via upstaffing and/or recall of off-duty pilots. Cal Fire may also send a ship as part of the

MTZ response or under the authority of the Anaheim/Cal Fire State Responsibility Area (SRA) Contract. If the incident requires additional ships, an order is placed from the OCFA ECC to the Cal Fire/USFS Southern Operations Region (South OPs) located in Riverside. South OPs will then contact “Agency” ships via an intercom and ROSS for availability. Agency ships are preferred during initial attack firefighting because of enhanced pilot experience, command adherence and proficiency. Even though CWN and agency ships are both “carded” creating equality, firefighting dictates the need for the best performance. CWN ships are often used for crew and food transport duties, but not excluded from firefighting.

In Orange County, OCFA provides the primary fire aircraft. Based upon OCSD providing a Daily Staffing Report (DSR) citing availability each morning, they may be requested to respond. This process is under OCFA authority except when Cal Fire or USFS assumes incident command and places all aircraft orders through Riverside South OPs. During these times, South OPs gives priority to “Agency” aircraft, then uses CWN aircraft as needed.

Helicopter Coordinator (HLCO) Role

Whenever multiple helicopters and/or fix wing aircraft are firefighting on an incident, there needs to be some type of air traffic control to ensure operational safety. This function usually falls to the Air Tactical Group Supervisor (ATGS) who flies in a small fix winged aircraft and/or to HLCO. In the Canyon 2 Fire, ATGS operated at higher attitudes focusing on multiple fix wing aircraft dropping retardant. ATGS requested HLCO to oversee the close quarter helicopter support within the Wildland Urban Interface (WUI) near homes.

HLCO is usually performed with a Type 3 helicopter due to its size, agility and cost. It is referred to as a HLCO platform because it is not usually dropping water, but rather directing water drops. HLCO platforms can use Type 2 ships but are commonly performed by CWN Type 3 ships staffed with qualified fire staff with appropriate radio communications.

Issues, Facts & Recommendations

ISSUE #1 **– Citizen Complaint**

A citizen reported to City of Orange and Anaheim that he overheard scanner traffic between an Anaheim Police helicopter and OCFA in which the Anaheim Police helicopter reported flames outside the burn area of the initial Canyon Fire on October 8. The citizen alleged that OCFA refused to respond, which contributed to the start of Canyon 2 Fire.

SUMMARY

A. A citizen heard the initial Anaheim Police helicopter (Angel 26) radio traffic with OCFA ECC but was not aware of the succeeding inquiring/clarification communications and phone calls between all the involved dispatch agencies. These subsequent inter-agency communications determined the facts of the call and agency responsible for fire control.
B. Angel 26 and OCFA ECC were in contact relative to the Angel 26 report of flames near Sierra Peak on October 8th.
C. Contrary to the citizen's complaint, the Anaheim Police helicopter crew clearly stated that the observed fire was ***"inside"*** the burn area of the Canyon 1 Fire.
D. OCFA ECC processed the report and determined that the USFS was aware of the fire and located in its jurisdictional area.
E. OCFA ECC offered to launch a helicopter and drop water on the fire. USFS did not accept the offer.
F. The Duty Chief was not informed of the Angel 26 fire report during the handling of the incident nor asked for direction on whether to launch an OCFA helicopter to the fire scene.
G. The citizen's accusation that the October 8, Angel 26 reported fire location ***(Appendix F: Citizen Map)*** was the cause of the October 9, Canyon 2 Fire is unfounded as the two fire origins were separate and distinct from each other according to Anaheim Fire's multi-agency investigation report. ***(Appendix G: Canyon Fires Origins Map)***

On Sunday, October 8, 2017 at approximately 4:40 p.m., an Anaheim Police Department (APD) helicopter (Angel 26) spotted a fire approximately 100 yards north of Sierra Peak and contacted OCFA ECC. This area can be confusing when dispatchers are querying callers as to the exact geographical location. This location is within the MTZ for the USFS, OCFA, Cal Fire and CFD. Ultimately, the reported location was determined to be within Federal Responsibility Area (FRA) which is the fire jurisdictional responsibility of the USFS. Angel 26 did not have a bucket for water dropping and requested the OCFA ECC to launch an OCFA helicopter to the site.

OCFA ECC contacted CFD to report the Angel 26 observations and to see if they could see any smoke from their location. CFD stated that they had received some calls in the morning; but had not received any more calls in the past 2-3 hours.

OCFA ECC then contacted USFS dispatch center (Monte Vista) to report the Angel 26 observations and to determine if USFS had anyone working in the area. Monte Vista

reported that it believed that USFS Engine 20 was near Sierra Peak; but that report was later found to be incorrect. Monte Vista was aware of smoke calls and that crews had been out there earlier explaining the situation to residents.

During the course of conversations with Angel 26, OCFA ECC requested confirmation of the general location of the fire and specific coordinates for the fire location. Angel 26 repeated several times that the fire was in a small green (unburned) area within the Canyon 1 Fire burn area. Angel 26 finally provided latitude/longitude coordinates, but that data was incorrect when plotted.

OCFA ECC contacted OCFA Air Ops to convey the information reported by Angel 26 and prepare OCFA Helicopter Operations Division (OCFA Air Ops) for a possible launch. OCFA Air Ops reported that they were listening to the APD/OCFA ECC communications and standing ready. After additional conversations between OCFA ECC and Monte Vista, OCFA ECC notified OCFA Air Ops that OCFA ECC would not be launching a response. OCFA Air Ops stated that they had continued to monitor communications and concurred.

In its final communication with Monte Vista, OCFA ECC specifically asked whether USFS wanted OCFA to launch a helicopter and drop water on the fire. Monte Vista was ambiguous; did not request a helicopter response; and stated that the fire location was apparently inaccessible and that USFS was just going to let it burn itself out.

OCFA ECC related its final conversation with Monte Vista to Angel 26. Angel 26 responded: “if that is correct, then we’ll let it be.” Angel 26 was notified of the outcome; seemed a little concerned; but left the area as the report was concluded.

Since the reported smoke/fire location was well within the Canyon 1 Fire burn area as confirmed with USFS, no OCFA aerial recon occurred and the USFS assumed jurisdictional responsibility. This concluded the communications between OCFA ECC, Angel 26 and other parties.

The October 8th OCFA Duty Chief was not informed of the Angel 26 fire report during the handling of the incident nor asked for direction on whether to launch an OCFA helicopter to the fire scene. The ECC Supervisor was on a break during this report and was not briefed about it when she returned.

Subsequently, Anaheim Fire Department (AFD) completed a Canyon 2 Fire Incident Investigation Report that was prepared by certified Fire Investigators from ANA, OCFA and Cal Fire. This team cited the area of origin and weather conditions present at the beginning of the Canyon 2 Fire to document the location of the Canyon 2 Fire source. The report concluded that the Canyon 2 Fire was most probably caused by burning embers from a smoldering group of oak trees near the western flank of the Canyon 1 Fire burn area approximately 20 feet east of the dozer control line. This location was 2.4 miles from the Angel 26 reported smoke/fire location with a confirmed cause and was not connected with the Angel 26 report on October 8th.

While the citizen was correct in what he purportedly overheard via scanner radio traffic from Angel 26; he was incorrect in concluding that OCFA did nothing and contributed to the Canyon 2 Fire start on October 9th. OCFA ECC did investigate the report and contacted the USFS/Monte Vista. The USFS assumed jurisdictional control over the situation. In hindsight, OCFA could have directed Angel 26 to communicate directly with the USFS/Monte Vista due to jurisdictional responsibility. Also, OCFA could have implemented its MTZ agreement with the USFS and honored the Angel 26 request for an OCFA air recon.

FACTS/FINDINGS

A. The citizen is an OCSD retiree and current civilian volunteer with OCSD helicopter unit. *(Citizen response to IRP questions and direct observation during meeting with OCSD helicopter staff at JWA)*
B. The citizen overheard radio transmissions between APD and OCFA ECC on the afternoon of Sunday, October 8, 2017 at approximately 4:40 to 4:55 p.m. *(Citizen response to IRP questions and citizen's e-mail complaint to City of Orange on October 11)*
C. On Sunday, October 8, 2017, an APD helicopter (Angel 26) contacted OCFA ECC to report smoke and a small fire on the north side of Sierra Peak. Angel 26 reported that it didn't have its bucket and asked if OCFA ECC could launch*. (OCSD and OCFA audio files and OCFA transcript)*
D. The Angel 26 report placed the reported fire within an unburned/green area within the Canyon 1 Fire burned area. This location is within the MTZ for the USFS, Cal Fire, Corona FD and OCFA. Per MTZ agreements, each agency has a predesignated response that their respective dispatch centers should implement. *(MTZ agreements).*
E. The Sierra Peak area is within the FRA and is within the jurisdiction of the USFS. *(OCFA LRA/SRA/FRA Maps)*
F. OCFA ECC asks Angel 26 to standby to let them check with Cleveland (USFS). OCFA ECC states that USFS had some workers out there yesterday with lots of smoke kicking up. OCFA ECC asks Angel 26 if they see any units up there. Angel 26 responds that they don't see any units but see flames. Angel 26 states that the fire is in a "small green area inside" the middle of the burn area. *(OCSD and OCFA audio files and OCFA transcript)*
G. OCFA ECC calls CFD and asks if they see any smoke from their side. CFD reports that they received quite a few calls in the morning but haven't received any calls in the last 2-3 hours. OCFA ECC advises CFD that it might be starting a launch. *(OCFA audio files and OCFA transcript)*
H. OCFA ECC calls Monte Vista (USFS) to ask if they have anyone out in the Canyon 1 Fire area. Monte Vista responds that they think Engine 20 is up near Sierra Peak. OCFA ECC informs Monte Vista of report from APD helicopter at a location one hundred yards north of Sierra Peak. Monte Vista indicates that they are aware of the smoke and that they were out their earlier making contacts with residents to explain what was going on. *(OCFA audio files and OCFA transcript)*
I. Angel 26 contacts OCFA ECC to request status update. OCFA ECC asks Angel 26 for incident location coordinates. Angel 26 states that it is a hundred yards north of

Sierra Peak where all the satellite and dish communications towers are. *(OCSD and OCFA audio files and OCFA transcript)*

J. OCFA ECC contacts OCFA Air Ops to relay Angel 26 report and observations. OCFA Air Ops states that they have been monitoring the communications and that it sounds like its down in the burn area. *(OCFA audio files and OCFA transcript)*

K. Angel 26 contacts OCFA ECC and provides specific coordinates for the incident location. Angel 26 states that they are still watching. There are still flames and smoke, but it's not spreading quickly. *(OCSD and OCFA audio files and OCFA transcript)*

L. OCFA ECC contacts Angel 26. Reports that Cleveland (USFS) is aware of the smoke. Angel 26 reconfirms that the fire is inside the burn in a little green area. OCFA ECC advises that the OCFA helicopter has been notified. Angel 26 states that they will continue to monitor. *(OCSD and OCFA audio files and OCFA transcript)*

M. OCFA ECC contacts OCFA Air Ops. Advises that OCFA ECC has been in contact with Cleveland (USFS) and they were out there yesterday. OCFA ECC states that it will not be launching a response. OCFA Air Ops states that makes sense and that they have been listening to the whole thing*. (OCFA audio files and OCFA transcript)*

N. OCFA ECC calls Monte Vista (USFS) to see if they had gotten ahold of anybody working in the area. Monte Vista reports that they had just spoken with them and that were back in quarters. They said this is the trouble smoke that they have been dealing with for some time and that the area is apparently inaccessible. OCFA ECC asks if they want OCFA to launch a helicopter and just do a drop on it. Monte Vista states that its crew didn't say, they could ask, but he thinks they're just letting it do its own thing. *(OCFA audio files and OCFA transcript)*

O. OCFA ECC contacts Angel 26. States that USFS can't get down to the spot of the fire and is just going to let itself burn out. Angel 26 states that they still don't see any workers around the area, but if that's correct, they'll just let it be. *(OCSD and OCFA audio files and OCFA transcript)*

P. The October 8 OCFA Duty Chief was not informed of the Angel 26 fire report during the handling of the incident nor asked for direction on whether to launch an OCFA helicopter to the fire scene*. (Interview with OCFA Duty Chief)*

Q. On Friday, October 6, the National Weather Service (NWS) advised: "The most critical fire weather conditions will be for inland Orange County for Monday (October 9) morning into early evening." *(Canyon Fire 2 Weather Data)*

R. The Canyon 2 Fire Investigation Report prepared by AFD, OCFA and Cal Fire concluded that the Canyon 2 Fire was most probably caused by burning embers from a smoldering group of oak trees near the western flank of the Canyon 1 Fire burn area approximately 20 feet east of the dozer control line and was not part of the Canyon 2 Fire. *(Canyon Fire 2 Incident Investigation Report)*

S. Resource Response Guidelines, prepared by the ECC, identify the type and quantity of resources that the OCFA ECC will normally dispatch to reported emergency and non-emergency incidents and assistance requests. *(OCFA Standard Operating Procedures; Organizational Operations: OP.06.43; Resource Response Guidelines)*

RECOMMENDATIONS

A. When a call comes in, the call takers and/or dispatchers need to determine, to the best of their ability, the response location and agency having jurisdiction. If there is

any doubt or difficulty determining jurisdictional authority in a MTZ and/or across boundaries, dispatch the appropriate response per the inter-agency agreement. A smoke or fire report, with the concurrent NWS forecast of "critical fire weather conditions," should have dictated a mandatory response.

B. OCFA ECC must periodically review, and train dispatch staff relative to dispatch SOPs, protocols, directives and required notifications.
C. OCFA must ensure that the Duty Officer's responsibilities are understood and that the Duty Officer is utilized per protocols and procedures. This position is responsible for strategic level operational Command and Control decisions, while cognizant of and responsive to dynamic situational intelligence, to ensure appropriate situational status and resource management.
D. OCFA should review and update its Duty Chief Notification Matrix to ensure prompt notification and dispatch guidance for fires reported within the MTZ. ***(Appendix L: CO.01.05 – Major Incident Notification) (Appendix M: OCFA – Notifications)***
E. OCFA should review and update its Duty Chief Standard Operational Procedure (SOP).

ISSUE #2 **– News Story – OCSD States OCSD Ready to Drop Water**

According to this news story, OCSD had water dropping helicopters over the fire at the start of the Canyon 2 Fire and was ready to drop water within 15 minutes. According to the news story, OCSD offered to drop water, but OCFA refused.

SUMMARY

A. The OCSD did not have helicopters over the fire at the start of Canyon 2 Fire. Duke 6 was in the Irvine Lake area; the two other OCSD helicopters were at other locations within the County.
B. OCSD called OCFA three times after the outbreak of the Canyon 2 Fire and volunteered Duke helicopter services. (Non-specific to water drops)
C. OCFA initially declined assistance from OCSD as they had OCFA helicopters 1 and 2 along with CDF 305 on scene.
D. OCFA had already initiated helicopter requests through the established aircraft ordering process.
E. OCFA did request assistance from OCSD for HLCO support several hours into the Canyon 2 Fire initial attack period.

The facts of this news story need clarification. The OCSD Duke helicopters were flying in the area of Irvine Lake conducting training on the morning of the Canyon 2 Fire start. Soon after the fire started, they assisted Angel 26 in public evacuation warnings. The OCSD helicopters were "carded" and capable of dropping water using "Bambi" buckets; but were not "carded" to use the new belly tank they had recently installed. If they were requested to drop water, it would take about 15 minutes to setup their "Bambi" bucket tools and arrive on scene.

The OCSD helicopters were not ordered for water dropping services early on because CDF 305 and OCFA helicopters 1 and 2 were already on-scene dropping water. Duke 1

and 3 are Type 3 helicopters. They use a smaller bucket and were limited due to the wind speed. Duke 6 is a Type 2 helicopter similar to the OCFA helicopters but was not certified ("carded") for its new belly tank, only with its maximum 210-gallon bucket.

According to the Interagency Helicopter Operating Guidelines (IHOG) Manual, a Helicopter Coordinator (HLCO) is required when you have more than three helicopters working in the same vicinity to ensure air traffic safety. Therefore, the Incident Commander (IC) placed an order for two (later reduced to one) HLCO resources about 1p.m. for the augmented helicopter resource order.

The HLCO resources are usually Type 3 helicopters, which are typically CWN contractors. As the HLCO order was being processed, the ECC Supervisor knew that the HLCO platform was essential for the incoming augmented helicopters safety, but typical CWN orders may not be timely, so he directed ECC staff to contact the OCSD directly for availability. OCSD staff acknowledged the request, but took some time to provide an ETA, so the ECC staff called to verify availability. The ECC only requested a HLCO platform from OCSD and specified that Duke 6 is not being requested, only Duke 1. As part of the industry wide helicopter ordering process, a helicopter must also respond with a fuel tender and this was conveyed to OCSD. After several conversations, the OCSD stated that they could not supply a fuel tender for Duke 1, as they prefer to keep the fuel tender with Duke 6, thus the order was UTF.

FACTS/FINDINGS

A. OCSD did not have a helicopter over the fire at the start of the Canyon 2 Fire or spot the Canyon 2 Fire. *(Interview with OCSD Helicopter Staff and OCSD written response to IRP questions)*
B. On the morning of October 9, 2017, Duke 1, Duke 2 and Duke 6 were located at various locations in the County. All were available, staffed and ready to immediately deploy. Duke 6 was conducting training on its newly installed belly tank in the Irvine Lake area. *(Interview with OCSD Helicopter Staff and OCSD written response to IRP questions)*
C. Duke 1 is a 2016 Type 3 Airbus H125. Duke 6 is a 1974 Type 2 Bell UH-1H. On October 9, 2017, both were carded by Cal Fire for water-dropping by bucket. *(Cal Fire Helicopter Data Records dated 5/24/17)*
D. OCSD Helicopter Pilots are carded by Cal Fire for water-dropping by bucket. *(Cal Fire Helicopter Pilot Qualification Card Status dated 6/21/17*)
E. Duke 6 and OCSD Helicopter Pilots were not carded to drop water from a helitank on October 9, 2017. *(Interview with OCSD Helicopter Staff)*
F. OCSD has a contract with Cal Fire for CWN emergency fire helicopter services. *(Cal Fire Lease Agreement for the Intermittent Use of Aircraft dated 7/3/17)*
G. On the morning of October 9, 2017, OCSD called OCFA ECC three times (between approximately 9:50 a.m. and 10:16 a.m.) asking if OCFA needed "additional aircraft," "need us for that fire," and "let us know if you need Duke or anything." The inquiries were of a general nature and did not specifically offer Duke for water-dropping services. In each case, OCFA ECC declined the offer at that time and indicated "We're

OK on aircraft for now, we'll let you know," "Not now, if anything changes we'll give you a call back," and "OK." *(OCFA 1-Hour Post Incident Audio Files)*

H. OCSD helicopters are listed in the ROSS as a local fire-fighting resource. *(OCFA ECC ROSS Database)*
I. During the Canyon 1 Fire, OCFA supplied fuel to Duke 1, but this offer was not made on the Canyon 2 Fire. *(Interviews with OCFA and OCSD helicopter and ECC staff)*
J. OCSD did contact the ECC about the Canyon 2 Fire and offered Duke services non-specific to water dropping or HLCO. That offer was acknowledged by the ECC, but not used until the 1p.m. call for HLCO. *(Interviews with OCFA and OCSD helicopter and ECC staff)*
K. Use of Duke 6 occurred pre Canyon 2 Fire and now post Canyon 2 Fire*. (Interviews with OCFA and OCSD helicopter staff)*

RECOMMENDATIONS

A. The OCSD needs to determine its commitment to become a fully recognized and participating firefighting asset. If so, they need to adhere to and be compliant with the fire aviation industry standards and OCFA/OCSD MOU.
B. Cal Fire or USFS shall card all OCSD aircraft and pilots annually.
    a. OCSD shall notify OCFA of their helicopter status daily.
    b. OCFA and OCSD shall build a positive working relationship by regular communications and joint field training exercises.
    c. OCSD shall operate within the ICS structure and accept leadership/direction from the Fire Agency IC or ATGS when assisting with a firefighting response.
    d. OCSD shall maintain necessary support resources (i.e. fuel tender) for the mission.
C. The OCFA and the OCSD needs to resolve conflicts through the revision of the joint MOU language to be determined and build a homogenous public safety aviation program within Orange County.

ISSUE #3 **– News Story – OCSD Helicopters Non-Use**

Why were no OCSD helicopters used on the Canyon 2 Fire?

SUMMARY

A. OCSD helicopters were requested for HLCO, but not used for water dropping as described in the IRP response to Question #2.

The answer to the rest of this question is a little more involved. First, helicopters and pilots must be certified or "carded" by Cal Fire or the USFS annually. The carding process is designed to ensure capability, safety for aircraft resources and interoperability on incidents. Carding is also part of the mutually agreed Helicopter MOU between OCSD and OCFA. Both OCSD and OCFA have carded pilots and helicopters, some at different levels. At the time of the Canyon 2 Fire start, the OCSD Duke 6 helicopter and pilots were only carded for "Bambi" buckets, not the new belly tank. OCSD did receive carding

after the Canyon 2 Fire for its belly tank. OCFA is fully carded for its belly tank helicopters and has been for many years.

According to the Interagency Helicopter Operating Guidelines (IHOG), there are limitations to each type of helicopter and water dropping fixture (bucket and tank) (***Appendix H: Photo of Type 1 & 2 helicopters)*** depending upon flying conditions. During the start of the Canyon 2 Fire, the ATGS felt the wind speed exceeded the capabilities of a Type 3 helicopter with a bucket. A Type 2 helicopter with a bucket also faces limitations although that was not declared by the ATGS. A Type 2 helicopter with a belly tank is a more aerodynamic model and has fewer restrictions than a bucket operation. The problem here is that the ordering process only stipulated Type 2 helicopters and did not delineate a bucket or tank, thereby making any Type 2 helicopter eligible for assignment.

The bigger part of this situation is how helicopters are rostered and ordered. OCFA helicopters are listed in the ROSS as an "Agency" resource due to their proficiency. The OCSD helicopters were also listed in ROSS, but being from a non-fire entity, they are treated as a CWN resource. When the incident places an order for augmented aircraft, the orders are sent to the Southern Operations Center (South Ops) in Riverside. South OPs then look for "Agency" aircraft first before going to CWN aircraft. ROSS showed agency resources supplying helicopter orders along with several CWN helicopters. We were unable to find out why South OPs did not contact OCSD for helicopters due to their proximity. The only answer that we were able to verify was that the OCSD did not provide a daily availability report or DSR on the day that Canyon 2 started. We understand that the OCSD is submitting daily availability reports to the ECC on a regular basis since the Canyon 2 Fire.

On the morning of Monday, October 9, 2017, OCSD had three helicopters (Duke 1, Duke 2 and Duke 6) available, staffed and ready to immediately deploy if needed. These helicopters were located at various locations within the County. Duke 6 was conducting training on its newly installed belly tank in the Irvine Lake area. Duke 1 and Duke 6 were carded by Cal-Fire for water dropping by bucket. Duke 2 was not carded by Cal Fire for water dropping by bucket. On October 9, 2017, Duke 6 was not carded by Cal Fire to drop water from its newly installed belly tank. Six (6) OCSD helicopter pilots were staffing the three (3) available helicopters.

<u>Timeline</u>

A. On October 9, 2017 between approximately 8:32 a.m. and 9:27 a.m., OCFA ECC received calls reporting smoke/fire/flames on a hillside south of 91 and east of 241. At approximately 9:43 a.m., OCFA ECC launched a full vegetation fire response after observations and directions from E53 and B2. An AFD Deputy Chief assumed the role of Canyon 2 IC at the start of incident and began requesting air resources by type, not by agency.
B. OCFA ECC began filling Canyon 2 Incident Command air resources requests through ROSS. Between approximately 9:53 a.m. and 12:41 p.m., orders were placed through

ROSS for eleven (11) Type 1 and Type 2 helicopters. All requests were filled by resources from OCFA and other fire agencies.

C. On the morning of October 9, 2017, OCSD called OCFA ECC three times (between approximately 9:50 a.m. and 10:16 a.m.) to make general inquiries about the fire and ask if OCFA needed additional aircraft or needed Duke. OCSD did not specifically ask if OCFA needed Duke helicopters to drop water and did not specifically offer to drop water. OCFA ECC notified OCSD that additional aircraft were not needed at that time, but that OCFA would get back to OCSD if additional assistance were needed.
D. At approximately 1:15 p.m., OCFA ECC contacted OCSD to ask if Duke is available for HLCO on the Canyon Fire. Over the course of the next hour, there were numerous communications between OCFA ECC and OCSD.
E. OCSD offered to send Duke 1 and Duke 6 with an ETA of 15 minutes. OCFA ECC advised OCSD to not send Duke 6 per instruction from Air Operations, but to continue Duke 1 for HLCO. OCFA ECC offered to provide fuel for Duke 1 and repeated that Duke 6 was not needed for water dropping. OCFA ECC subsequently contacted OCSD and informed them that OCSD would need to provide a fuel tender for Duke 1. OCSD informed OCFA ECC that OCSD would not provide a fuel tender unless OCFA wanted Duke 6. OCFA ECC made several calls to OCSD to determine and clarify the status of Duke 1 and was informed that Duke 1 was on the ground at John Wayne Airport. OCFA ECC made further inquiries as to why Duke 1 was not launched and why OCFA ECC was not notified that Duke 1 had not been deployed. OCSD subsequently offered to launch Duke 1 without providing a fuel tender. OCFA ECC advised OCSD to let things stand at the moment and if anything changed, OCFA ECC would let OCSD know.
F. At approximately 1:19 p.m., OCFA ECC placed orders through ROSS for two (2) Type 3 helicopters. One order was filled by CA-CDF. The other order was cancelled UTF.

FACTS/FINDINGS

A. On the morning of October 9, 2017, Duke 1, Duke 2 and Duke 6 were located at various locations in the County. All were available, staffed and ready to immediately deploy. Duke 6 was conducting training on its newly installed belly tank in the Irvine Lake area. *(Interview with OCSD helicopter staff and OCSD written response to IRP questions)*
B. Duke 1 is a 2016 Type 3 Airbus H125. Duke 6 is a 1974 Type 2 Bell UH-1H. On October 9, both were carded by Cal Fire for water-dropping by bucket. *(Cal Fire Helicopter Data Records dated 5/24/17)*
C. OCSD Helicopter Pilots are carded by Cal Fire for water dropping by bucket. *(Cal Fire Helicopter Pilot Qualification Card Status dated 6/21/17)*
D. Duke 6 and OCSD helicopter pilots were not carded to drop water from a helitanker on October 9, 2017. *(Interview with OCSD helicopter staff)*
E. OCSD has a contract with Cal Fire for CWN emergency fire helicopter services. *(Cal Fire Lease Agreement for the Intermittent Use of Aircraft dated 7/3/17)*
F. On the morning of October 9, 2017, OCSD called OCFA ECC three times (between approximately 9:50 a.m. and 10:16 a.m.) asking if OCFA needed "additional aircraft," "need us for that fire" and "let us know if you need Duke or anything." The inquiries were of a general nature and did not specifically offer Duke for water-dropping

services. In each case, OCFA ECC declined the offer at that time and indicated "We're OK on aircraft for now, we'll let you know," "Not now, if anything changes we'll give you a call back," and "OK*." (OCFA 1-Hour Post Incident Audio Files)*

G. OCSD helicopters are listed in the ROSS as a local fire-fighting resource. *(OCFA ECC ROSS Database)*
H. On October 9, 2017, between approximately 8:32 a.m. and 9:27 a.m., OCFA ECC received calls reporting smoke/fire/flames on a hillside south of 91 and east of 241. *(OCFA ECC, Metro Net and CHP audio files)*
I. On October 9, 2017, at approximately 9:43 a.m., OCFA ECC launched a full vegetation fire response after observations and directions from E53 and B2. *(Timeline from OCFA Press Release on 10/25/17, Canyon 2 Incident Detail Report, Metro Net files and AFD response to IRP questions)*
J. AFD Deputy Chief was Canyon 2 IC at start of incident. Began requesting air resources by type; not by agency. *(Interview with AFD Deputy Chief).*
K. OCFA ECC began filling Canyon 2 IC air resources requests through ROSS. *(ROSS Resource Order Log and Interview with OCFA ECC Supervisor)*
L. The initial ATGS arrived on scene at approximately 10:25 a.m. and observed three helicopters working on the fire: ORCO 1, ORCO 2 and CDF 305. He contacted the IC to place additional orders for Air Tankers, Type 1 and Type 2 helicopters. He did not order any Type 3 helicopters because they did not meet his needs at the time. Angel 1 and Duke 1 were the only Type 3 helicopters that arrived on scene. They checked in with him for clearance and their mission was to assist in the evacuation of neighborhoods threatened by the fire. He was relieved by another Initial Attack ATGS and approximately 2:30 p.m. *(October 30 Memo from initial ATGS)*
M. Between approximately 9:53 a.m. and 12:41 p.m., orders were placed through ROSS for eleven (11) Type 1 and Type 2 helicopters. All requests were filled by resources from OCFA and other fire agencies. *(ROSS Resource Order Log)*
N. The relief ATGS never requested additional aircraft. As an ATGS, he typically requests aircraft that will give him "the most bang for the buck." Those are typically a Type 2 helicopter with crew, water dropping capability, initial attack helitack crew, the ability to perform HLCO missions, internal/external cargo, hoist rescue, staff a helibase/helispot, etc. These requests are usually filled by South OPs using the WINCAN program for the closest appropriate resource. CWN helicopters are typically used in the 2nd operational period allowing agency aircraft to be released. Type 3 helicopters are typically requested for HLCO, Recon or mapping purposes. Type 3 helicopters with a bucket or tank typically do not do well with water placement on wind driven fires. *(October 31 Memo from relief ATGS)*
O. At approximately 1:19 p.m., orders were placed through ROSS for two (2) Type 3 helicopters. One order was filled by CA-CDF. The other order was cancelled UTF. *(ROSS Resource Order Log)*
P. At approximately 1:15 p.m., OCFA ECC contacted OCSD to ask if Duke is available for HLCO on the Canyon 2 Fire. *(OCFA Audio Files and Transcript)*
Q. At approximately 1:24 p.m., OCSD contacted OCFA ECC and stated that they were sending Duke 1 and Duke 6 with an ETA of 15 minutes. *(OCFA Audio Files and Transcript)*

R. At approximately 1:26 p.m., OCFA ECC contacted OCSD and told them to cancel Duke 6 per Air Ops and to continue Duke 1 for HLCO. OCSD acknowledged. *(OCFA Audio Files and Transcript)*
S. At approximately 1:30 p.m., OCFA ECC contacted OCSD to state that OCFA will provide fuel for Duke for HLCO and repeated that Duke 6 was not needed for water dropping and to cancel Duke 6 per Air Ops. OCSD acknowledged. *(OCFA Audio Files and Transcript)*
T. At approximately 1:43 p.m., OCFA ECC contacted OCSD to state that OCSD would need to provide a fuel tender for Duke 1. OCSD asked if OCFA ECC wanted Duke 6 also. OCFA ECC repeated no, just Duke 1*. (OCFA Audio Files and Transcript)*
U. At approximately 1:45 p.m., OCSD contacted OCFA ECC advising that OCSD will not bring a helitender unless OCFA ECC wants Duke 6. OCFA ECC asks OCSD to standby. *(OCFA Audio Files and Transcript)*
V. At approximately 1:55 p.m., OCFA ECC contacts OCSD requesting to speak to their Lead regarding the Duke helicopters. Speaks to OCSD dispatcher and asks for confirmation that Duke 1 is going and repeats that Air Ops is adamant that Duke 6 not go. States that they don't want excess helicopters in the air and Duke 1 is for HLCO only. States that for water dropping, they don't need extra helicopters. States that she needs to confirm that OCSD has a helitender in route for Duke 1. OCSD dispatcher doesn't know and offers to call back. *(OCFA Audio Files and Transcript)*
W. At approximately 2:01 p.m., OCSD dispatcher calls OCFA ECC to report that all OCSD helicopters are currently on the ground at John Wayne Airport including Duke 1. OCSD gives OCFA ECC phone number for OCFA Sergeant. *(OCFA Audio Files and Transcript)*
X. Between 2:03 p.m. and 2:17 p.m., OCFA ECC places several calls to OCSD to determine status of Duke 1. *(OCFA Audio Files and Transcript)*
Y. At approximately 2:17 p.m., OCSD Lieutenant contacts OCFA ECC to report that Duke 1 does not have a fuel truck, but OCFA can have Duke 1 but OCSD does not have a fuel truck that could respond right now. OCFA ECC repeats that the request is for only Duke 1 to work as HLCO. OCFA ECC states that they thought OCFA would be providing fuel but was then asked to request fuel from OCSD. OCFA ECC repeats that OCFA doesn't need Duke 6 because it's not for water dropping; it's only for HLCO. OCFA ECC expresses concern that they were not notified about Duke 1 being cancelled because they thought Duke 1 was up in the air and in route. OCSD again offers Duke 1 without a fuel tender. OCFA ECC states let's just leave it as is right now and if we change our minds or can work it out, we'll let you know. OCSD acknowledges. *(OCFA Audio Files and Transcript)*

RECOMMENDATIONS

A. The OCSD needs to determine its commitment to become a fully recognized and participating firefighting asset. If so, they need to adhere to and be compliant with the fire aviation industry standards and OCFA/OCSD MOU.
B. Cal Fire or USFS shall card all OCSD aircraft and pilots annually.
    a. OCSD shall notify OCFA of their helicopter status daily.
    b. OCFA and OCSD shall build a positive working relationship by regular communications and joint field training exercises.

c. OCSD shall operate within the ICS structure and accept leadership/direction from the fire agency IC or ATGS when assisting with a firefighting response.
d. OCSD shall maintain necessary support resources (i.e. fuel tender) for the mission.

C. The OCFA and the OCSD needs to resolve conflicts through the revision of the joint MOU language to be determined and build a homogenous public safety aviation program within Orange County.
D. Refer to more extensive details under the "Challenges to Moving Forward" and "A Path Forward" sections.

ISSUE #4 **– Inquiry from Metro Net Dispatch**

Metro Net inquired as to OCFA's timeline, indicated that Metro Net transferred a call to OCFA at 9:28 a.m. on October 9, 2017, with a report of smoke and flames inside the burn area and OCFA dispatched a vegetation fire response at 9:43 a.m.

SUMMARY

A. Metro Net did forward the reported location and incident information to OCFA in a timely manner.
B. Rather than immediately dispatching a response consistent with department protocols, ECC attempted to investigate and validate caller information in various methods thereby preventing a timely dispatch.
C. Post Canyon 2 Fire, Metro Net and OCFA have a new directive to dispatch personnel to facilitate quicker dispatch of emergency resources.

We were able to confirm that Metro Net did convey information from the CHP to the ECC at 9:28 a.m. on October 9th, 2017. Metro Net stated that a passerby on eastbound 91 reported flames just past the 241 where the fire was last week. Metro Net transferred the call even though the subject area appeared to be in Cal Fire, USFS or Anaheim FD's jurisdiction. The ECC dispatcher took time to verify the caller's location of smoke/fire. According to ECC practices, the dispatcher was required to notify his supervisor before dispatching the call. Due to the numerous reports of smoke on the 9th and previous days from the Canyon 1 Fire, the supervisor told the dispatcher to call Cal Fire Riverside and USFS Monte Vista to see if they had units in the area. Both agencies did not have resources in the area and then the dispatcher was told to call FS 53 and ask them to look outside the window to verify. FS 53 did so and reported no visible smoke/fire, only dust. The dispatcher notified the supervisor who then told him to send B2, E32 and E53 for a smoke check. Once resources got into the area, they drove around to verify any smoke/fire outside of the Canyon 1 Fire "black" area. They did find active fire outside of the previous fire perimeter and at 9:43 a.m. requested the ECC to start a full vegetation response.

FACTS/FINDINGS

A. On October 9, 2017 at approximately 9:27 a.m., OCFA ECC (FA08) receives a report of a fire on the 91 Freeway about 2 ½ miles west of Green River Road. The caller

reports seeing white smoke and brown dust but can't see flames. The caller reports that he sees the smoke up in the hills. *(OCFA Audio Files and Metro Net transcript)*

B. At approximately 9:28 a.m., Metro Net calls OCFA ECC (FA12) to relay information received from the CHP. Metro Net states that a passerby on eastbound 91 reports flames just past the 241 where the fire was last week. OCFA ECC asks whether the location was in the black or the green. Metro Net states that the caller said it was right where the fire was, so we're assuming it was the black. *(OCFA Audio Files and Metro Net transcript)*
C. At approximately 9:29 a.m., OCFA ECC (FA08) calls Monte Vista (USFS) to report the calls of white smoke seen where the big fire was a week or two ago. Monte Vista reports that there has been a lot of ash blowing. If the caller didn't see flames, Monte Vista says that it may be a pocket area that is burning out. OCFA ECC states that it's just been one call, but they're told to report to Monte Vista to see if they have a patrol or something in the area to check it out. *(OCFA Audio Files and Metro Net transcript)*
D. At approximately 9:30 a.m., OCFA ECC (FA08) calls another fire agency and asks if they have anyone still over on the fire. Respondent asks which, the Canyon Fire? OCFA ECC responds yes, the Canyon Fire. Respondent says they don't have anyone in that area. *(OCFA Audio Files and Metro Net transcript)*
E. At approximately 9:31 a.m., OCFA ECC (FA08) calls Station 53 and asks if they're staffed yet. Respondent says they're waiting for their firefighter with an ETA of 1-hour coming from the Grapevine. OCFA asks respondent to step outside and see if he can see anything in the hillside across the freeway. Respondent reports a lot of ash blowing up from the canyon. *(OCFA Audio Files and Metro Net transcript)*
F. At approximately 9:32 a.m., OCFA ECC calls OCFA Air Ops to ask how soon they can get a helicopter in the air. Reports calls of fire in the burn area of the Canyon Fire. Engine 53 was sent up on a strike team and isn't covered yet. Was just going to have Air Ops fly it to see if they see anything. Air Ops responds that they will leave within 10 minutes *(OCFA Audio Files)*
G. At approximately 9:33 a.m., OCFA ECC receives a call. The caller reports watching a fire start from his home near Gypsum Canyon. In response to OCFA ECC questions, the caller confirms that he only sees smoke, not flames. *(OCFA Audio Files and Metro Net transcript)*
H. At approximately 9:34 a.m., OCFA ECC dispatches E53 and E32 for smoke check in the area. *(OCFA Canyon 2 Incident Detail Report and Timeline from October 13 OCFA Memo and October 25 Press Release)*
I. At approximately 9:35 a.m., Metro Net calls back to OCFA ECC inquiring if units would be dispatched to the fire. OCFA ECC responds that they are going to send a helicopter, but think it is just ash kicking up. *(OCFA Audio Files and Metro Net transcript)*
J. At approximately 9:35 a.m., OCFA ECC receives a call from an off-duty fireman reporting a fire near the 91 and Coal Canyon. *(OCFA Audio Files, Metro Net transcript and Timeline from October 13 OCFA Memo and October 25 Press Release)*
K. At approximately 9:35 a.m., OCFA ECC contacts B2 and asks him to drive out to the area and check things out. *(OCFA Audio Files and Metro Net transcript)*
L. At approximately 9:36 a.m., radio transmissions ensue between E32 and E53. E53 reports that it is waiting for its fireman to upstaff but can definitely see a spot burning

inside the black. *(Metro Net transcript and Timeline from October 13 OCFA Memo and October 25 Press Release)*

M. At approximately 9:41 a.m., E53 reports that the fire has moved a little bit and requests a wildland assignment. B2 concurs with the requested dispatch. *(Metro Net transcript and Timeline from October 13 OCFA Memo and October 25 Press Release)*
N. At approximately 9:43 a.m., OCFA ECC launches a full vegetation fire response. *(Canyon 2 Fire Incident Detail Report, Metro Net transcript and OCFA Timeline in October 13 OCFA Memo and October 25 Press Release)*
O. OCFA ECC dispatcher who took the 9:28 a.m. call from Metro Net sought direction from his supervisor on how to handle the call. The OCFA ECC supervisor directed him to call Monte Vista, call another fire agency that he couldn't recall, call Station 53 and launch a smoke check. *(Interview with OCFA ECC Dispatcher)*
P. Dispatcher Training Manual requires dispatcher to advise/update supervisor before dispatching vegetation fires in the MTZ. *(Page 82 from Academy 13 – 2017)*
Q. OCFA ECC supervisor was made aware of the 9:28 a.m. call from Metro Net. The dispatcher receiving the call sought direction from the supervisor. The supervisor directed him to call Riverside, Cleveland and Station 53. *(Interview with OCFA ECC Supervisor)*
R. OCFA Resource Response Guidelines recommend the dispatching of an engine or truck for Smoke Check calls. The Guidelines recommend the dispatching of a multi-resource response (i.e. Chief Officers, dozer, engines, helicopters, hand crews, etc.) for Vegetation Fire calls in Watershed Medium and Watershed High conditions. Chief Officers and the ECC can modify the amount and type of dispatched resources when special circumstances or conditions warrant. *(Standard Operating Procedures OP.06.43 prepared by ECC on 9/7/16; Dispatch Matrices included in SOP Appendix and Training Academy Curriculum; CAD System dispatch recommendations)*
S. Post Canyon 2 Fire, Metro Net and OCFA have a new directive to dispatch personnel to facilitate quicker dispatch of emergency resources. *(Interviews by Anaheim Dispatch Manager and ECC Manager)*

RECOMMENDATIONS

A. Metro Net, OCFA and other dispatch agencies need to automatically dispatch a respective watershed response initially if the reported location is within the MTZ.
B. Monitor the Post Canyon 2 Fire dispatch procedures by Metro Net and OCFA to improve the dispatch process.
C. Review and update SOP OP.06.43 to clarify circumstances or conditions under which Chief Officers and ECC can modify the resource dispatch guidelines/recommendations.

ISSUE #5 **– Internal analysis - Handling of initial phone report**

OCFA's Dispatch Center (Emergency Command Center, or ECC) received a transferred call from CHP at 8:32 a.m. on October 9, 2017, wherein the caller reported "fire" at the 91 Freeway/241 Toll Road. Understanding that OCFA's dispatch for a vegetation fire response occurred at 9:43 a.m. following a subsequent call, the details of this earlier 8:32 a.m. call require review.

SUMMARY

A. OCFA ECC received a call from CHP transferring a motorist on the 91 Freeway who was reporting a fire.
B. ECC attempted to validate caller information rather than immediately dispatching a response consistent with department protocols.
C. Post Canyon 2 Fire, OCFA has a new directive to dispatch personnel to facilitate quicker dispatch of emergency resources.

On October 9, 2017, at approximately 8:32 a.m., OCFA ECC received a call from CHP transferring a motorist on the 91 Freeway who was reporting a fire. OCFA ECC spoke directly with the motorist. The motorist reported a fire near the top of the mountain between Green River and the 241 on the south side. The caller confirmed that he saw a real fire and flames. The caller reported that he was driving westbound on the 91 and that the fire was on the mountains on the north side of the freeway. OCFA ECC asked the caller to confirm that he was seeing the fire on his right side. The caller clarified that he was travelling west and that the fire was on his left side. OCFA ECC stated they would send somebody to check it out.

The OCFA ECC dispatcher called Station 53 and requested that someone go check outside to see if they could see a fire by the 91/241 area. Station 53 stated that they would take a look and call back OCFA ECC. Station 53 called back to OCFA ECC and spoke with a different dispatcher. Station 53 reported seeing a lot of ash coming off the Canyon incident. They further stated that it was ash blowing making it look like smoke.

The original OCFA ECC dispatcher called back CHP as a professional courtesy to inform them that the original report was unfounded and that it was only ashes. No units were dispatched for a smoke check. The 8:32 a.m. call was logged as **"Incident Type: Advised – No Response."** There were no other reported smoke/fire calls until 9:27 a.m.

Subsequent to the Canyon 1 and Canyon 2 Fires, the OCFA ECC manager issued a memo ECC titled: Communications – Vegetation Responses. The memo states that effectively immediately, "Fires reported within the burn scar areas (or "black") of a previous fire will result in the immediate dispatch of the closest unit or units (e.g. VEG, VEGM, VEGH, etc.). The memo goes on to state, "Reports of "fire" or "flames" by the public will always be treated as a fire until proven otherwise. It is not appropriate to send as a "smoke check" response."

FACTS/FINDINGS

A. On October 9, 2017 at approximately 8:32 a.m., OCFA ECC (FA01) receives a call from CHP transferring a party on the line advising that he sees a fire. CHP transfers the caller to OCFA ECC. The caller reports a fire near the top of the mountain between Green River and the 241 on the south side. The caller confirms that he sees a real fire and flames. The caller reports that he is travelling westbound on the 91 and the fire is on the mountains on the north side of the freeway. OCFA ECC asks caller to confirm that he sees the fire on the right side of him. Caller states that he is travelling

west and the fire is on his left side. OCFA ECC says they will send somebody over to check it out. *(OCFA Audio Files, Metro Net transcript and OCFA Timeline)*

B. At approximately 8:36 a.m., OCFA ECC calls Station 53 and requests that someone go check outside to see if they can see a fire by the 91/241 area. Station 53 states that they will take a look and call back OCFA ECC. *(OCFA Audio Files, Metro Net transcript and OCFA Timeline)*
C. At approximately 8:39 a.m., Station 53 calls back OCFA ECC (FA05). Station 53 reports that they are getting a lot of ash coming off the Canyon incident. Station 53 reports that it is ash blowing through here and making it look like smoke. *(OCFA Audio Files, Metro Net transcript and OCFA Timeline)*
D. At approximately 8:39 a.m., OCFA ECC calls back CHP regarding the report of fire. OCFA ECC informs CHP that the report is unfounded and that it's just ashes. CHP acknowledges. *(OCFA Audio Files, Metro Net transcript and OCFA Timeline)*
E. The OCFA ECC dispatcher who handled the call reported that the caller's reports were contradictory and that the incident area is confusing and geographically challenging. He stated that he checked with his supervisor on how to handle the call. His supervisor directed him to call Station 53 and have them look out their window. Station 53 called back another dispatcher to report their observations. The OCFA ECC supervisor was OK with the action and did not order a dispatch. The dispatcher called back the CHP as a professional courtesy to report that it was only ashes. *(Interview with OCFA ECC Dispatcher)*
F. The OCFA ECC supervisor states that he was not made aware of any fire/smoke calls until the 9:28 a.m. call from Metro Net*. (Interview with OCFA ECC supervisor).*
G. The 8:32 a.m. call was logged as Incident Type: Advised – No Response. *(Incident Detail Report)*
H. During the IRP's review of data between 8:32 a.m. and 9:43 a.m., there were several reports of smoke and possible fire in the Gypsum Canyon area. These witness reports reported no smoke/fire visible (off-duty firefighter) to another where there appeared to be a separate and distinct fire on a hill (9:14 a.m. witness statement and video/pictures in Fire Investigation report). There was no official Canyon 2 Fire dispatch until 9:43 a.m.
I. OCFA Resource Response Guidelines recommend the dispatching of an engine or truck for Smoke Check calls. The Guidelines recommend the dispatching of a multi-resource response (i.e. Chief Officers, dozer, engines, helicopters, hand crews, etc.) for Vegetation Fire calls in Watershed Medium and Watershed High conditions. Chief Officers and the ECC can modify the amount and type of dispatched resources when special circumstances or conditions warrant. *(SOP OP.06.43 prepared by ECC on 9/7/16; Dispatch Matrices included in SOP Appendix and Training Academy Curriculum; CAD System dispatch recommendations)*
J. On October 25, 2017, OCFA ECC manager issued a memo titled: ECC Communications – Vegetation Responses. The memo states that effectively immediately, "Fires reported within the burn scar areas (or "black") of a previous fire will result in the immediate dispatch of the closest unit or units (e.g. VEG, VEGM, VEGH, etc.). The memo goes on to state that "Reports of "fire" or "flames" by the public will always be treated as a fire until proven otherwise. It is not appropriate to send as a "smoke check" response." ***(Appendix A: October 25 OCFA ECC manager memo)***

K. The IRP has reviewed the August 2017 ECC Assessment Findings and the October 2017 Review of said document and endorsed their components. ***(Appendix N: ECC Assessment Findings)***

RECOMMENDATIONS

A. OCFA should automatically dispatch a watershed response whenever a fire is reported at a location within the MTZ.
B. OCFA should review and improve its dispatch training, protocols and process for wildland/brush fires reported within the MTZ.
C. When a call comes in, the dispatcher needs to identify, to the best of his/her ability, the location and agency having jurisdiction. If there is any doubt, identify the MTZ and dispatch appropriate equipment per the MTZ agreement. Any smoke or fire report, based on the burn index and weather conditions, should dictate an automatic response.
D. OCFA should review and clarify the role of the duty officer (24/7) versus the OCFA ECC manager (40-hour week).
E. OCFA should review and update its Duty Officer Notification Matrix to ensure notification and seek dispatch guidance for fires reported within the MTZ.
F. OCFA should review and update SOP OP.06.43 to clarify circumstances or conditions under which Chief Officers and ECC can modify the resource dispatch guidelines/recommendations. ***(Appendix I: SOP – OP.06.43 Resource Response Guidelines)***

ISSUE #6 **- Internal Analysis - Mutual aid response**

Review the impact of "immediate need" mutual aid strike team response to Sonoma County, and specifically, what was the impact on OCFA's ability to respond to the reports of "fire" beginning at 8:32 a.m. on October 9, 2017?

SUMMARY

A. The strike team response to Sonoma County, which included Station 53, did affect the availability of the closest OCFA resource to respond to the reports of fire at 8:32 a.m.
B. The dispatch of a Type 3 Strike Team to Sonoma County reduced the number of OCFA Type 3 engines by five during the initial high fire danger period.
C. It also compromised staffing of Type 1 vehicles at Station 53 and the other four stations until off-duty backfill was achieved.
D. The current 48/96-work shift schedule creates additional staffing challenges because an oncoming shift is not guaranteed each day as per historical 24/7 work shift.
E. The Duty Chief made a reasonable decision to fill "immediate need" resource request (2 strike teams) with OCFA pre-designated Type 3 resources (1 strike team).
F. OCFA could have implemented other short-term coverage options to mitigate the anticipated delay in fully staffing Station 53 through the off duty backfill/coverage.

G. Post Canyon 2 Fire OCFA has updated its Move-Up and Cover Procedures to provide for the timely relocation and redistribution of OCFA resources during periods of fire station vacancies. ***(Appendix C: OP.06.27 – Move-Up and Cover Procedures)***

On Saturday, October 7, 2017, the NWS issued a Red Flag Warning for early Monday morning (October 9) through Tuesday morning (October 10) for the San Bernardino Mountains, Inland Empire and Santa Ana Mountains and Foothills. The NWS also issued a Fire Weather Watch for the same time period for San Diego County Mountains and Valleys and Inland Orange County.

OCFA issued its October 8, 2017 Daily Status Report (DSR) at 7:45 a.m. that day. The DSR indicated a Watershed High condition. Type 1 Strike Team and Type 3 Strike Team resources were pre-designated for any requested out-of-county response. The DSR listed a Type 3 Strike Team with the following pre-designated OCFA resources: E307, E315, E345, E347 and E353. ***(Appendix O: SOP – OP.06.50 – Response to Mutual threat and Out-of-County Incidents)***

On the morning of October 9, 2017 (between approximately 3:30 a.m. and 4:30 a.m.), the Duty Chief was advised of a request to send two (2) Type 3 "Immediate Need" Strike Teams to Sonoma County. He initially denied the request, but after receiving additional information from OCFA ECC regarding the request's urgency, he agreed to send one (1) Type 3 Strike Team. The Type 3 Strike Team pre-designated resources (E307, E315, E345, E347 and E353) were dispatched to Northern California at approximately 5:41 a.m. under a 9300 Cal Fire order number. The Division Chief initiated Cover/Backfill actions for the affected stations in accordance with Duty Officer Coverage and Responsibilities SOP.

Station 7 (San Juan Capistrano) was backfilled at 9:08 a.m. Station 15 (Silverado) was unable to be filled and covered by other OCFA resources. Station 45 (Rancho Santa Margarita) was backfilled at 9:41 a.m. Station 47 (Irvine) was backfilled at 10:51 a.m. Station 53 (Yorba Linda) was backfilled at 9:40 a.m.

At 8:32 a.m. and 9:28 a.m., ECC received call transfers from CHP and Metro Net respectively, regarding a report of smoke/fire near the 91/241 Freeways. At 8:32 a.m., ECC called Station 53 to have them look out their window to verify a smoke/fire report. Station 53 with partial staff complied and reported back that it was only blowing ash from the Canyon 1 Fire. Again, after the 9:28 a.m. 2nd call transfer, the ECC called Station 53 to have them look out their window to verify a smoke/fire report. Station 53 again was partially staffed while waiting for off-duty recall and reported only blowing ash. The ECC choose to dispatch a smoke check using B2, E32 and E53. E32 dropped off one firefighter so E53 was fully staffed and they proceeded to the smoke check. Once in the area, they were able to verify a new fire, which became the Canyon 2 Fire and a full watershed response was started.

Station 53 was "out of service" due to staffing, for a limited time while their Type 3 engine was sent north on the strike team to Sonoma as part of the designated or "Planned Need" resource. The Duty Chief recognized that while the strike team request was for

"Immediate Need," (six hours or less) the drive alone dictated using the designated "Planned Need" resources. While Station 53 was less than fully staffed, minimum staffing personnel were available to assist the ECC in verifying smoke checks and E32 actions to share staff, enabled E53 to become fully operational before off-duty staff were available.

The 48/96-work shift schedule was to transition on the 8th and 10th morning. Therefore, with the Canyon 2 Fire starting in the early morning of the 9th, there was no "holdover" staffing option available. This created an extended backfill situation. It should also be noted that the prior Duty Chief did request an augmented resource order to bolster staffing but was denied by Cal Fire. OCFA Duty Chief did then staff limited positions at OCFA's expense.

The question of whether or how the reduced staffing at Station 53 contributed to the rapid spread of the Canyon 2 Fire cannot be quantified. Without a proper response and on scene evaluation of the situation, one can only speculate about the outcome. Other OCFA (and other fire agency resources) could have been dispatched in a timely manner to respond to the 8:32 a.m. and subsequent smoke/fire calls on the morning of October 9. The Canyon 2 Fire's rapid fire spread was caused by fuel and weather conditions being in alignment.

FACTS/FINDINGS

A. On October 8, 2017, the OCFA DSR was issued at 7:45 a.m. for the next operating shift. The DSR indicated a Watershed High condition. The DSR listed a Type 3 Strike Team with the following pre-designated OCFA resources: E307, E315, E345, E347 and E353. *(October 8 DSR)*
B. On October 7, 2017, the NWS issued a Red Flag Warning for early Monday morning through Tuesday morning for the San Bernardino County Mountains, Inland Empire and Santa Ana Mountains and Foothills. NWS issued a Fire Weather Watch for early Monday morning through Tuesday morning for San Diego County Mountains and Valleys and Inland Orange County. *(October 7 NWS Alert Notice)*
C. The October 8, 2017, OCFA Duty Chief was aware of the Red Flag Warning. In anticipation of the weather conditions, he contacted Cal Fire seeking authorization for augmented staffing. The request was denied. He sought and gained internal permission to upstaff an additional OCFA helicopter, an additional dozer, an additional hand crew and two additional ECC dispatch positions. *(Interview with DC and OCFA written response to IRP questions)*
D. On the morning of October 9, 2017, (between approximately 3:30 a.m. and 4:30 a.m.), the DC was advised of a request to send two (2) Type 3 Strike Teams to Sonoma County. He initially denied the request, but after receiving additional information from OCFA ECC, he agreed to send one (1) Type 3 Strike Team. *(Interview with DC)*
E. The Type 3 Strike Team pre-designated resources (E307, E315, E345, E347 and E353) were dispatched to Northern California at approximately 5:41 a.m. *(OCFA Written Response to IRP questions)*
F. The Duty Chief initiated cover/backfill actions for the affected stations. Station 7 (San Juan Capistrano) was backfilled at 9:08 a.m. Station 15 (Silverado) was unable to fill and covered by other OCFA resources. Station 45 (Rancho Santa Margarita) was

backfilled at 9:41 a.m. Station 47 (Irvine) was backfilled at 10:51 a.m. Station 53 (Yorba Linda) was backfilled at 9:40 a.m. *(OCFA Written Response to IRP questions)*

G. SOP HR.03.01 (Issue/Revision Date: 09/01/2008) sets forth Duty Officer Coverage and Responsibilities. The Duty Officer acts as the Fire Authority's contact and approval source for ECC regarding requests for out-of-county response, assistance to other agencies, and mutual aid requests. The Duty Officer is also responsible for reviewing and guiding as necessary the move-up and cover of resources and directing the call-back of necessary personnel associated with major incidents. ***(Appendix J: SOP- Duty Officer Coverage and Responsibilities HR.03.01)***
H. On October 9, 2017, at approximately 8:32 a.m., OCFA ECC (FA01) receives a call from CHP transferring a party on the line advising that he sees a fire. CHP transfers the caller to OCFA ECC. The caller reports a fire near the top of the mountain between Green River and the 241 Toll Road on the south side. The caller confirms that he sees a real fire and flames. The caller reports that he is travelling westbound on the 91 Freeway and the fire is on the mountains on the north side of the freeway. OCFA ECC asks caller to confirm that he sees the fire on the right side of him. Caller states that he is travelling west and the fire is on his left side. OCFA ECC says they will send someone over to check it out. *(OCFA Audio Files, Metro Net transcript and OCFA Timeline)*
I. On October 9, 2017, at approximately 9:27 a.m., OCFA ECC (FA08) receives a report of a fire on the 91 Freeway about 2 ½ miles west of Green River Road. The caller reports seeing white smoke and brown dust but can't see flames. The caller reports that he sees the smoke up in the hills. *(OCFA Audio Files and Metro Net transcript)*
J. At approximately 9:28 a.m., Metro Net calls OCFA ECC (FA12) to relay information received from the CHP. Metro Net states that a passerby on eastbound 91 Freeway reports flames just past the 241 Toll Road where the fire was last week. OCFA ECC asks whether the location was in the black or the green. Metro Net states that the caller said it was right where the fire was, so we're assuming it was the black. *(OCFA Audio Files and Metro Net transcript)*
K. At approximately 9:43 a.m., OCFA ECC launches a full vegetation fire response. *(Canyon 2 Fire Incident Detail Report, Metro Net transcript and OCFA Timeline in October 13 OCFA Memo and October 25 Press Release)*
L. Post Canyon 2 Fire OCFA has updated its Move-Up and Cover Procedures to provide for the timely relocation and redistribution of OCFA resources during periods of fire station vacancies. ***(Appendix C: OP.06.27 – Move-Up and Cover Procedures)***

RECOMMENDATIONS

A. OCFA should review and monitor its new "back fill" policies and procedures to ensure "best practices" when filling immediate and planned need response coverage inside and outside of the County. ***(Appendix C: OP.06.27 – Move-Up and Cover Procedures)***
B. The Duty Chief must exercise management discretion, when evaluating and confirming the selection of the pre-designated strike team based on current and forecasted weather and staffing conditions prior to dispatch.
C. OCFA should review duty chief's responsibilities.

D. OCFA should review the 48/96-work shift schedule and relationship to employee residence locations to determine if off-duty recall can be enhanced.

Summary of Recommendations

Under each of the six issues, there are specific recommendations. These recommendations can be simply classified into three core areas: **Dispatching**, **Command & Control** and **Air Operations.**

Dispatching

The IRP empathizes with the dispatch staff given their daily workload challenges. It is a stressful job with long hours and overtime due to staffing shortages. As the Command and Control center of OCFA, dispatch proficiency is paramount to receive/process calls and respond emergency resources. Dispatchers often encounter callers with poor reporting location information and speech/language barriers. Regardless, they must make prompt accurate decisions for timely life preserving actions.

The general recommendations for dispatch improvement are training, policy review and supervision enhancements. The IRP found that with constant dispatch staff turnover, training inconsistencies are inevitable. For example, there are discrepancies between many "memory items" and the "black and white" CAD processes. Some of these conflicts stem from policy differences and polices that need to be updated. While dispatch staff positions have built in redundancy at the supervisor level there are many "stove-pipe" policies and practices due to limited number of supervisors. There needs to be a process to ensure the specialized knowledge base is consistent among supervisor staff. The IRP acknowledges that the ECC has a new supervising manager and the new policies and recommendations are being implemented.

Command & Control

The key to Command and Control rests in high quality Leadership, Policy and Staffing. This report suggests that a comprehensive review of SOPs be completed and revised/updated as needed so policy direction reflects reality. A review of the Duty Chief notifications and roles/responsibilities should be completed and validated through simulation exercises. While recognizing that command and control direction and/or intervention by the Duty Chief is frequently needed, it remains essential during adverse situations. This review also needs to extend to the ECC oversight function.

OCFA is commended for proactively reviewing and amending its fire station coverage plan post Canyon 2 Fire. It is paramount that the system status management plan is focused on ensuring fire station coverage. Furthermore, the current 48/96 firefighter schedule presents fire station coverage challenges as occurred during the Canyon 2 Fire. This was because the fire occurred mid-shift with no on-coming replacement staffing pool as the Strike Team was sent north to Sonoma County.

OCFA needs to review all agreements and operating plans to ensure they are consistent with current practices and policies. In particular, OCFA, ANA and Cal Fire need to review the ANA SRA contract to determine if operational tenets meet the best interests of all three parties.

Air Operations

There are two types of recommendations contained in this report for air operations. The recommendations under each of the six issues are specific actions that can be implemented as soon as practical. There are additional, more global recommendations listed in the section "A Path Forward." This report divided these Air Operations recommendations into two areas, to facilitate implementation in progressive steps consistent with concurrent joint training to improve relations, collaboration and operations.

The key to resolving the current acrimony between OCFA and OCSD is to restore trust, collegiality and pride in their operational relationships. The longer this situation remains unresolved, it increases the potential to adversely impact shared public safety objectives. With a positive collaborative environment restored, other public safety enhancements could be explored, such as:

- OCFA could partner with OCSD and make OCSD helicopters an "Agency" resource. This would result in better utilization of joint resources and generate financial reimbursement.
- OCFA could request OCSD resources when their aircraft are unavailable and cross staff for response coverage and vice versa.

To maintain this positive working environment, both sides must:

- Create and mutually agree to a new collaborative MOU.
- Abide by the MOU's tenets.
- Respect each other's roles and responsibilities.
- Respect outside (fire & law) entities' roles and responsibilities.
- Provide and exchange daily resource availability status.
- Cross train and adhere to fire industry and law enforcement aviation standards.
- Adhere to NIMS incident command and control practices.
- The County EMSA Director has the authority to "license" air ambulance service within the County and has done so with Mercy Air. This licensing should be reviewed as it pertains to fire and law resources.

The helicopter ordering process for wildland fires gives preference to "Agency" ships over CWN aircraft for valid reasons. Could OCSD ships be treated as "Agency" ships or at least directly dispatched by OCFA within the County? The answer is yes, but it will take both sides to step forward and demonstrate good faith and rebuild a positive relationship. OCFA has stepped forward after the Canyon 2 Fire and in good faith implemented a new directive that OCSD will be notified of wildland fires/SAR, and OCSD may respond if available. This new direction is promising and OCSD has been used for water dropping post Canyon 2 Fire. It would be a collaborative step if the OCSD reciprocated and notified OCFA of SAR calls also. A reciprocal co-dispatch protocol by OCSD would promote positive training; a redundant safety factor; and sharing of experience.

Challenges to Moving Forward

Why has the prior positive working relationship between OCFA and OCSD become so caustic regarding aviation programs? The bottom line is that this underlying environment has the potential to jeopardize air safety and compromise existing roles and responsibilities. Understandably, the media is voicing a valid concern, “What about the impact to Public Safety?”

During this review, many individuals indicated that daily working relationships between both entities remain positive and that they deliver excellent public safety without incident. However, there was general acknowledgement that relationships in the aviation programs need improvement.

These same people also cited that prior to the 2011 Grand Jury report, OCFA and OCSD aviation programs worked in unison and not as competitors. During this era, both agencies trained together and flew joint missions serving the public well while ensuring safe aviation programs. The 2011 Grand Jury report simply stated that OCSD needed to explore opportunities to maximize its air operations and cost effectiveness. It seems that at this point, OCSD began to change its air fleet from a Type 3 helicopter law mission to incorporate Type 2 helicopters to enhance SAR capability. Rescues become difficult to clearly delineate responsibility due to caller information or lack of. The concept of “closest resource” makes perfect sense when dealing with the public, as the public does not care what agency responds, they only desire good service. The rub becomes when one agency is already in the air and is closer than launching the other agency who may have more definitive mission identification.

It seems that as OCSD began to enhance its SAR role, the prior positive working relationship between both entities began to erode. Beginning in 2000, an MOU was signed to better define roles and responsibilities and later updated/signed in 2016. Even though both parties signed the MOU, interpretations of roles and responsibilities were clouded and the ensuing situations arose. Over time, relations have eroded between OCFA and OCSD to the point where there has not been any joint training for 2-4 years and the Sheriff recently cancelled the MOU. ***(Appendix K: Sheriff’s Press Release)*** It is now at the point where both entities are suspicious of each other and battles continue to ensue in the media.

Today, instead of cooperative programs focused on maximizing the best interests of the public, a competitive environment exists promoting parochial interests. Another gray area is the conflict between parochial mission roles and the “Duty to Act.” Duty to Act is a term that implies a public entity must act, but the term has various legal meanings and provides certain legal exemptions for public entities. OCSD refers to this term to justify their actions. They further justify their conflicting actions with OCFA by saying they do not charge for helicopter services. While this is true, OCSD also misses out receiving State/Federal reimbursement opportunities to offset their operating costs. Additionally, there is not one, single authoritative body (other than the voters) over OCFA and OCSD to arbitrate and resolve response disagreements and necessary MOU tenets. At the time

of this report, numerous attempts using a retired federal mediator have been unsuccessful.

At this time, the IRP found both parties quite polarized and suspicious of each other's performance and motives. Now a worse situation has developed in that aviation assets are now accusing each other of safety violations and "poaching" calls. This is further exacerbated by media reports of on-going conflicts and questions about safety and how best to serve the public.

It is hoped that both entities can use this report and the suggestions set forth in the next section as a stepping stone to put aside their differences, focus less on parochial interests and focus more on what is the public's best interests.

A Path Forward

Public concern and apprehension is warranted. The bottom line is that the current Air Operations relationship between OCFA and OCSD has the potential to jeopardize air safety and compromise existing roles and responsibilities.

Today, instead of collaborative programs focused on providing the highest level of Public Safety, a competitive environment exists promoting and defending parochial interests. While there is fault and blame that can be equally attributed to both parties, that won't provide a solution. Public trust and expectation warrants that both OCFA and OCSD commit to a resolution that will institutionalize joint training and response with the sustained objective of enhancing public safety.

In addition to the specific recommendations previously set forth in this report, the IRP offers these additional suggestions for consideration by OCFA and OCSD to harmonize and optimize their public safety aviation programs:

1. Open discussions for new MOU with OCSD (see below).
2. Initiate monthly training to facilitate operational interoperability; best practices; experience exchange; cross training; back fill.
3. Maintain monthly training until operational confidence and interoperability is achieved; then move to bi-annual training.
4. Seek a reciprocal dispatch on OCSD Rescue Calls.
5. Explore potential cost savings: equipment purchase, fuel tenders; maintenance.
6. Pursue developing the "Agency" relationship with OCSD.

OCFA Helicopter MOU Recommendations

1. Create new MOU delineating roles/responsibilities between OCFA and OCSD.
2. OCFA has primary fire mission.
    a. OCFA and OCSD resources/staff must be carded and entered into ROSS to be eligible for fire missions.
    b. OCSD and OCFA must cross train on fire, rescue, EMS missions twice annually.
    c. OCSD and OCFA shall explore shared resource use and cost savings, i.e. fuel tender shared use; helicopter maintenance; purchasing, etc.
    d. OCSD and OCFA shall create a staff exchange program to enhance relationships, training and capability.
3. OCSD is primary PSAP and shall pass through all calls without delaying service so fire department ground resources can provide simultaneous response.
4. OCSD has primary law mission.
5. Mercy has on-pavement primary EMS transport.
6. OCSD has primary SAR mission (off-pavement lost hiker).
7. OCFA has primary SAR mission (off-pavement injured hiker).
8. OCFA shall be the primary dispatch center for all EMS connected incidents (Mercy, OCFA & OCSD) as they perform EMD per Co EMSA protocols and flight following:

   a. OCFA, Mercy and OCSD shall have automatic vehicle locator capability connected to OCFA ECC.
   b. ECC shall dispatch closest capable aircraft based upon incident/patient needs.
9. OCFA and OCSD shall respect MOU tenets and not self-dispatch or “jump” calls. The primary focus shall be enhancing public service, not empire building.
10. OCFA and OCSD shall respect jurisdictional authority of primary ground agencies and not self-dispatch but may offer assistance.
11. If the primary agency’s resources are not closer or available, consideration should be given to request the other agency for aircraft and put primary staff on it (secondary agency to provide pilot) for mission accomplishment.

Independent Review Panel

Retired Fire Chief William (Bill) Bamattre has more than 45 years of fire service experience. Chief Bamattre served over 30 years with the City of Los Angeles Fire Department, including 12 years as Fire Chief. He received his Bachelor's Degree in Political Science from Stanford University and a Master's Degree in Public Administration from California State University, Los Angeles. Since his retirement, Chief Bamattre has remained involved in key issues affecting the fire service including regional collaboration and inter-jurisdictional emergency communications interoperability. With the incorporation of the City of Dana Point in 1989, Chief Bamattre was elected to the inaugural Dana Point City Council and served as Mayor in 1991.

Retired City Manager Tim Casey served over 40 years in local government. Starting his career in Redondo Beach, Tim rose to the position of City Manager, a position he held for nine years. In 1990, he was hired as City Manager for the City of Laguna Niguel where he served for 23 years before retiring in 2013. Since his retirement, Mr. Casey has served as an Orange County Senior Advisor for the International City/County Management Association (ICMA)/League of California Cities. Tim holds a Bachelor's Degree in Sociology from the USC and a Master's Degree in Public Administration from UCLA. Tim also currently serves as the Immediate Past President and Board Member of The First Tee of Orange County, a local non-profit organization.

Retired Fire Chief Robert (Bob) Roper has more than 40 years of fire service experience. Bob served as the Fire Chief of the Ventura County Fire Department and has been actively involved on a local, state, and federal level. He has chaired the Association of Contract Counties of which OCFA is a member, FIRESCOPE Board of Directors, and the International Association of Fire Chiefs Wildland Fire Policy Committee. Most recently, he served as the Nevada State Forester in 2015/2016. Chief Roper holds a Bachelor's Degree in Business Administration from the University of Redlands and is a graduate of the National Fire Academy Executive Officer Program, and is a Harvard Fellowship Alumni.

Glossary of Terms

9300 Strike Team	Cal Fire numerical order number
AAR	After Action Review
AFD	Anaheim Fire Department
APD	Anaheim Police Department
ANA	Anaheim
Angel 26	Anaheim PD Type 3 Helicopter
ATGS	Air Tactical Group Supervisor
B2	OCFA Battalion Chief – Division 2
CA-CDF	California Department of Forestry & Fire Protection
CA-OES	California Office of Emergency Services
CAD	Computer Aided Dispatch
Cal Fire	California Department of Forestry & Fire Protection
Carding/Carded	Cal Fire/USFS Helicopter/Pilot Certification
CDF 305	Cal Fire Riverside assigned helicopter
CFD	Corona Fire Department
CHP	California Highway Patrol
Cleveland	Cleveland National Forest
CWN	Call When Needed
DSR	Daily Status Report
Duke 1	OCSD Type 3 Helicopter
Duke 2	OCSD Type 3 Helicopter
Duke 6	OCSD Type 2 Helicopter
Duty Chief/Duty Officer	OCFA Division Chief daily decision point authority
E32	Engine/Crew at OCFA Station 32 (Yorba Linda)
E53	Engine/Crew at OCFA Station 53 (Yorba Linda)
ECC	Emergency Command Center
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services Agency
FBO	Fixed Based Operator
Fire Weather Watch	NWS Alert of Weather Events/Conditions Which May Result in Extreme Fire Behavior in Next 12-72 Hours
FLIR	Forward Looking Infra Red
Fuel Tender	Aviation fuel truck to support helicopter operations
FRA	Federal Responsibility Area
HLCO	Helicopter Coordinator
IC	Incident Commander
ICS	Incident Command System
IHOG	Interagency Helicopter Operating Guidelines
IRP	Independent Review Panel
LACO	Los Angeles County
LRA	Local Responsibility Area
Metro Net	Multi-Agency Fire Dispatch Agency (i.e. Anaheim)
Monte Vista	USFS Dispatch Center for Cleveland National Forest
MOU	Memorandum of Understanding
MTZ	Mutual Threat Zone

NWS	National Weather Service
NVG	Night Vision Goggle
OCEA	Orange County Employees Association
OCFA	Orange County Fire Authority
OCFA Air Ops	OCFA Helicopter Operations Division
OCFA ECC	OCFA Emergency Command Center
OCSD	Orange County Sheriff's Department
OCSD Air Ops	OCSD Helicopter Operations Division
ORC	3 letter agency designator for OCFA
ORCO 1	OCFA Type 2 Helicopter
ORCO 2	OCFA Type 2 Helicopter
PSAP	Public Safety Answering Point
RAWS	Remote Automated Weather Stations
Recon	Aerial Reconnaissance
Red Flag Warning	Highest NWS Alert of Weather Events/Conditions Which May Result in Extreme Fire Behavior in Next 24 Hours
ROSS	Resource Ordering Status System
SAR	Search and Rescue
SOP	Standard Operating Procedures
South OPs	Southern Area Operational Geographic Coordinating Center (GACC) operated by Cal Fire/USFS in Riverside
SRA	State Responsibility Area
Type 1 Engine	Structure Fire Fighting Engine
Type 3 Engine	Brush/Wildland Fire Fighting Engine
Type 3 Strike Team	5 – Type 3 fire engines & leader
USFS	United States Forest Service
UTF	Unable to Fill
Watershed-High Condition	Term that indicates a high probability of wildfire spread if started
WIMS	Weather Information Management System
WUI	Wildland Urban Interface

Appendices

A. OCFA/ECC Memo – OCSD Helicopter – Vegetation Fire Response (10/27/17)

B. OCFA/ECC Memo – Vegetation Responses (10/25/17)

C. Move-Up and Cover Procedures (OP.06.27)

D. OES MOU

E. OCFA/OCSD MOU

F. Citizen Map

G. Canyon Fire Origins Map

H. Type 2 and 3 Photo

I. Resource Response Guidelines – OCFA SOP (OP.06.43)

J. Duty Officer Coverage and Responsibilities – OCFA SOP (HR.03.01)

K. OCSD News Release (1/16/18)

L. Major Incident Notification – OCFA SOP (CO.01.05)

M. OCFA Notification Procedures (Level 1-3)

N. OCFA/ECC Memo - ECC Assessment Findings (10/5/17)

O. Response to Mutual Threat and Out of County Incidents – OCFA SOP (OP.06.50)

P. Fire Danger Operating Plan – FDOP (11/22/17)

Citations

CA Health & Safety Code re: EMSA Authority
https://law.justia.com/codes/california/2005/hsc/1797.200-1797.226.html

Duty to Act
https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?referer=https://r.search.yahoo.com/_ylt=AwrSbnQHHZtarX0AYAhXNyoA;_ylu=X3oDMTEzZjBhdnNoBGNvbG8DZ3ExBHBvcwMxMAR2dGlkA0I0OTgyXzEEc2VjA3Ny/RV=2/RE=1520143751/RO=10/RU=http%3a%2f%2fscholarship.law.berkeley.edu%2fcgi%2fviewcontent.cgi%3farticle%3d2094%26context%3dcalifornialawreview/RK=2/RS=6zdKGGRR8QjBcWnXFXcTrKM3lI0-&httpsredir=1&article=2094&context=californialawreview

Duty to Act
The Duty to Act provision is often confused by a fire or law enforcement agency's mission – "to serve & protect." Basically, the Duty to Act does not mandate an obligation to take action on an individual but does imply a duty to the general public. This creates the confusion about when an individual's safety now becomes applied to the general public definition. Court decisions give immunity to a governmental entity not to respond unless said governmental entity has a special relationship because they made assurances to an individual. In the legal sense, the oath applies to support and defend the Constitution of the United States and California "against all enemies foreign and domestic," but the definition of "enemies" may not be applicable to wildfires, floods, earthquakes, etc.

In the Orange County helicopter role dispute between fire and law, helicopter services are not required by either entity. If either entity creates a program and responds, they then build a special relationship and become liable for acts of negligence associated with services.

ANA/SRA Contract
http://behindthebadgeoc.com/cities//contract-cal-fire-pays-off-big-anaheim-fire-rescue-recent-canyon-fires/

IHOG Manual
https://www.nwcg.gov/sites/default/files/publications/pms510.pdf

Wind speed chart IHOG Chapter 6 (exhibit 6.2) sets wind speed limitations on helicopters but does not identify with buckets or without. Final decisions are up to "Pilot-on-board."

IHOG
p.13-9, line 7, Helicopter Fuel Truck Requirements
#1 An approved service truck is provided with each helicopter.

Pilot Recruitment
https://www.governmentjobs.com/careers/ocfa/classspecs/50003?keywords=pilot&pagetype=classSpecifications

Typical recruitment requirements for agency pilots vs. OCSD does not have stated requirements.
https://helijobs.net/2012/04/fire-helicopter-pilot-california/

NFES Aerial Supervision Guide
https://www.fs.fed.us/fire/aviation/av_library/iasg.pdf

ATGS assumes all aerial supervision and may request a HLCO as a subordinate position. (Chapter 2) use org diagram.

Chapter 4, 1d requires ATGS or HLCO when 3 or more aircraft are working (must have), or when operating under adverse turbulence - wind(ordered), or when 2 or more helicopters are working with fixed wing (ordered-but may continue to fly). On Canyon 2, ATGS was on-scene within minutes (see email) and HLCO was not requested until 1p.m.
Chap 4, 6.b.iii - cites water drops ineffective 25-30 knots
Chap 4, 6.b.iv -

1. (a) **Type 3 Helicopters –** Steady winds shall not exceed 30 knots or a maximum gust spread of 15 knots.
2. (b) **Type 2 and 1 Helicopters –** Steady winds shall not exceed 40 knots or a maximum gust spread of 15 knots.

Chap 5, 1.vi - A Type 3 helicopter is generally used by the Helicopter Coordinator.
Chap 8, 5.a - Within the WUI, order a HLCO to deal with congested tactical needs while ATGS is directing larger air ops.

Cal Fire
http://calfireweb.fire.ca.gov/library/handbooks/8300/8341.pdf

8353 - CWN use
8341 – Coordination

When any of the following occurs:

- Total number of aircraft exceeds 10
- Total number of air tankers exceeds 6
- Total number of helicopters exceeds 6

- ➢ Routes and altitudes established for all aircraft
- ➢ Orbital altitude assigned to all airtankers
- ➢ 2nd Control Aircraft considered

HLCO definition, Chap 1, 6
https://www.nwcg.gov/sites/default/files/publications/pms505.pdf

Source and Reference Materials

The IRP reviewed the following source and reference documents in the course of their review.

1. 1400C ROSS Request
2. 2016 Operating Plan for Cooperative Fire Protection Agreement between Orange County Fire Authority and U.S. Forest Service Cleveland National Forest (2016)
3. Agency Staffing protocols/practices for responding companies
4. Agreement for Local Government Fire and Emergency Assistance to the State of California and Federal Fire Agencies Between State of California, Governor's Office of Emergency Services; State of California Department of Forestry and Fire Protection; USDA Forest Service, Pacific Region; USDI Bureau of Indian Affairs, Pacific Region (2014)
5. Anaheim Fire Department Incident Investigation Report, Reporting Officer R. Siems (2017)
6. Anaheim Fire Department Policy 328 – Wildland Firefighting
7. Anaheim Fire Department Policy 329 – Critical Weather/Incident Activity Level Staffing Plan
8. Anaheim Hills – East, WUI Fire Plan (2015)
9. Anaheim Hills – West, WUI Fire Plan (2015)
10. Anaheim SRA Agreements/Documents
11. Articles: Canyon 1 Possibly Caused Canyon 2 – LA Times (11/6/17); NBC Los Angeles (11/6/17); OC Register (11/6/17); KABC-TV (11/6/2017)
12. Articles: Citizen Complaint – OCFA Responses to APD Helicopter Observing a Flare Up of Canyon 1 – NBC Southern California (10/18/17); LA Times (10/24/17); KTLA 10/20/17); OC Register 10/20/17
13. Articles: OCFA Failed to Use OCSD Helicopters – OC Register (10/20/17); KTLA (10/20/17); 89.3 KPCC (10/24/17)
14. Articles: OCFA Sent Resources Out-of-County on Red Flag Day – LA Times (10/25/17, 11/6/17); OC Register (10/22/17, 10/25/17, 10/26/17, 11/6/17)
15. Articles: OCFA's Response to Canyon 2 – OC Register (10/20/17, 10/22/17, 10/23/17, 10/24/17, 10/26/17, 10/31/17, 11/6/17); KTLA (10/25/17)
16. Assignment of State Fire Protection Agreement (2017)
17. Automatic Aid Agreement, Orange County Fire Authority and City of Corona (2017)
18. Bambi Bucket Capabilities
19. Before Fires (prior to 9/25/17) OCFA relief/staffing policies/protocols for strike teams
20. CAD Incident Detail Report 17-105068 Canyon Fire (9/25/17)
21. CAD info on Citizen Complaint Incident Detail Report
22. CAD Times to Backfill Strike Team
23. Cal-Fire Cards for OCSD Pilots and Helicopters
24. California Department of Forestry & Fire Protection, Gray Book, Allotments for Contract Counties, 2016/2017 Fiscal Year, Exhibit F to Fire Protection Agreement (2017)

25. California Fire Service and Rescue Emergency Mutual Aid System, Strike Team (Engine)/Task Force Leader Manual (2014)
26. California Highway Patrol CAD Incident Detail Report (9/25/17)
27. Canyon 1 and 2 Fire Aerial Map
28. Canyon 1 and 2 Fire Standard Map
29. Canyon 1 Fire Incident Audio
30. Canyon 1 Fire Mop up tactics
31. Canyon 1 Fire Photos
32. Canyon 1 Fire Unit Availability Map
33. Canyon 1 Fire Upstaffing
34. Canyon 1 Fire Weather Data, National Weather Service
35. Canyon 2 Fire Additional Timeline
36. Canyon 2 Fire Home Address Analysis
37. Canyon 2 Fire Incident - Audio - CHP Incident, Metro Net Incident, OCFA – 1 hour post, 1 hour prior
38. Canyon 2 Fire Investigation Report (Photos, Reports, Witness Statement and Docs)
39. Canyon 2 Fire Perimeter and SRA – Map
40. Canyon 2 Fire Unit Availability at Dispatch
41. Canyon 2 Fire Unit Status Prior to Dispatch
42. Canyon 2 Fire Upstaffing
43. Canyon 2 Fire Weather Data
44. Canyon 2 Fire Weather Forecast (10/10/17)
45. Canyon 2 Perimeter and MTZ
46. Canyon Fire ECC Staffing (9/25/17)
47. Canyon Fire OCFA CAD Reports – 1 hour prior
48. Canyon Fire OCFA CAD Reports – 4 hours after
49. Canyon Fire OCFA Incident Spreadsheet
50. Canyon Fire Units Status – Prior to Dispatch
51. Canyon Fire Weather Intro
52. Canyon 1 and 2 Fire Aerial Map
53. CDF Contract Area and State Park District Map
54. Citizen Complaint
55. Cooperative Fire Protection Agreement between the Orange County Fire Authority and The U.S. Forest Service Cleveland National Forest (2015)
56. Cowan & Lemon Heights WUI Fire Plan (2016)
57. CSR Morning Report (10/9/17)
58. CSR Morning Report (9/25/17)
59. Current Version of Anaheim - CAL FIRE Wildland Fire Agreement
60. Deccan OCFA Coverage Map for Canyon 1 and Canyon 2 Fires
61. East Orange – Orange Park Acres WUI Fire Plan (2016)
62. FDOP administered per policy
63. Fire Modeling Maps
64. Fire Protection Agreement, 2017/2018 Operating Plan, State of California Department of Forestry and Fire Protection – Orange County Fire Department (2017)
65. Helicopter Operations – OCFA SOP (2010)

66. Incident 110271 Citizen Complaint – Audio
67. Incident 17 – 110271 – Attachment A – Audio
68. Incident 17 – 110271 – CAD Report – Advised Incident – Helicopter Report
69. Incident 17 – 110444 – Strike Team Deployment
70. Incident Commander Assigned
71. Information Request – Terminology
72. Jason M. McEwen, OCFA Legal Counsel, MEMO, 12/4/17, Information Requested by Canyon 2 Fire Independent Review Panel
73. Memorandum of Understanding for Exchange of Fire, Rescue and Emergency Medical Services between Orange County Fire Authority and City of Orange (2007)
74. Memorandum of Understanding for Exchange of Fire, Rescue, and Emergency Medical Services between the Orange County Fire Authority and the City of Anaheim (Rev. 2003)
75. Metro Net Dispatch and Response
76. Metro Net Dispatch Log – Canyon 2 Fire
77. Metro Net Initial Dispatch and Response
78. Metro Net Memo to OCFA regarding timeline between Metro Net Initial Receipt of Brush Fire Report on 10/9/17 to OCFA Launch of MTZ Response
79. Metro Net Mutual Aid SOP
80. Metro Net Mutual Threat Zone SOP
81. Metro Net October 8 and October 9 Event Lists/Logs
82. Metro Net October 9 Daily Status Report
83. Metro Net Staffing Levels, Staffing Levels (9/25/17)
84. Metro Net Strike Team Matrix
85. Metro Net Transcript of Various Calls/Communications on October 9
86. Metro Net Vegetation Fire SOP
87. Mutual Aid Agreements and/or commitments at local, regional, and state levels
88. Mutual Threat Zone Operations Guideline for City of Anaheim, City of Orange, The Orange County Fire Authority (2010)
89. News Release – Preliminary review of initial dispatch for Canyon 2 Fire (10/25/17)
90. News Release – Responding to Article of Citizen Complaint (10/19/17)
91. OC Grand Jury 2010/2011 Review of Sheriff's Aviation Support Unit
92. OCFA – CAD Incident Detail Report – 1 hour prior
93. OCFA – CAD Incident Detail Report – 4 hours after
94. OCFA and OCSD Training Event (2016)
95. OCFA Backfill Direction
96. OCFA Canyon 2 Fire CAD Incident Detail Report
97. OCFA Canyon Fires Review – Information Requests #1 (Steffen)
98. OCFA currently employs 3 full-time pilots (Canyon 1 & Canyon 2 Fires)
99. OCFA Duty Notification Matrix
100. OCFA ECC Training Academy No. 13 Instructional Materials
101. OCFA Helo and Crew Info
102. OCFA Memo, 2017 Wildland Fire Season, (5/25/17)
103. OCFA Memo, Canyon 1 Fire Vegetation Fire Patrol Plan (10/26/17)
104. OCFA Red Flag Declaration Policy and Staffing Plan

105. OCFA SOP re: Major Incident Notification
106. OCSD “CWN” Lease Agreement with Cal Fire
107. OCSD Helicopter Billing
108. OCSD Local Agreement with Cal Fire or USFS
109. OCSD Response to Grand Jury Report
110. October 25 OCFA ECC Memo regarding OCSD Helicopter – Vegetation Fire Response
111. October 27 OCFA ECC Memo regarding ECC Communications – Vegetation Response
112. Operational Area Fire/Law Memorandum of Understanding (2016)
113. Orange County All-Hazards Incident Management Team Memorandum of Understanding (2016)
114. Orange County Aviation Operating Plan between Orange County Fire Authority and Orange County Sheriff’s Department (2016)
115. Orange County Fire Authority 2016 Unit Strategic Fire Plan
116. Orange County Fire Authority DOC/RAMP Guidebook (Department Operations Center and Rapid Attack and Mobilization Plan) (2017)
117. Orange County Fire Authority Fire Danger Operating Plan (2016)
118. Orange County Fire Authority Fire Danger Operating Plan (2016)
119. Orange County Fire Authority Incident Investigation Report, Reporting Officer R. Falcon (2017)
120. Orange County Fire Authority Incident Investigation Report, Reporting Officer M. Schuetz (2017)
121. Orange County Fire Authority, Daily Status Report (9/25/17)
122. Orange County/Cal Fire, Appendix “A” Pre-approved Resources, 2017/2018, Pre-Approved Resource Order
123. Orange County/Cal Fire, Appendix “J” Augmentation Decision Points, 2017/2018, Southern Operations Augmentation Staffing Decision Points for Orange County
124. Out-of-County and Mutual Threat Zone Response – OCFA SOP (2017)
125. Pilot Joey Heaslet, Pilot Card (2017)
126. Pilot John Harris, Pilot Card (2017)
127. Pilot K. Slate, Cal Fire Card (2017)
128. Policies for immediate and planned need Strike Teams
129. Policies/protocols/practices relating to pre-deployment, etc., based on Fire Danger
130. Red Flag Alert/Hazardous Fire Conditions Program – OCFA SOP (2016)
131. Request C (Citizen Complaint)
132. Resource Response Guidelines – OCFA SOP (2016)
133. Response Agreement/protocols: IA/AA; MA: etc.
134. ROSS Order Aircraft Order and Status Canyon 2
135. SOLAR Incident Radio Communications Plan
136. State of California – California Governor’s Office of Emergency Services, Fire and Rescue Division, Operations Bulletin #1, “Closest Resources Concept – Requesting Mutual Aid from Adjoining Operational Areas and Regions” (2014)
137. State of California Cooperative Fire Programs Local Responsibility Area Wildland Protection Reimbursement Agreement between the California Department of Forestry and Fire Protection and City of Anaheim (2013)

138. Status of OCFA Helos at Canyon 1 Fire Start
139. Status of OCFA Helos at Canyon 2 Fire Start
140. Timeline Interviews
141. Timeline of Smoke Check Activity Prior to Canyon 2 Fire
142. Valid Copy of Anaheim – OCFA MOU
143. Weather Preparedness Plan – OCFA SOP (2009)
144. Wildland Fire Operations – OCFA SOP (2008)
145. Wildland Watershed Dispatch Levels – OCFA SOP (2016)
146. Wildland Watershed Dispatch Levels – OCFA SOP (2017)

Orange County Fire Authority
Emergency Command Center

Appendix A

MEMO

DATE: October 27, 2017

TO: All ECC Personnel

FROM: Jeff Logan, ECC Manager

SUBJECT: OCSD Helicopter – Vegetation Fire Response

With the update received last week regarding OCSD being carded for firefighting with their tanked Type II Helicopter, I would like to provide some direction on how we will be utilizing this resource on vegetation responses.

Effective immediately, our staff will take the appropriate actions:

- Type-II helicopters are the standard for medium and high watershed dispatches. In ALL cases, we will utilize OCFA staffed helicopters to fill the response requirements. If additional type-II water-dropping helicopters are needed, continue to request through South Ops for the next closest and available type-II helicopter (i.e., CAL FIRE H301, H305, etc.)
- In all medium and high watershed dispatches, the OCFA will check to see if the OCSD has a type-II helicopter available. If available, they will be added as an EXTRA resource to the response. This is to say, if the response requires two type-II helicopters and OCFA Helicopter 1 and CAL FIRE 301 are already assigned, Duke 6 will be added as a third helicopter and EXTRA resource. The Incident Commander will be immediately notified of the extra resource. For now, a Duke type-II helicopter will NOT be used to fill a response REQUIREMENT.
- In all cases, if OCSD offers a type-III helicopter (helco) or water-dropping (type-II) platform to a wildland incident, the ECC will communicate with the Incident Commander and determine if the resources are needed for the response.

There are many factors that we will be working through in the future and it is possible that there could be changes to the ordering process. For now, please handle the requests for OCSD Helicopters for vegetation responses in the manner outlined in this memo.

If you have any additional questions, please do not hesitate to contact your Shift Supervisor.

Appendix B

Orange County Fire Authority
Emergency Command Center

MEMO

DATE: October 25, 2017

TO: All ECC Personnel

FROM: Jeff Logan, ECC Manager

SUBJECT: ECC Communications – Vegetation Responses

As a result of an early evaluation of the Canyon Fire and Canyon 2 Fire, I reviewed the process utilized by our staff to handle the telephone calls received by the ECC and interactions with partner agencies. I want to provide direction on clear communications and handling of vegetation incidents.

When handling reports from the public, it is imperative that we process the call information as reported to us. For example, when a caller is advising they see "fire" or "flames", it is not appropriate to handle these calls in the same manner that we would for a smoke check.

Additionally, it is important for our staff to provide the appropriate level of inquiry for each call received and not make assumptions or leave questions unanswered. This is also true when we communicate with other centers regarding reports received.

Effective immediately, our staff will take the appropriate actions:

- Fires reported within the burn scar areas (or "black") of a previous fire will result in the immediate dispatch of the closest unit or units (e.g. VEG, VEGM, VEGH, etc). The coordination with outside agencies, who may or may not be in the area, will occur after dispatch of resources.
- Reports of "fire" or "flames" by the public will always be treated as a fire until proven otherwise. It is not appropriate to send as a 'smoke check' response.
- When obtaining details from calling parties about a potential fire, it is necessary to obtain what is burning, where it is burning, color of smoke, and threaten to structures and infrastructure.
- The details obtained by calling parties need to be carefully documented in CAD and communicated to partner agencies and responding resources; use the calling party's words and descriptions when possible.
- Remain alert and avoid fatigue when working on extended incidents. For example, if you receive several fire and smoke calls in a short period of time, treat the first call with the same care as the last one. Each call has the unique possibility of resulting in a large incident.

- If/when Metro Net transfers a report of smoke or fire, clearly determine if they are asking the OCFA to initiate a full Vegetation Fire Response in the Mutual Threat Zone.
- Do not let assumptions or speculation cloud judgement
- Maintain awareness of current, predicted, and changing weather conditions. Fremont RAWS is a great station to monitor as it typically portrays the most extreme values for the entire county.
- When there is doubt on a response level, error on the side of caution and send an appropriate response.

I appreciate all of your hard work and we will continue to work together looking for ways to improve after every incident.

MOVE-UP AND COVER PROCEDURES

Prepared By: *Emergency Command Center Manager*

PURPOSE

The move-up and cover policy and procedure provides guidelines for coverage of fire station response areas-made necessary by emergency and non-emergency activities and establishes the criteria for coverage classifications. The goal is to meet response time targets throughout the OCFA jurisdiction utilizing available resources.

BACKGROUND

None

DEFINITIONS

None

PROCEDURE

Coverage for fire station response areas is provided based upon the historical frequency of incidents, classification of adjoining stations, response times from adjoining stations, and other relevant criteria. Additionally, coverage requirements may be upgraded or downgraded with Duty Chief approval based upon geographic location, special hazards and other considerations such as activity levels and weather conditions. Changes in this procedure and the cover classification of individual stations requires the approval of the Operations Chief. Duty Chief and on-duty Battalion Chiefs may make temporary changes for special events and circumstances.

A. Attachment 1 to this procedure lists each station's classification. The Operations Department will review classifications annually during the month of April.
B. Station coverage for emergency activities is the responsibility of the Emergency Command Center. Dispatchers shall initiate appropriate move-ups based upon on-scene reports of working fires, multi-victim incidents, and extended rescue operations.
C. Station coverage from planned activities (e.g. special events and training) is the responsibility of Battalion Chiefs. All coverage arrangements for non-incident related activities will be approved by the responsible Battalion Chief.
D. Incident Commanders and Company Officers shall notify the ECC when units are expected to be committed longer than the cover classification.
E. Units assigned to service calls within their first due area are available for emergency response unless, due to unusual circumstances, the officer places the unit in unavailable status.
F. Stand-Alone Reserve stations are considered covered when the unit is shown as Unavailable in Quarters (UIQ) unless specific information indicates Reserves are not available.
G. Units remain available for emergency response in CAD while traveling between move-up assignments.

MOVE-UP AND COVER PROCEDURES

Prepared By: *Emergency Command Center Manager*

H. During High Watershed and Red Flag periods, stations with cross-staffed Type 3-engines and stations with first-due wildland responsibility require primary (1 hour) coverage.
I. This policy is intended to cover routine and day-to-day operations. During major fire emergencies, all-risk disaster response, and instances of a significant drawdown of available resources, the Duty Chief will utilize the Rapid Attack and Mobilization Plan (RAMP) to distribute resources.

Classification of Stations

Station Coverage classifications are based on the number of calls occurring 0800 to 2000 in the station first due area for the most recent period July 1 to December 31.

A. Immediate Cover - Stations that average greater than six (6) calls for the period. A career cover engine or truck will be moved into these stations whenever all staffed engines and trucks assigned to the station have been committed, are unavailable, or are out-of-service over 30 minutes.
B. Primary - Stations that average between three (3) and six (6) calls for the period. A career engine or truck will be immediately moved into these stations whenever all staffed engines and trucks assigned to the station have been committed, are unavailable, or out-of-service longer than 1 hour.
C. Secondary Cover - Those stations that average greater than one (1) and less than three (3) calls for the period. A career engine or truck will be moved into these stations whenever all engines and trucks assigned to the station have been committed, are unavailable, or are out-of-service longer than two (2) hours.
D. Limited Cover - Stations that average one (1) or less than one (1) call for the period. Under normal conditions an engine or truck will be moved into these stations whenever all engines and trucks assigned to the station have been committed, are unavailable or, are out-of-service for greater than eight (8) hours.

Planned and Non-Incident Related Coverage

Battalion Chiefs must review and approve all planned or non-incident activities, and provide appropriate coverage as described in this procedure. Battalion Chiefs may provide alternate coverage that meets the intent of this SOP for resource distribution and response times.

A. No three adjacent stations shall be left uncovered. Two or three stations may share coverage if available engines or trucks are placed in a location that is central to the areas requiring coverage.
B. Relocation of companies from stations with multiple engines/trucks, and from Limited Cover stations should be considered first when providing coverage, then units from Secondary Cover stations.
C. Planned activities are to be rescheduled and units returned to available status if adequate coverage cannot be maintained due to emergency activity, significant incidents, or weather events.

MOVE-UP AND COVER PROCEDURES

Prepared By: *Emergency Command Center Manager*

D. Reserve engines, patrols, and squads may not be used for coverage, except at the home station, without Duty Chief approval.
E. Combination and stand-alone Reserve Stations may be covered by the home Reserve patrol or squad if the patrol or squad is staffed with the minimum required personnel and is available in the first due area. No two adjacent stations may be covered solely by a patrol or squad, and at least one adjoining station must be covered by an engine or truck.
F. Medic Engine companies may not be used for non-incident coverage if paramedic coverage is significantly reduced by the move.
G. Non-incident coverage should be provided from within the battalion, division, or agency-wide, in that order. Both Battalion Chiefs affected will approve inter-battalion cover assignments.
H. Engines and trucks from other agencies may be considered as providing adjacent coverage if those units are normally part of existing automatic aid agreements, and when the other agency has been advised and agrees to maintain those units in place for the period required.

Incident Related Station Coverage

Incident related station coverage will be provided by units in the order described here.

A. Relocation of a career engine or truck company from an adjacent station with two or more available units.
B. Relocation of a career engine or truck company from the next closest station which does not result in a coverage gap or empty an immediate cover station.
C. Trucks may be used for coverage as long as the requirements under Truck Coverage are met.
D. Except in drawn-down situations, units that cross-staff specialty resources (e.g. US&R, HazMat, Type 3 engine during fire season, etc.) won't be used for cover assignments.
E. During high watershed dispatch and Red Flag periods, companies with Type 3-engine responsibility will not be used for cover assignments.
F. Combination and stand-alone Reserve stations may be covered by the home Reserve patrol/squad if the patrol/squad is staffed with the minimum required personnel and is available in the first due area. No two adjacent stations may be covered solely by a patrol/squad, and at least one adjoining station must be covered by an engine or truck.
G. Units dispatched to move-up coverage will respond immediately upon dispatch, traveling Code 2, except as directed by ECC. In all cases, units dispatched to move-up assignments are to initiate their move without delay.
H. The ECC supervisor shall evaluate the effects of the move-ups, as described here, and may make adjustments, as needed, to provide the best general coverage.
I. Computer software running in the ECC may assist dispatchers in identifying coverage gaps and move-up companies based on unit availability, standards of coverage, and incident likelihood.
J. Engines and trucks from other agencies may be used to provide in-station or adjacent coverage if the units are normally part of an existing automatic aid agreement and when the other agency has been advised and agrees to maintain those units in place for the period required.

MOVE-UP AND COVER PROCEDURES

Prepared By: *Emergency Command Center Manager*

JWA/Station 33 Coverage

The Aircraft Rescue and Fire Fighting (ARFF) coverage at John Wayne Airport will be maintained at the contract level during commercial operating hours (0600-2330 hours). Whenever all three ARFF units are committed on the airport, or any one ARFF unit is committed off the airport, the Duty Chief will be contacted to arrange for coverage or return to service, as described in OP.06.02 (Aircraft Incident Operations at John Wayne Airport).

Truck Company Coverage

Truck companies will be moved up to provide an even distribution of truck service and acceptable response times when emergency incidents and out-of-service conditions require.

A. A truck company will be moved into a battalion whenever all trucks within that battalion have been committed to an emergency incident, are unavailable, or are out-of-service for greater than 1 hour. Incident Commanders and truck company officers will notify ECC whenever a truck company is expected to be committed to an incident for periods greater than 1 hour.
B. Truck companies will be moved to provide coverage as follows:
    1. One truck company per battalion.
    2. During periods of significant resource drawdown or prolonged commitment of truck companies resulting in fewer than eight available truck companies, available truck companies should be relocated to the following stations in priority order as follows:

       Stations 6, 61, 9, 75, 22, 34, 64, 59.

Paramedic Unit Coverage

When incidents and out-of-service conditions require, paramedic units will be moved-up to provide even distribution of service and to minimize response times. Paramedic units may be moved to any station to maintain an even distribution and minimize response time to the greatest service population.

A. Minimum paramedic unit coverage goal is no three adjacent paramedic units will remain uncovered for greater than one (1) hour. All paramedic personnel and Incident Commanders shall notify the ECC whenever a paramedic unit is expected to be out-of-service or committed to an incident or patient follow-up for greater than one (1) hour.
B. The ECC shift supervisor is responsible for continually evaluating paramedic coverage conditions and initiating coverage move-ups. The ECC shall query units or Incident Commanders to establish coverage needs.

MOVE-UP AND COVER PROCEDURES

Prepared By: *Emergency Command Center Manager*

Battalion Chief Coverage

A. Immediate coverage of battalions due to emergency incidents will be provided by relocating uncommitted Battalion Chiefs to provide 15 to 20 minute response times to developed areas. During normal workweek hours, staff Battalion Chiefs may be assigned to battalion coverage. Minimum coverage during drawdown conditions shall be five uncommitted Battalion Chiefs. Multiple battalion coverage should be provided as follows:
   - Battalions 1 and 8 from Station 17
   - Battalions 2 and 3 from RFOTC
   - Battalions 3, 5, and 9 from Station 21
   - Battalions 4 and 5 from Station 51
   - Battalions 6 and 7 from Station 9

B. ECC will reposition field Battalion Chiefs to maintain the coverage outlined above, with modifications for special conditions.
C. When two adjacent battalions are vacant for an extended period of time, the Duty Chief may authorize the call back of off-duty Battalion Chiefs and temporarily utilize administrative Battalion Chiefs (where possible) for coverage.
D. Battalion Chiefs and Incident Commanders must notify ECC when commitments are greater than four (4) hours.
E. Non-emergency coverage will be the responsibility of the on-duty Battalion Chief with the approval of the Division Chief.

Specialty Apparatus Locations

Specialty apparatus with limited availability will be relocated as necessary by the Duty Chief to provide needed coverage and response readiness.

RELATED REFERENCES

HR.03.01	Duty Officer Coverage and Responsibilities
OP.06.02	Aircraft Incident Operations at John Wayne Airport
OP.06.07	Department Operations Center and RAMP Activation

LEGAL CITES/REFERENCES

None

ATTACHMENTS

Attachment 1 – Station Coverage Classification

STATION COVERAGE CLASSFICATION

Battalion	Immediate[1] > 30 Minutes	Primary >1 Hour	Secondary >2 Hours	Limited >8 Hours
B1	48	2 25 64 66	44 65	
B2		10 34 35	32 53	
B3	21	37	8 **15 <** 23	14[2] 16[2] 43
B4	19 22	5 39 57	49 54	11[2] 42
B5	**33 <<<**	4 6 26 28 36	20 38 47 51 55	27
B6	7	29 30 50 60	56 59	
B7		9 24 31 45	58	18 40
B8	46	13 17 61 62	**> 63**	
B9	75	71 72 73 76 77 78 79	**> 70** **> 74**	

Station shown in **Bold** have had classifications adjusted from the statistical classification to reflect considerations of the size of roll area, classification of adjoining stations, response times from adjoining stations and other relevant criteria. The '>' symbols indicate the direction and number of steps of the adjustment.

1 Immediate Cover stations will be covered if vacant greater than 30 minutes. ECC will initiate cover immediately when it appears that units will be committed greater than 30 minutes (WSTR, Full Arrest, OUTSERV-MECH, etc.)

2 Duty Officer approval required to implement coverage. Stand-alone Reserve Stations are considered covered if the engine is UIQ.

Revised 3/1/2018

Appendix D

Search and Rescue
Model Memorandum of Understanding

Edmund G. Brown Jr.
Governor

Mark Ghilarducci
Director
Governor's Office of Emergency Services

OPERATIONAL AREA SEARCH AND RESCUE
MODEL MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (MOU), made and entered into this _____ day of, _____, 199_, by and between the _____ Fire Agency, a public entity, hereinafter referred to as " FIRE", and the _____ Law Enforcement Agency, a public entity, hereinafter referred to as "LAW"; and

WHEREAS, FIRE and LAW both provide Search and Rescue services within the jurisdiction; and

WHEREAS, FIRE and LAW have found it to be of mutual benefit to provide for the most efficient utilization of FIRE and LAW resources in the application to Search and Rescue efforts within the jurisdiction; and

WHEREAS, the respective agencies are committed to complete cooperation and coordination in providing the highest level of Search and Rescue services to the public, guided by the principle that performing cooperatively is in the best interest of victims and patients; and

WHEREAS, both agencies agree that each incident may require the services of both agencies, and further agree to utilize the Incident Command System (ICS) in Unified Command, or as Liaison Officers/Agency Representatives, at a single Incident Command Post (ICP), as prescribed by the State's Standard Emergency Management System (SEMS); and

WHEREAS, the parties hereto desire to enter into a mutual response pact, wherein one party will respond to and provide Fire/Rescue at incidents occurring within the jurisdiction, and the other party will respond to and provide Wilderness/Mountain Search and Rescue (SAR), search for missing or lost persons, missing and downed aircraft, and investigation of incidents that may involve criminal acts; and

WHEREAS, LAW recognizes the _____ Fire Agency as the primary agency with jurisdictional authority and functional responsibility to provide Fire/Rescue to the unincorporated areas and cities served by the _____ Fire Agency; and

WHEREAS, FIRE recognizes the _____ Law Enforcement Agency (normally the County Sheriff's Department) as the primary agency with jurisdictional authority and functional responsibility to provide SAR, search for missing or lost persons, missing and downed aircraft, and investigation of incidents that may involve criminal acts; and

WHEREAS, both FIRE and LAW agree that certain incidents such as Water Rescues or certain Air Operations may require a coordinated joint response; and

WHEREAS, FIRE and LAW mutually agree to enter into an Operating Plan that contains the operational details, that is subject to regular periodic review, and that by reference herein, is referred to as EXHIBIT A to this MOU;

NOW, THEREFORE, for and in consideration of the covenants contained herein, the parties hereby agree as follows:

1. Any changes to the MOU, which constitute a change in policy, shall be approved by the appropriate Governing Body of the Fire Agency and the appropriate Governing Body of the Law Enforcement Agency.

2. For purposes of liaison and administration of this MOU, the _____ Fire Chief and the _____ Law Enforcement Chief shall be designated as the representatives of the respective parties to this MOU, and they shall be jointly responsible for the administration of this MOU, and shall be jointly responsible to develop and implement an Operating Plan.

3. Specific details of the services to be provided under this MOU and the general operating policies, including, but are not limited to, response areas, types of equipment, operational command, dispatch and communications, training, response maps, preplans, incident reports, and evaluation of effectiveness shall be approved by the _____ Fire Chief and the _____ Law Enforcement Chief in the Operating Plan, attached as EXHIBIT A.

4. Annually, or more frequently as requested by either party, a joint review of the Operating Plan shall occur to identify changes in operating procedures, response information, and other subjects identified in this MOU, and that the Operating Plan may be amended by written mutual agreement of both the _____Fire Chief and the _____ Law Enforcement Chief.

5. Each party agrees that the use of Unified Command, as prescribed in SEMS shall be established at SAR and Fire/Rescue incidents when multiple agencies have statutory authority and functional responsibility, and that under these conditions, each party further agrees to co-locate in Unified Command at a single ICP.

6. Each party shall, at its own expense, develop and provide for the necessary cross connections of its communications system with the communications system of the other.

7. Each party shall, at its own expense, provide to the other party a predetermined response map system designating response areas referred to in this MOU.

8. Responsibility for requests for “Mutual Assistance “ from the parties to this MOU shall continue to rest with the agency having jurisdictional authority and functional responsibility.

9. The _____ Fire Chief and the_____ Law Enforcement Chief, or their designated representative, shall determine and agree upon the capabilities of each party to respond to incidents requiring "Mutual Assistance" and/or specialized resources.

10. The parties understand and agree that the responding party's response to a request for "Mutual Assistance" shall depend upon existing emergency conditions within its jurisdiction and the availability of its resources.

11. Reimbursement for services provided by each party pursuant to this MOU shall be through existing reimbursement policies and procedures.

12. This MOU shall become operational and effective upon execution by both parties. The MOU shall remain in effect in perpetuity. It is further agreed that either party may terminate the MOU at any time by giving written notice to the party at least sixty (60) days prior to the date of termination.

13. The parties shall agree that the provisions of this MOU are not intended to directly benefit, and shall not be enforceable by any person or entity not a party to this MOU. By entering into the MOU, neither party waives any of the immunities provided under state or federal law.

14. Notwithstanding the provisions of Government Code Section 895.2, each party shall defend, indemnify, and hold harmless the other party and its officers, agents, employees and representatives from any and all losses, liability, damages, claims, suits, actions an administrative proceedings, and demands and all expenditures and cost relating to acts or omissions of the indemnitor, its officers agents or employees arising out of or incidental to the performance of any of the provisions of this MOU. Neither party assumes liability for the acts or omissions of persons other than each party's respective officers, agents or employees.

15. By entering this MOU, neither party waives any of the immunities provided by the Government Code or other applicable provisions of law. This MOU is not intended to confer any legal rights or benefits on any person or entity other than the parties of this MOU.

IN WITNESS WHEREOF, the parties hereto have executed this MOU on the date as written below.

SIGNATURES AS APPROPRIATE PER LOCAL GOVERNING BODY POLICY.

Appendix E

OPERATIONAL AREA FIRE/LAW

MEMORANDUM OF UNDERSTANDING

This MEMORANDUM OF UNDERSTANDING (MOU), made and entered into this 30th of March, 2016 by and between the Orange County Fire Authority (OCFA), a public entity, hereinafter referred to as "FIRE", and the Orange County Sheriff-Coroner Department (OCSD) a public entity, hereinafter referred to as "LAW"; and

WHEREAS, FIRE and LAW both provide Search and Rescue services within the Orange County; and

WHEREAS, FIRE and LAW have found it to be of mutual benefit to provide for the most efficient utilization of FIRE and LAW resources in the application to Search and Rescue efforts within the Orange County Operational Area (OCOA); and

WHEREAS, FIRE and LAW are committed to complete cooperation and coordination in providing the highest level of Search and Rescue services to the public, guided by the principle that performing cooperatively is in the best interest of victims and patients; and

WHEREAS, FIRE and LAW agree that each incident may require the services of both agencies, and further agree to utilize the Incident Command System (ICS) in Unified Command, or as Liaison Officers/Agency Representatives, at a single Incident Command Post (ICP), as prescribed by the State's Standard Emergency Management System (SEMS); and

WHEREAS, FIRE and LAW desire to enter into a mutual response agreement, wherein Fire will respond to and provide Fire/Rescue and Emergency Medical Services (EMS) at incidents occurring within the Orange County Operational Area (OCOA), and LAW will respond to and provide, search and rescue, for missing or lost persons and investigation of incidents that may involve criminal acts; and

WHEREAS, LAW recognizes the OCFA as the agency with primary jurisdictional authority and functional responsibility to provide Fire/Rescue and EMS to the unincorporated areas and cities served by the OCFA; and

WHEREAS, FIRE recognizes the OCSD as the agency with primary jurisdictional authority and functional responsibility to provide search and rescue for missing or lost persons and investigation of incidents that may involve criminal acts to the unincorporated areas and cities served by the OCSD; and

WHEREAS, FIRE and LAW agree that certain incidents may require a coordinated joint response; and

WHEREAS, FIRE and LAW mutually agree to enter into Operating Plans that contain operational details, subject to regular periodic review.

The parties agree as follows:

1. Any changes to the MOU, which constitute a change in policy, shall be approved by the OCFA Fire Chief and the OCSD Sheriff.

2. For purposes of liaison and administration of this MOU, the OCFA Assistant Chief of Operations and the OCSD Assistant Sheriff of Operations, shall be designated as the representatives of the respective parties to this MOU, and shall be jointly responsible for the administration of this MOU, and shall be jointly responsible to develop and implement individual and mutually agreed upon Operating Plans.

3. Specific details of the services to be provided under this MOU are contained in Operating Plans. These Operating Plans contain the general operating policies, including, but are not limited to, response areas, types of equipment, operational command, dispatch and communications, training, response maps, preplans, incident reports, and evaluation of effectiveness. These plans shall be approved by the OCFA Assistant Chief of Operations and the OCSD Assistant Sheriff of Operations.

4. Annually, or as requested by either party, a joint review of Operating Plans shall occur to identify changes in operating procedures, response information, and other subjects identified in this MOU, and that the Operating Plans may be amended by written mutual agreement of both the OCFA Assistant Chief of Operations and the OCSD assistant Sheriff of Operations.

5. Each party agrees that the use of Unified Command, as prescribed by SEMS shall be established at incidents when multiple agencies have statutory authority and functional responsibility and under these conditions, each party further agrees to co-locate in Unified Command at a single ICP.

6. Responsibility for requests for "Mutual Assistance" shall continue to rest with the agency having primary jurisdictional authority and functional responsibility.

7. The OCFA Fire Chief and the OCSD Sheriff or their designated representative, shall determine and agree upon the capabilities of each party to respond to incidents requiring "Mutual Assistance" and/or specialized resources.

8. The parties understand and agree a request for "Mutual Assistance" shall depend upon existing emergency conditions within its primary jurisdiction and the availability of its resources.

9. This MOU shall become operational and effective upon execution by both parties. The MOU shall remain in effect in perpetuity. It is further agreed either party may terminate the MOUat any time by giving written notice to the party at least sixty (60) days prior to the date of termination.

10. The parties shall agree the provisions of this MOU are not intended to directly benefit, and shall not be enforceable by any person or entity not a party to this MOU. By entering into the MOU, neither party waives any of the immunities or indemnifies provided under state or federal law.

11. Notwithstanding, the provisions of Government Code Section 895.2, each party shall defend, indemnify, and hold harmless the other party and its officers, agents, employees and representatives from any and all losses, liability, damages, claims, suits, actions and administrative proceedings, and demands and all expenditures and cost relating to acts or omissions of the indemnitor, its officers agents or employees arising out of or incidental to the performance of any of the provisions of this MOU. Neither party assumes liability for the acts or omissions of persons other than each party's respective officers, agents, or employees.

12. By entering into this MOU, neither party waives any of the immunities provided by the Government Code or other applicable provisions of law. This MOU is not intended to confer any legal rights or benefits on any person or entities other than the parties of this MOU.

The parties hereto have executed this MOU on the date below.

OPERATIONAL AREA FIRE/LAW MEMORANDUM OF UNDRESTANDING
Approved By:

Jeff Bowman, Fire Chief
Orange County Fire Authority

Date: 3/31/2016

Sandra Hutchens, Sheriff-Coroner
Orange County Sheriff's Department

Date: 3/30/2016

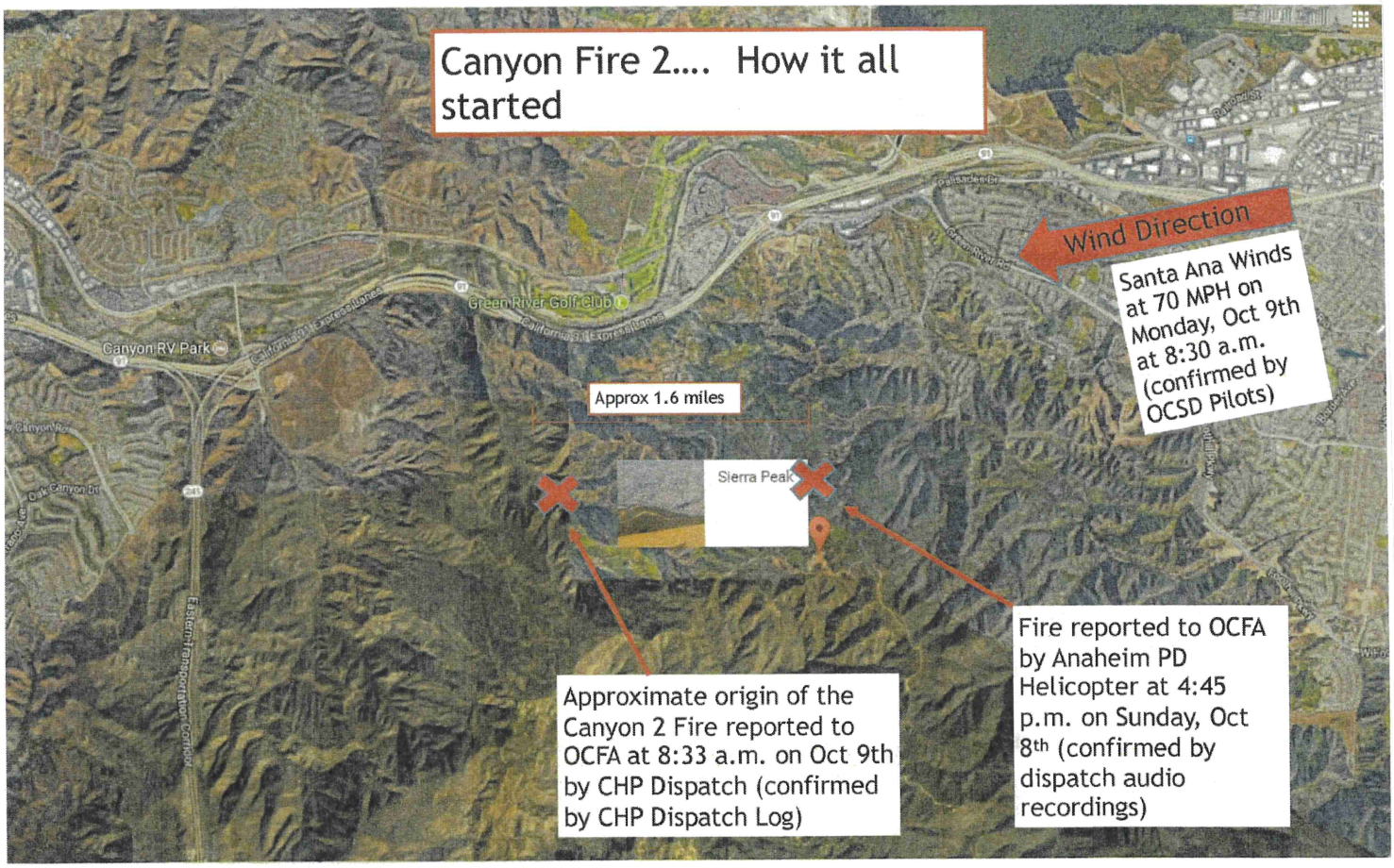
Witnesses:

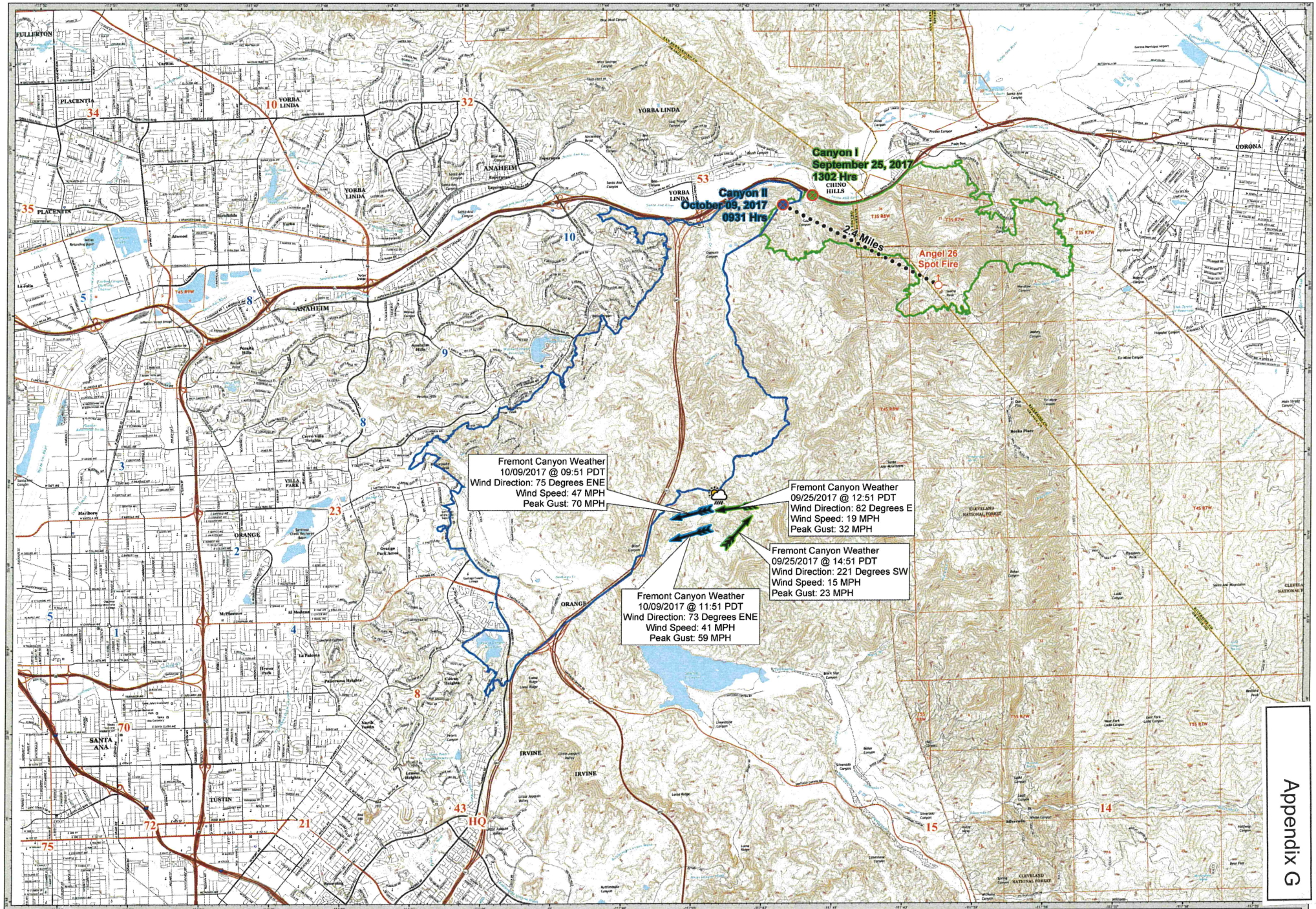
_____

_____

CITIZEN'S COMPLAINT MAP REFERENCE

Appendix F





Appendix G

ORIGIN MAP

1:24,000

0 0.5 1 Miles

OCPA GIS 1/8/2018 1827 Hours NAD 83 Texas Albers

Fremont Canyon Weather Station

Canyon I Origin

Canyon II Origin

Canyon I Fire Polygon

Canyon II Fire Polygon

Angel 26 Spot Fire

DottedLine

Canyon Fire Origins

Independent Review Panel

January 05, 2018

Appendix H

Type 2

Type 3

Resource Response Guidelines

Prepared By: *Emergency Command Center*

PURPOSE

To identify the type and quantity of resources that the Orange County Fire Authority Emergency Command Center will normally dispatch to reported emergency and non-emergency incidents and assistance requests. The goal of this procedure is to provide concise guidelines on the type and quantity of resources sent by the OCFA. The procedure will also provide for periodic review to assure that the guidelines are consistent with the available resources and Authority objectives.

BACKGROUND

DEFINITIONS

None.

PROCEDURE

The OCFA Emergency Command Center will dispatch predetermined resources to emergency and non-emergency incidents and requests for assistance as described in Attachment 1, (Type of Call/Resource Allotment Chart).

The Type of Call/Resource Allotment Chart will be reviewed in April of each year by the Operations Department. This review will evaluate the appropriateness of the resource allotments and make adjustments as necessary to match available resources with the assistance goals identified by the Authority. Any permanent change in the predetermined resources must be approved by the Assistant Chief of Operations. The Tvoe of Call/Resource Allotment Chart will be maintained by the Operations Department.

Incident Commanders, chief officers, and company officers may modify the amount and type of dispatched resources when special circumstances or conditions warrant. Local or regional emergencies or conditions may cause the resource allotments to be adjusted by the Emergency Command Center. Such changes must be approved as soon as possible by the Assistant Chief of Operations or Duty Officer.

Units will respond to incidents either Code 2 (Respond without delay, observing all traffic laws and regulations) or Code 3 (Respond without delay using emergency warning devices according to SOP OP.06.58) according to the direction provided on the matrix.

Resource Response Guidelines

Prepared By: *Emergency Command Center*

RELATED REFERENCES

SOP OP.06.58- Vehicle Operator Safety

LEGAL CITES/REFERENCES

None.

ATTACHMENTS

- Attachment 1 – Resource Reference Notes
- Attachment 2 - Type of Codes
    - Fire
    - Medical Aids
    - Vegetation/Watershed
    - Airport Responses
    - Alarms
    - Hazardous Conditions
    - Special Agreements
    - Traffic Calls

RESOURCE REFERENCE NOTES

AIR UTILITY - Fire apparatus, staffed by reserves, with capability to refill SCBA breathing air cylinders. OCFA incidents require Scott 4.5 compatibility. All ORC Air Utilities are Scott 2.0 and 4.5 compatible and provide scene lighting. Service Support also has this capability. Staffed by Reserve Firefighters. A30, A41

CRASH UNIT- Also ARFF Unit, a heavy aircraft fire fighting vehicle with off road capability. F1, Command Vehicle, 4 x 4 Patrol. F3, Crash 3- 1500 gallons ofwater, 120 gallons 3% AFFF, 500 lbs. Halon 1211; F4 3000 gallons of water, 220 gallons 3% AFFF, 500 lbs. dry chemical; F5, Crash 5- 3000 gallons of water, 420 gallons 3% AFFF, 450 lbs. dry chemical, Nozzle penetrating boom/nozzle; Foam Trailer- Carries 1000 gallons of 3% AFFF; (Reserve F2, Crash 2 - 1500 gallons of water, 120 gallons 3% AFFF, 500 lbs. Halon 1211.)

DOZER- Bulldozer. All ORC Dozers are ICS Type 2, D-6 bulldozers. K1, K2,

EMERGENCY TRANSPORT - A patient transport ambulance. ET50, ET60, ET64, ET66

ENGINE - Fire apparatus with hose, pump, and water tank. ICS Type 1, 2, or 3.

FIRE COMMAND UNITS- A trailer set up to operate as a mobile command post equipped with radio, phone, CAD, Fax and resource and incident tracking tools. C1 AND C2

FOAM TENDER - Modified engine with 1500 GPM pump and proportioner, 1000 gallons of 3%-6% Alcohol Type Foam concentrate, 100 gallons of High Expansion Foam Concentrate and HiEx foam generator. Cross-staffed by Engine 36. F36

FUEL TENDER - A 500 gallon diesel fuel tank truck. Staffed by Automotive Section personnel.

HAND CREW - Organized crew used for manual work tasks. Refer to ICS 420-1 for type and capability. Santiago Crew (G1AIB) are a Type 1 dividable crew, consisting of 2 squads of personnel plus supervision; Crew 18 (G18) is a non-typed administratively determined crew for use in OCFA jurisdiction only.

HAZ MAT- A Type 1 Hazardous Materials Response Team, staffed with a minimum of six personnel. Crossed-staffed by Truck and Engine 4; responds together as a two-piece company. H4,H204,H79

HEAVY RESCUE- A Type I USAR (Heavy Rescue) Team (Per FIRESCOPE FOG ICS 420-1) staffed with a minimum of six USAR qualified personnel. Responds to incidents involving collapse or failure of heavy floor, pre-cast concrete or steel frame construction, trench and excavation rescue, confined space (permit required), mass transit rescue, helicopter-rescue operations, swift/water rescue and rescue boat operations. Cross-staffed by Truck 6. HR6

HELICOPTER - Rotary wing aircraft with water dropping capability. All ORC helicopters are ICS Type 2 with either bucket or fixed tank 350 gallon capacity or 9 passengers. HC1, HC2, HC3 and HC4

HELICOPTER SUPPORT- Provides support equipment and supplies for helibase and helicopter operations. Staffed by Station 41 Reserve Firefighters. HS41

HELICOPTER TENDER - A 1000 gallon Jet A fuel tank truck and helicopter support unit. Staffed by Station 41 Reserve Firefighters. HT41

LOGISTICS/COMMUNICATIONS TRAILER- A trailer designed to function as a back-up Command Center, or to provide incident based logistics functions. Housed at Station 43, transported by Truck 43 or Automotive Section personnel. **LCT1**

MULTI-CASUALTY UNIT - A cargo box van equipped with basic medical supplies for a large multi-casualty incident. Cross-staffed by Engine 51. **MC51**

PARAMEDIC ASSESSMENT UNIT- A unit staffed with one paramedic as part of the crew, which can provide standing orders A.L.S. Level care.

PARAMEDIC ENGINEfTRUCK- Engine or truck company with two assigned paramedics.

PATROL - Four wheel drive type 6 engine with CAFS capability and 200 gallons of water, 20 gallons foam.

QUINT- Truck company. Fire apparatus with both a pump and an aerial ladder or platform performing truck functions.

SERVICE SUPPORT- Support/Rehab unit capable of air cylinder refill, limited fire incident re-supply, and drinks/snacks and other supplies for personnel rehabilitation. Staffed by Service Center personnel. **891, V91**

SQUAD – Rescue vehicle equipped with BLS, rope rescue and salvage equipment. 15 SCBA cylinders, generator/lights.

USAR SUPPORT/SWIFT WATER RESCUE- Patrol unit outfitted seasonally with water rescue equipment including outboard powered inflatable boat, rescue lines, devices and harnesses, and personal flotation devices. Cross-staffed by USAR truck personnel. **US6, US9, US34, US61**

TELESQUIRT- (or Squirt) Type 1 engine with a 50 foot waterway boom.

TRUCK - Fire apparatus with aerial ladder or platform, without a pump, performing truck functions.

US&R TRUCK- A Truck company staffed with a minimum of 4 US&R-qualified members and a compliment of specialized rescue equipment. (Minimum staffing of 4 personnel meets requirements for a Type II (Medium) USAR Team per FIRESCOPE FOG ICS 420.) **T6, T9, T34, T61**

WATER TENDER- Water tank truck with pump. Primarily staffed by Reserve Firefighters but may be staffed by qualified career personnel. **W7, W16, W20, W32, W41 (AIR OPS ONLY)**

Type of Code - Fires

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
BBQ		■									1																						
BOAT		■									1																						
BOATO	■										1																						
BOATW		■				1					3											1	1						1				
BUS		■									2																						
BUSH		■									1																						
BUSHO	■										1																						
DUMP		■									1																						
FENCE		■									1																						
FIRE		■									1																						
FIREO	■										1																						
ILBURN		■									1																						
IMPW [1]		■									2[1]																						
KITCH		■				1				3												1	1						1				
POLE		■									1																						
REF		■									1																						
REFO	■										1																						
REFW [1]		■									2[1]																						
ROOF		■				1				3												1	1						1				
SMCK	■										1																						
STR		■				1				3												1	1						1				
STRO	■										1																						
STRBBQ		■				1				3												1	1						1				
STRDMP		■				1				3												1	1						1				
STRHR		■	1		1	2		1		1	6											1	1	1	1	1			2				
STRSMK		■									1																		1				
STRVEH		■				1					3											1	1						1				
TANK		■				1		1			3					1						1	1					1	1				
TANKER		■				1		1			3					1						1	1					1	1				
TCWF		■		1		1					2											1											
TRAIN		■				1		1			3					1						1	1	1				1	1				
TRANS		■									1																						
TREE		■									1																						
TRUCK		■				1					2																						
UNK [1]		■									2[1]																						
VAULT		■									1																						
VEG [1]		■									2[1]																						
VEH		■									1																						
VEHO	■										1																						
VEHW [1]		■									2[1]																						
WELL		■				1		1			3					1						1	1					1	1				
WSTR		■				2		1			4											1	1		1	1			2				
950		■									1																						

* Can be filled by closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

[1] See "Vegetation/Watershed Response" matrix for all vegetation/watershed responses (Low/non-watershed indicated he

Type of Code - Medical Aids

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit ^	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
ABD(A)				1							1											1										
ALLER(A)				1							1											1										
AMA				1			1				1											1										
APA(A)				1							1											1										
ASSLT(A)				1							1											1										
BITE(A)				1							1											1										
BLEED(A)				1							1											1										
BURN(A)				1							1											1										
CA				1							1											1										
CCT				1							1											1										
CHEST(A)				1							1											1										
CHOKE(A)				1							1											1										
CVA(A)				1							1											1										
DIAB(A)				1							1											1										
DROWN(A)				1							1											1										
ELEC				1							1											1										
FALL(A)				1							1											1										
ILL(A)				1							1											1										
INJ(A)				1							1											1										
LOCKM				1							1											1										
PDSVCM				1		1					1											1										
PREG(A)				1							1											1										
RESP(A)				1							1											1										
SEIZ(A)				1							1											1										
SHOOT				1		1					1											1										
TOXIC(A)				1							1											1										
UNCON				1							1											1										

If type code above does not have an (A) after it, that would be a BLS response {1 eng/trk, amb)
If type code above does have an A after it, that would be an ALS response (1 eng/trk, 1 med, amb)
(Example: RESP would be BLS, RESPA would beALS

^ Dispatch Crash FC with any Crash unit response

- For Traffic-related medical aids, see "Traffic Codes"

- For al Rescue cal I Rescue Codes"

Type of Code - Vegetation/Watershed

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief - Operations	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only) ...	Engine/Truck (any) '	Engine - Type 3	FPAC Chief	Foam Tender	Handcrew '	HazMat	Heavy Rescue Unit	Helicopter --	Hose Tender	Investigator	Multi-Casualty Unit	Overhead Personnel ...	Paramedic	Patrol/Squad --	PIO	Safety Officer	Service Support (V91)	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
VEG [4]											2																						
VEGL (low)											2																						
VEGM (med) [2]				1	2		1	1		4		2			1			1		2		..	1	1		1	V						1
VEGH (high) [2]				1	2		1	1	1	4		2			2			2		2		..	1	1		1	V						2
											2																						
UNK [1]											2																						
VEGAA [4]			Agency-specific Auto Aid response--varies																														
VEGO											1																						
VEHW [1]											2																						

[1] Response based on current watershed level in CAD (Low indicated)

[2] SRA Land approved for: 1 Air Attack / 2 Air Tankers

[3] G18 will be dispatched at the descretion of the IC

[3] Santiago Crew (GIA and GIB) are dispatched during normally staffed hours or at the decretion of the IC after hours

• Second Crew will be requested through South Ops as needed

• Can be filled by closest engine or truck

.. Only patrols are dispatched on vegetation responses/ See RFF guidelines

... Use OCFA and/or CALFIRE/USFS ordered through South Ops

, See agreement for Agency-specific Auto Aid response

"Additional Overhead Personnel Dispatched to all vegetation fire responses:
SUP!- Superintendant 1
WLANDl- Wildland 1

V = V91-Service Support/Vegetation

"' Planned or out-of-cou strike teams must have 1 desi nated Paramedic E ne

Type of Code - Airport Responses

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC^)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
CAT1S				1		1	3				1												1						1			
CAT1R				1		1	3				1												1						1			
CAT2S				1		1	3			1	3												1						1			
CAT2R				1		1	3			1	3												1						1			
CAT3S			1	1		2	3	1		1	6				1					1		1	2			1	1		2	1	1	
CAT3R			1	1		2	3	1		1	6				1					1		1	2			1	1		2	1	1	
AAA							3					2																				
ABOMB						1	3					2					1						1									
ADA							3					1																				
AFUEL							3																									
AMA				1			1					1											1									
ASVC							^					1																				
PLANE						1	^[1]				3				1			1	1			1	1							1	1		

^ Crash FC dispatched with Crash Units/ "^" alone indicates Crash FC dispatched alone

* Can be filled by closest engine or truck

** Patrol/Squads do not respond on JWA/ See RFF guidelines

[1] Crash FC res se will be determined by incident location/ Duty Officer Approval

Type of Call - US&R/Special Rescues

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
DRAIL				1		1		1			3							1						1	1		1				1	1	1	
LOCKV												1																					
PLANE				1		1					3				1			1	1			1	1	1						1			
RCS			1	1		1		1				1					1	1					1	1		1	1			1	1	1	
REMOTE				1		1		1				1							1				1	1									
RESCUE												1																					
RSTR				1		1		1			3							1					1	1		1				1	1	1	
RTEC				1		1		1			1							1					1	1		1				1	1	1	
SWTR						1					3								1				1	1		1		2		1			
USAR [1]												1																					
WROOF						1					3							1					1	1		1				1	1	1	
WSLIDE						1						1																					
WTR						1					1								1				1	1		1		2		1			

* Can be filled by closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

[1] Augmented response to be determined by I.C. or Operations Chief

Type of Code - Alarms

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC^)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
AA											1																						
AAA^						2					1																						
AACO											1																			1			
AAHD											1																						
AAHL											1																						
AAMP											1																						
AASD											1																						
AAT											2																						
AAWF											1																						
APA				1							1											1											
BELL											1																						
FA	Advise Call Only - No Response or Report																																
RESET											1																						
SYSDN	Advise Call Only - No Response or Report																																

/\ Crash FC is automatically dispatched on any Crash Unit response

* Can be filled by closest engine or truck

** Patrol/Squads do not respond on JWA/ See RFF guidelines

Type of Code - Hazardous Conditions

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
ARC		■									1																						
BOMB		■			1						1					1						1						1					
CHEM		■			1					1						1								1					1				
CHEMIN		■			1					3						1						1		1					1				
FIREW	■										1																						
FWKS	■										1																						
FLOOD	■										1																						
FUEL	■										1																						
HCS	■										1																						
HYD	■										1																						
ILBURN		■									1																						
NGASI		■									2																						
NGASO		■									1																						
ODCK	■										1																						
OIL	■										1																						
PDSVC		■			1						1																						
PDSVCH		■			1						1					1							1										
PROP		■									1																						
PROPT		■			1		1			3						1						1	1					1	1				
QUAKE	■										1																						
REDFLG		■									1																						
RESCUE		■									1																						
SEWER	■										1																						
SHORT	■										1																						
SPACK		■			1				1		1					1								1				1	1				
SPACKA		■			1		1		1	3						1						1	1	1				1	1				
SPACKB		■	1		2		1		1	6						2						2	1	1	1	1		1	2				
SPILL		■									1																						
STUCK	■										1																		1				
SWAT		■		1	1						1											1			1			1					
TSPILL		■			1					3						1							1						1				
WIRES	■										1																						
WVAC	■										1																						

* Can be filled closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

! Response determined by requesting Law Enforcement Agency

Type of Code - Special Agreements

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
COVER		■									1																						
MCI^		■	1			4		4			15							1			1	3			1	1			2	1		
MUAID		■									1																						
SONGS	■										1																						
USAR		■									1																						
VEGAA		■				1			1		5																					1	

* Can be filled by closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

/\ Multi-casualty Response/ Requested by I.C. Only

Type of Code - Service Calls

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
ASSIST	■										1																						
BTB	■										1																						
CITE	■										1																						
CODE6		■																		1													
INFO	Advise Call Only-No Response or Report																																
INSP	Advise Call Only-No Response or Report																																
INVEST	■										1																						
LOCK	■										1																						
LOCKM		■		1							1											1											
LOCKV		■									1																						
PDSVC		■			1						1																						
PDSVCH		■			1						1					1												1					
PDSVCM		■	1		1						1											1											
SVC	■										1																						
SWAT		■			1						1		1									1			1			1					
SYSDN	Advise Call Only-No Response or Report																																
TEST	Advise Call Only-No Response or Report																																
WVAC	■										1																						

* Can be filled by closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

! Response determined by requesting Law Enforcement Agency

Type of Code - Traffic Calls

	Code 2 Response	Code 3 Response	Air Utility	Ambulance	Assistant Chief	Battalion Chief	Crash Unit (& Crash FC)	Division Chief	Dozer	Duty Officer	Engine (only)	Engine/Truck (any) *	Engine - Type 3	EPAC Chief	Foam Tender	Handcrew	HazMat	Heavy Rescue Unit	Helicopter	Hose Tender	Investigator	Multi-Casualty Unit	Paramedic	Patrol/Squad **	PIO	Safety Officer	Service Support	Swift Water	Terrorism Liason	Truck	Truck - US&R	US&R Support	Water Tender
BIKE		■	1								1											1											
DRAIL		■	1		1		1			3							1					1	1		1				1	1	1	
LOCKV		■	1								1											1											
MC		■	1								1											1											
TCBIK		■	1								1											1											
TCBUS		■	1		1						2											1							1				
TCC2	■										1																						
TCCR		■	1		1					1												1							1				
TCMC		■	1								1											1											
TCPED		■	1								1											1											
TCSTR		■	1		1					1												1							1				
TCTRN		■	1		1					3							1					1	1						1	1	1	
TCVIC		■	1								1											1											
TCWF		■	1		1						2											1											
TCWI		■	1								1											1											

* Can be filled by closest engine or truck

** Patrol/Squad responses subject to RFF Response Guidelines

DUTY OFFICER COVERAGE AND RESPONSIBILITIES

Prepared By: *Division 3 Division Chief*

PURPOSE

This procedure provides guidelines to ensure duty officer coverage at all times.

BACKGROUND

None

DEFINITIONS

None

PROCEDURE

General Guidelines for Duty Officer Coverage

- The Operations Chief shall provide day-time Duty Officer coverage during his/her normal work days
- When the Operations Chief is not available, the Operations Support Division Chief will provide day-time Duty Officer coverage
- Division Chiefs shall serve as the primary after-hours, holiday, and weekend Duty Officer
- The Operations Department Chief or Support Department Chief may assist with after-hours, holiday, and weekend Duty Officer coverage as necessary
- To serve as Duty Officer the assigned Chief must reside in Orange County or within 30 minutes normal driving time of Orange County
- The Duty Officer shall be available by phone, pager, or radio at all times during his/her assigned coverage periods
- In the event the assigned Duty Officer is unavailable, he/she may request one of the other Division Chiefs to cover in his/her place

DUTY OFFICER COVERAGE AND RESPONSIBILITIES

Prepared By: *Division 3 Division Chief*

- When the assigned Duty Officer is not available or passes coverage responsibility, it is the responsibility of the assigned Duty Officer to immediately advise ECC of who is covering, the time frames they will be covering, and when they will resume the coverage

Duty Officer Schedule

Division 1 Chief shall develop the annual Duty Officer Schedule each December and revise as necessary using the following criteria:

- Coverage will be for one week periods, Monday through Sunday

- Coverage will be from 1700 – 0700 (14 hours) Monday – Friday and all day on Saturday, Sunday, and holidays (24 hours) during the coverage period

- The Duty Officer schedule shall be provided to ECC

Notification Procedures

ECC shall notify the assigned Duty Officer by pager, phone, or radio of any significant incident or activity that has, or may likely affect, OCFA personnel, resources, or community relations, as well as those notifications identified by the Notification Matrix maintained in ECC.

Duty Officer General Responsibilities

- Reporting the nature and severity of a significant incident to Executive Management, the Board of Directors, and City Officials. The Duty Officer will make personal contact with the appropriate City Manager/Board office, or will insure that the responsible Battalion Chief or Incident Commander has done so. (ECC personnel shall not serve as the point of contact.)

- Reviewing and guiding as necessary the move-up and cover of resources and directing the call-back of necessary personnel associated with major incidents

- Evaluating and assuring documentation of Fire Authority actions at incidents involving fire-caused fatalities

- Initiating special operating plans and procedures

- Assigning a Chief Officer to represent the Fire Authority when the County Emergency Operations Center (EOC) is activated and assigning appropriate personnel when city or airport EOCs are activated

DUTY OFFICER COVERAGE AND RESPONSIBILITIES

Prepared By: *Division 3 Division Chief*

- Representing the Fire Authority on OES and FIRESCOPE conference calls during major emergencies
- Providing information when necessary to the Multi-Agency Coordination Center to assist in incident prioritization
- Acting as the Fire Authority's contact and approval source for ECC regarding requests for out-of-county response, assistance to other agencies, and mutual aid requests
- Providing direction related to personnel problems and public complaints
- Providing for next-of-kin notification for Fire Authority employee injury or fatality, and providing notification to members of the Board of Directors if appropriate as detailed in SOP 103.13A *Notification and Communication of On-Duty Death or Injury*
- Providing for next-of-kin transportation
- Providing for Fire Authority Chaplain and/or Family Liaison notification when needed
- Assisting the Incident Commander in providing Accident Investigation and Critical Incident Stress Debriefing Teams when required, and providing proper direction and briefing to the teams
- Handling or assigning personnel, to assure administrative matters, such as citizen complaints, are handled in a timely manner
- Communicating with appropriate political representatives and governmental authorities during emergencies affecting respective jurisdictions
- Coordinating Operational Area mutual aid, resource deployment, and support
- Providing direction to ECC for further notifications as identified by Notification Matrix

RELATED REFERENCES

Notification Matrix

SOP HR.04.11 *Notification and Communication of On-Duty Death or Injury*

DUTY OFFICER COVERAGE AND RESPONSIBILITIES

Prepared By: *Division 3 Division Chief*

LEGAL CITES/REFERENCES

None

ATTACHMENTS

None

Appendix K

[redacted]

ORANGE COUNTY
SHERIFF'S DEPARTMENT

550 N. FLOWER STREET
SANTA ANA, CA 92703
714-647-7000
WWW.OCSD.ORG

SHERIFF-CORONER
SANDRA HUTCHENS

NEWS

FOR IMMEDIATE RELEASE

PIO Carrie Braun:
W: 714-647-7042
C: 714-904-7042

OCSD to serve as Orange County's primary Search and Rescue agency in remote areas

SANTA ANA, Ca. (Jan. 16, 2018) -The Orange County Sheriff's Department (OCSD) will serve as the County's primary responders for remote-area rescues as an agreement with the Orange County Fire Authority (OCFA) for a dual-agency approach expires today.

A 2016 Memorandum of Understanding (MOU) took a dual-agency approach for air search and rescue missions in remote wilderness and park areas. The MOU was set to expire in August 2017, however Sheriff Sandra Hutchens has extended the MOU multiple times. Sheriff Hutchens announced today she will not issue another extension.

"It is in the public's best interest that the Sheriff's Department serve as primary provider for remote-area search and rescue missions," Hutchens said. "Air rescues in remote and wildland areas represent one facet in a comprehensive Search and Rescue program that has been serving county residents for more than 70 years."

The Sheriff's Department founded its Search and Rescue program in 1947, introducing an air support component starting in 1985. Initially, OCSD aircraft had limited ability to provide rescue operations due to the fact that aircraft did not have hoist capability. Since then, the OCSD Aviation Support Unit has expanded its capabilities and is now outfitted with two UHIH helicopters with hoist capability for various types of rescues, including tactical medical missions. OCSD's Aviation Support Unit is accredited as an Advanced Life Support program

On June 5, 2017, the Sheriff gave 60-day notice to the OCFA of her intent to terminate the existing MOU. At the Aug. 8, 2017, Board of Supervisors meeting, Sheriff Hutchens committed OCSD to mediation with OCFA regarding the Air Search and Rescue MOU. OCSD and OCFA met with a mediator and ideas were exchanged in good faith, but a resolution was not reached. Sheriff Hutchens has opted to proceed utilizing guidelines reflective of statewide best practices and consistent with the Search and Rescue Model Operating Plan developed by the State of California's Office of Emergency Services.

"I am committed to working collaboratively with the Orange County Fire Authority and all other mutual-aid agencies to deliver the best public safety services to the citizens of Orange County," Sheriff Hutchens said. "Our agencies work together closely on a regular basis and those partnerships will continue."

[redacted]

MAJOR INCIDENT NOTIFICATION

Prepared By: *Executive Management/Communications and Public Affairs*

PURPOSE:

To establish a process that ensures the appropriate board members, governmental authorities and OCFA executive staff are notified of significant incidents, emergencies, or events, in a timely manner.

BACKGROUND:

The Clerk of the Authority is responsible for compiling contact information for board members, board alternates, and city managers for each OCFA member city and county supervisor representatives. The Clerk of the Authority is responsible for maintaining the contact list and notifying the Communications and Public Affairs Department of any changes.

The Communications and Public Affairs Section is responsible for creating, maintaining and distributing the Major Incident/Event Notification Handbook. A hard copy of the Major Incident/Event Notification Handbook will be provided to the:

- Fire Chief
- Assistant Chief of Support Services
- Assistant Chief of Organizational Planning
- Assistant Chief of Operations
- All Division Chiefs
- Field Battalion Chiefs' vehicles
- Emergency Command Center Supervisor's desk
- Director of Communications and Public Affairs
- Battalion Chief of Communications and Public Affairs

PROCEDURE:

Emergency Command Center:

The Emergency Command Center (ECC) will notify the Duty Chief of the nature and severity of any significant incident or event via phone. A follow-up email providing additional details or information may be sent as necessary to the Duty Chief by the ECC Supervisor. Significant incidents include, but are not limited to:

MAJOR INCIDENT NOTIFICATION

Prepared By: *Executive Management/Communications and Public Affairs*

General

- Complex incidents where specialized resources (e.g. HazMat unit, Helicopter, Crash/Rescue, US&R resources, Hand Crew, etc.) are utilized to assess, stabilize, or mitigate the incident (e.g. hazardous materials, swift water rescue, helicopter rescue operation, plane down, technical rescue, explosion, active shooter incident, bomb threat, etc.)

- Incidents involving critical infrastructure (e.g. police station, city hall, transportation facility, water department, etc.) or politically sensitive locations (e.g. churches, schools, family planning clinics, theme-parks, daycare centers, etc.)

- Incidents where a large number of resources (ten or more fire units) are assigned

- Incidents or events that have the potential to attract, or have already attracted, significant media attention

- Incidents where groups of people witnessed a tragic event (e.g. shooting at a public event, vehicle into a crowd, etc.)

Fires

- Fires where a firefighter, law enforcement officer, or civilian is injured/killed

- Working structure fires where; 1) residents are displaced, 2) people are severely injured or killed, or 3) business operations are interrupted

- Vegetation fires that are; 1) greater than an acre, 2) damage structures or infrastructure, or 3) results in evacuations of people/animals

- Responses into non-OCFA jurisdictions where a large number of resources (ten or more fire units) are assigned

Medical/Rescue

- Mass-Casualty Incidents (MCI) or incidents where there are multiple fatalities

- Rescues where victims are freed from significant entrapment (e.g. vehicle, confined space, trench, collapses, etc.)

MAJOR INCIDENT NOTIFICATION

Prepared By: *Executive Management/Communications and Public Affairs*

Duty Chief:

Utilizing the city notification handbook the Duty Chief will notify (Qr will ensure that the responsible Battalion Chief or Incident Commander has notified) the appropriate OCFA Board Member, OCFA Board Chair, City Manager or the Orange County Chief Executive Officer, (for unincorporated areas of the county), Orange County Supervisor, and the OCFA Executive Management Team of a significant incident or event according to their individual preference and threshold for notification. Notifications will be made by text message, email, or phone between the hours of 6 a.m. and 11 p.m.; between the hours of 11 p.m. and 6 a.m. a text message and email will be sent.

The Duty Chief or responsible Division Chief will send a brief summary text or email to the Fire Chief and Communications Director.

OCFAPIO:

The OCFA Duty PIO will notify the Duty Chief, responsible Division Chief, or IC Battalion Chief of significant media attention associated with incidents. This is in addition to those that ECC would routinely notify the Duty Chief or Division Chief. As an example; human interest stories, non-fire related incidents; traffic collisions involving pedestrians, those that will generate calls to the PIO from media outlets, stakeholders, constituents, etc.

Upon arrival on scene (or from remote location) the PIO will first contact the IC for a detailed briefing. The PIO will call, email, or text the OCFA Communications Battalion Chief or Communications Director (at his or her discretion) prior to conducting any interviews with a summary of the incident, impacts, injuries, and notifications.

ATTACHMENTS:

1. Major Incident Notification Template

ORANGE COUNTY FIRE AUTHORITY MAJOR INCIDENT NOTIFICATION TEMPLATE	
These findings are preliminary intended solely for informational use by OCFA partner city members and are not for public release. Findings are subject to change as additional information becomes available.	
Incident Date	
Dispatch Time	
Incident Type (Structure Fire, Vehicle Accident, Drowning, Etc.)	
Incident Address	
Damage (Value loss to structure and property)	
Occupants (Displaced and Disposition)	
Injuries/Casualties (firefighters, civilians and/or animals)	
Incident Narrative	
Prepared By (Name and Title)	

Appendix M

ORANGE COUNTY FIRE AUTHORITY- NOTIFICATIONS

LEVEL 1 - Emergency Notification Procedure (REQUIRES IMMEDIATE NOTIFICATION)	LEVEL 2 - Notification Procedure (REQUIRES NOTIFICATION WITHIN 30 MIN.)										LEVEL 3 - REQUEST NOTIFICATION PROCEDURE (REQUIRES NOTIFICATION ONLY WHEN DIRECTED								
	Battalion Chief	Duty Chief	Division Chief	Fire Chief	Corp. Comm. /EPAC Chief (Hoey & Stone)	Assistant Chief / OPS, Plans, Support	Assistant Chief / CRR	EMS Chief (Dossey)	EMS MD	Training Chief (Gomez)	Investigator	PIO	ECC SFCS	ECC Manager	Safety Officer	Automotive Mgt.	Risk Mgt / Dept. (Wilby & Bredehoft)	3631 Representative
2nd Alarm Incident	D		D												D			
3rd Alarm Incident or Greater	D		D								D				D			
Evacuations	D		D															
Employee Injury/Illness - evaluation and release																	**	***
Fatality/Inj/Ill requiring extended hospitalization	D		D					*	*		*		*		*		**	***
Fire Fatality - Civilian																		
Fire Injury Serious - Civilian -																		
Firework / IEDs injuries																		
Wildland / Interface Fire	D		D												D			
Ornamental / Vegetation fire within city limits	D														D			
Red Flag Warning / Alert - Make General Announcement																		
Technical / Remote Rescue	D														D			
In County Mutual Aid / Auto Aid (3 or More Units)	D																	
Out of County -- Equipment / Personnel Request																		
Out of County -- 2 or more Strike Teams																		
Ops Coord. Center Mode 3/4 - County/State EOC Activation																		
Traffic accidents involving a Fire Vehicle	D																**	
Songs Unusual Event	D																	
Songs Alert	D																	
Songs Site/Gen. Emergency	D																	
Earthquake	D																	
Civil Disturbance	D		D															
Aug. Full Assignments - Assign 2 or More / Working Structure	D														D			
Aircraft Crash Category II/III	D		D												D			
Biological/Chemical/Nuclear/Explosion	D																	
MCI / MVI																		
Drowning	D												HCA FOR PUBLIC POOLS					

07/22/17 D =DISPATCH IMMEDIATELY *Notification directed by DUTY Chief /** OCFA Vehicle accidents add Hemstock /*** 3631 now done by BC

Appendix N

Orange County Fire Authority
Emergency Command Center

MEMO

DATE: October 5, 2017

TO: Dave Anderson, Assistant Chief of Support Services

FROM: Jeff Logan, ECC Manager

SUBJECT: **ECC Assessment Findings**

I have completed my 45-day assessment period in the ECC and I have been able to gain valuable insight as to the current environment in the center. As it pertains to the areas that were documented in my original "ECC Manager, 45-Day Plan", I have provided the following findings and recommendations.

People:

Over the course of this assessment period, I have met individually with each of our supervisory and dispatch staff to learn more about our staff and attempt to see the center through their eyes.

- Findings:
    - Several dispatcher vacancies have negatively affected morale of the center
    - Lack of consistency amongst different work groups or shifts in the ECC
    - Perceived lack of understanding from field about responsibilities and job complexity in the ECC
    - Shift assignments are not reviewed on a regular basis
- Recommendations:
    - Continue with development of current trainees to address immediate staffing needs.
    - Establish ongoing recruitment process with HR to ensure ECC can fill vacancies as they occur.
    - Work with ECC Supervisory staff to identify and address areas in which consistency is needed between work groups and/or shifts
    - Establish an ECC Sit-Along program for field units as well as a Ride-Along program for ECC Staff to build relationships and improve communications between both work groups.

- Conduct annual review of shift assignments and make changes as necessary to best meet the needs of the center.
- Provide ongoing support and training for dispatcher wellness and health

Roles/Responsibilities:

In meeting with each employee, I gained valuable insight of the current job responsibilities and the perceptions from staff for these duties.

- Findings:
  - Outdated Organization Chart
  - Lack of commitment to utilizing chain of command
  - Lack of clearly defined roles in ECC
  - Outdated job descriptions in ECC
  - Lack of established procedures for moving an incident to expanded dispatch and staffing expanded dispatch
  - ECC Staff possess many professional skills that are not utilized in ECC
- Recommendations:
  - Update ECC Organizational Chart to reflect current assignments
  - Reinforce with ECC Supervisors and Staff the appropriate utilization of chain of command
  - Work with ECC Supervisory staff to establish clearly defined roles for positions within the ECC structure
  - Meet with HR to update current ECC job descriptions and further assess organizational structure
  - Work with supervisory staff to develop methods to utilize skills of ECC staff to assist in center wide employee development.
  - Further assess move-up supervisor responsibilities and implement program enhancements
  - Work with supervisory staff to develop plan for transition to expanded dispatch and how to support the activation with staffing
  - Assess options to have a qualified supervisor on the ECC floor during peak activity

Structure of the ECC:

- Findings:
    - Vacancy in SFCS in the ECC
    - Lack of succession planning in ECC
    - Need for administrative staff position in ECC
- Recommendations:
    - Continue to assess the need to fill frozen positions
    - Work with OCFA leadership to develop ongoing employee development and ECC succession plan

Dispatch Process:

- Findings:
    - Minor changes needed for call taking screen to allow better awareness for ECC staff in regard to call processing times
    - Lack of established check lists for processes that are not common in the ECC or can be complex due to incident nature
    - Needed improvement in ECC consistency regarding answering of telephone lines and/or radio communications
- Recommendations:
    - Work with IT to address minor changes for call taking screen and ensure ECC staff is well informed of the change
    - Assign ECC Supervisory staff to identify center operations that would benefit from a detailed checklist and then assign staff to collaborate on production of these documents
    - Develop and/or reinforce acceptable center standards for telephone and radio etiquette

Dispatch Performance:

- Findings:
    - Recent changes to track and report dispatch performance have been successful
    - Lack of follow-up with ECC staff on use of Call and/or Dispatch Factors (CF/DF)

- Recommendations:
    - Develop a process for ECC Supervisory staff to track compliance for their shift daily
    - Work with supervisory staff to ensure there is a process in place to review DF and CF entries to ensure staff has the appropriate training and tools available to them

Training:

Throughout my entire assessment period, the one area that remained relevant in every area reviewed is the lack of a comprehensive and consistent training program.

- Findings:
    - Staffing levels have contributed to the amount of training that could be conducted off site
    - Lack of ongoing training programs for employee development
    - Use of on-line opportunities such as "Target Solutions" has provided staff with opportunities to conduct training at their own pace
- Recommendations:
    - Work with ECC Supervisory staff to develop a comprehensive ongoing training program focused on the development of ECC staff.
    - Continue to utilize creative scheduling for training opportunities that allow maximum participation from ECC staff.
    - Continue to utilize programs like "Target Solutions" that allow training to be conducted without affecting ECC staffing
    - Provide training for supervisors on topics such as: leadership, customer service, coaching/counseling, conflict resolution, teamwork, motivation, and relationship building.

Equipment / Facility:

- Findings:
    - Re-configuration of layout for ECC Manager Office to allow better interaction with ECC staff
    - Future plans will require HVAC, kitchen and dorms to be assessed for updates
    - Lack of monitoring available to ECC staff for emergency systems such as emergency generator, HVAC and UPS systems

- Recommendations:
    - Work with property management to discuss findings and plan for future remodel or enhancement efforts in the ECC
    - Implement plans to routinely inspect and test all systems and equipment

Criteria Based Dispatch:

- Findings:
    - Quality Assurance Program (CQI) is currently in the initial stages and staff has not yet received any training or feedback on calls that have been reviewed
    - Training provided for CBD has not been consistent in recent years, but has improved with newly hired nurse educator
    - There is no established dispatcher re-certification program in place for CBD.
    - No CAD interface for the use of CBD, all data in CAD from CBD is a manual entry from the call taker
    - No interaction with other dispatch agencies in the county who are using the same EMD system
- Recommendations:
    - Work with EMD team to ensure staff is trained and fully understand the CQI program
    - Ensure consistent CQI is completed for all employees
    - Select key members of ECC, EMS, and IT to travel to King County for review of CBD deployment and Tri-Tech CAD interaction
    - Establish a comprehensive training and re-certification process for CBD program
    - Meet with local cooperators who also use the same EMD program to assist in developing consistency in the county
    - Prepare EMD program for alternative delivery systems and deployment models as directed by Operations
    - Publish periodic performance measures

Documentation of policies and procedures:

- Findings:
    - Existing ECC administrative polices are outdated (last revisions in 2008)
    - Lack of necessary operations policies in ECC

- Lack of documentation for routine/daily duties in the ECC

- Recommendations:
  - Utilize established OCFA process to update current ECC policies
  - Meet with Supervisory staff to determine and prioritize a list of operational polices that are needed in the ECC
  - Meet with ECC Supervisors to develop ECC handbook for routine/daily duties in the ECC

Summary:

In summary, the assessment period provided me with a tremendous opportunity to understand our center and our role to the OCFA. I have learned about our people, our systems, and our organizational structure just to name a few. I will be working closely with OCFA Management and ECC staff to establish both short-term and long-term goals that will help us restore leadership, trust, and accountability in the ECC.

OUT-OF-COUNTY AND MUTUAL THREAT ZONE RESPONSE

Prepared By: *Operations/Division 3*

PURPOSE

This procedure provides a description of dispatch and response criteria for OCFA aircraft, crew, equipment, and overhead personnel to both mutual threat and out-of-county incidents. The goal is to minimize delay and error in resource selection and response for aircraft, crew, equipment, and overhead resources. Also included are guidelines for travel, duration of assignments, rest requirements, maximum driving times, and feeding of personnel.

BACKGROUND

The OCFA may provide resources to various jurisdictions, both within and outside of the geographic boundaries of Orange County. These resources may be provided as overhead, aircraft, crew, or equipment (single increment, Strike Team/Task Force). To maintain consistency within the National Response Framework, OCFA resources must be typed in a manner that follows the national standard, incorporating FIRESCOPE, and FEMA/NIMS resource typing. Additionally, position names and descriptions must meet the standards of IQS, CICCS, and ROSS. Response outside the geographic boundaries of Orange County is restricted to Career personnel who meet CICCS standards (qualified or trainee) in their respective positions.

DEFINITIONS

CalOES	State of California Governor's Office of Emergency Services
FEMA	Federal Emergency Management Agency
NIMS	National Incident Management System
FIRESCOPE	Firefighting Resources of California Organized for Potential Emergencies
CICCS	California Incident Command Certification System
ICS	Incident Command System
IQS	Incident Qualifications System, NWCG 310-1
Initial Attack	Closest available mutual aid resources within the Operational Area
Immediate Need	Needed at once to protect life and property
Planned Need	Non-urgent; needed for a future operational period
Strike Team	Five like resources with common communications and a leader
Task Force	Group of resources with common communications and a leader
Mutual Threat	An incident that occurs within a geographic boundary that is considered an imminent threat to areas protected by the OCFA, or an incident within OCFA boundaries which is a threat to another jurisdiction.
ROSS	Resource Ordering Status System
STEN	Strike Team Leader, Engine
EAR	OCFA Emergency Activity Report
IRPG	Incident Response Pocket Guide

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

PROCEDURE

Resource Response Guidelines

- Strike team leaders and overhead personnel must check-in with the incident prior to accepting an assignment.
- All personnel should possess their issued Incident Qualifications Card (Red Card) for check-in and verification of qualifications.
- All OCFA Strike Teams shall include a designated PAU as part of the configuration.
- Out-of-county requests from Cal-OES Region 1 to OCFA as the Operational Area Coordinator shall be filled in continuous alternating rotation between OCFA and Metro Net. This includes strike team, task force, and overhead where Metro-Cities can fill the requested resources type.
- Out-of-county requests from cooperating agencies or as part of contract or automatic aid agreements will be filled with OCFA resources.
- Out-of-county immediate/planned need strike teams shall be filled with the appropriate strike team on weekly rotation.
- In-county and mutual threat zones immediate need strike team requests shall be filled with the closest available requested resources.
- In-county and mutual threat zones planned need strike team requests shall be filled by the appropriate strike team on weekly rotation.
- In-county overhead requests will be selected from the OCFA Emergency Response Directory (ERD) when possible. In-county overhead requests may be filled by ECC and/or the duty officer with non-CICCS qualified personnel during the initial attack phase of the incident. Efforts shall be made to fill positions with CICCS qualified personnel whenever practicable.
- Out-of-county overhead personnel will be selected from the OCFA's Emergency Response Directory (ERD) with duty officer approval. Selections shall be made to provide rotation, to maintain currency and/or further CICCS trainee status.
- Aircraft (Type II Helicopter), Hand Crew (Type I Crew), and Heavy Fire Equipment (Type II Dozer), Patrols (Type VI Engine), and Water Tenders (Tactical) may be dispatched on mutual threat and out-of-county responses at the discretion of the duty officer.

Immediate Need Strike Team Response (In-County and Mutual Threat)

- Assigned units shall respond code 3 to the incident or staging location unless otherwise directed by the strike team leader.

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

Immediate Need Strike Team Response (Out-of-County)

- The identified units assigned to the strike team (Red, White, Blue, Gold) shall respond code 3 to the pre-designated out-bound staging location.
- Unless approved by the duty officer, immediate need response is limited to adjoining counties (Los Angeles, Riverside, San Diego, and San Bernardino).

Planned Need Strike Team Response (In-County and Out-of-County)

- The identified units assigned to the strike team (Red, White, Blue, Gold) shall respond code 2 to the incident or staging area unless otherwise directed by the strike team leader.

Out-of-County Predesignated Staging Areas

- Identified by ECC at the time of dispatch
- Northwest - OCFA Fire Station 61
- North - NB 57 Freeway/Tonner Canyon
- East - EB 91/Green River
- Ortega - Ortega Highway/Caspers Regional Park
- South - SB I5/Basilone

Radio Use/Frequencies

- Travel frequencies (UHF and VHF) shall be assigned by ECC
- Units shall monitor the incident tactical channel when in range
- Upon assignment, all units shall only utilize assigned incident frequencies

ALS/PAU Out-of-County Response Guidelines

OCFA shall pre-designate a single unit with ALS capacity to serve as the ALS/PAU unit. If the pre-designated unit is unavailable, the duty officer, strike team leader, or ECC will designate a replacement unit to serve in a PAU capacity.

To ensure adequate supplies for replacement paramedic units, while also ensuring ALS capacity on strike teams, the non-designated ALS units shall adhere to the following:

- When responding from the station or as planned need, ALS units (PAU/PMEs), should remove the monitor/defibrillator, medication box, and airway bag.

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

- All ALS equipment removed from the units shall be placed in a secure location with the medications secured. The company officer is responsible for ensuring compliance and provide notification for the on-duty battalion chief and on-coming back-fill crew as needed.
- The strike team leader will verify assigned units have accomplished this procedure prior to leaving.
- Units not in quarters and dispatched as immediate need shall respond directly to the incident without delay.

Type 3 Engines

Type 3 engines not normally assigned to a pre-designated strike team shall be utilized in the following manner:

- Always available for response when part of an Initial Attack (IA) or immediate need (closest resource) request.
- May be used as a "relief" engine behind E315 or E318 with duty officer approval
- Order for use as relief:
    - Behind E315 use E327
    - Behind E318 use E358
    - E370 may be used behind E315 or E318 if the primary relief units (E327/E358) are unavailable
- May be used as a "replacement" unit to fill in behind a unit on the pre-designated Blue or Gold Strike Team.
- A daily review of the resources assigned to the primary strike team should be done to ensure that all five engines are available and in service. If a unit is not available, a replacement unit should be identified and ECC, the strike team leader, and the replacement unit's crew notified. The intent is to provide advance notice and awareness prior to dispatch and response.
    - Order for use as replacement:
      1st – E370
      2nd – E327
      3rd – E358

OCFA Commitment to Metro-Net Strike Teams

- Addition of an OCFA Type 3 engine to a Metro Net Strike Team is not automatic.
- Primary responsibility for OCFA is to ensure adequate capability for response within OCFA jurisdiction and mutual threat areas.
- The duty officer will evaluate OCFA's capabilities and draw down level prior to approving Type 3 resources to respond with a Metro Net Strike Team.

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

Driving, Travel, and Feeding

- The following provisions apply to strike teams driving to an incident or returning from an incident to Orange County from out-of-county responses greater than 72 hours.
- Typically, strike teams will be committed to a maximum 14 day assignment. On or before the 14th day, the strike team will either demob from the incident, or the OCFA may opt to replace the crews at the incident.
- Expectation for strike team leaders is to demobilize from the incident in a timely manner and start the drive home.
- Driving time begins when the units have left the incident and are on the road.
- For long distance drives, it is expected that the strike team will drive a maximum of 10 hours, and will be off the road no later than 2200 hours.
- If the strike team must travel longer than 10 hours or past 2200 hours, the strike team leader will consult with the duty officer to obtain approval to rest overnight. The remainder of the trip will be completed the next day. Any consideration to rest overnight should be discussed with the personnel at the incident to obtain approval for reimbursement to the OCFA.
- When the strike team drives longer than 8 hours to arrive back to the OCFA, those members whose regular shift is the day of return will be relieved for the remainder of the 24 hour shift. Shift trades are excluded from this rule; it is the responsibility of the employee to arrange for relief from these instances.
- If the strike team travels less than 8 hours and the strike team has rested at least 12 hours prior, no personnel will be relieved and are expected to return to their shift upon return.
- In cases when traveling to an incident on an Immediate Need order, consideration may be given to extending the drive, provided that each unit utilizes qualified rotating drivers to reduce fatigue. The STEN should consult with the duty officer prior to implementing.

The following provisions apply to overhead personnel who are not assigned to a State or Federal Incident Management Team.

- Overhead personnel may be assigned up to 21 days on an out-of-county assignment.
- Requests for extension greater than 21 days must be made to the duty officer.
- Overhead personnel may drive a maximum of 10 hours and will be off the road no later than 2200 hours.
- If the drive to an incident or to home exceeds 10 hours, or the 2200 hours limit, the driver may opt to rest overnight upon consultation with the duty officer and continue driving the following day.

The following provisions apply to Overhead personnel who are assigned and rostered on a State or Federal IMT.

- Overhead IMT members may be assigned to an incident up to 21 days for team consistency.

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

- After 21 days, the IMT member may extend the assignment up to a maximum 30 days following consultation with the duty officer.
- After 21 days, the IMT must provide the IMT member with 2 days off for rest and recovery prior to continuing work.
- IMT personnel may drive a maximum of 10 hours and be off the road no later than 2200 hours, or must rest overnight.
- In most cases, resting overnight at a hotel is the responsibility of the OCFA. STEN and overhead personnel are responsible to consult with incident personnel to attempt to arrange for payment or reimbursement. Documentation providing name and position of the person approving hotel costs must be provided to OCFA Finance personnel if reimbursement to the OCFA is needed.
- Any resting overnight which would result in costs being incurred by the OCFA requires duty officer approval prior to the expenditures and proper documentation for finance and tracking.

Feeding of Personnel

- In most cases, feeding of strike team and overhead personnel is the responsibility of the incident during travel and while at the incident.
- Any expenses made during travel must have proper documentation provided to the OCFA Finance Section upon return for reimbursement.
- All feeding while assigned to the incident is the responsibility of the hosting agency. Any deviation from normal incident feeding must be approved by the incident prior to any expenditures. Consultation should be made to the Agency Representative, Liaison Officer, or other responsible party. Information regarding approval with name and position of approving individual should be documented utilizing an ICS-213 form.

Rules of Engagement

- LCES
- Always follow the approved Incident Communications Plan (ICS 205).
- Keep radio traffic to a minimum.
- Strike team leaders and overhead personnel shall check-in with ECC daily.
- All personnel shall carry an NWCG IRPG and Incident Qualifications Card (Red Card).
- Limit procurement of equipment and supplies to what is needed. The strike team leader (STEN) or designee must approve of all equipment checked out from the incident.
- Personnel are expected to wear the proper uniform and represent the OCFA professionally at all times.
- Alcohol use during assignment to an in-county or out-of-county incident is strictly prohibited.
- All loaned equipment must be returned prior to the demobilization process.

RESPONSE TO MUTUAL THREAT AND OUT-OF-COUNTY INCIDENTS

Prepared By: *Operations/Division 3*

- All OCFA equipment lost or damaged must be documented at the incident on an ICS 213 and the ICS-214unit log.
- All activities shall be documented on an ICS 214 form.
- All incident related paperwork shall be completed prior to demobilization. This includes finance (FLSA5, FC42, OCFA EAR) and training (task books, ICS 225).
- Know and follow thc FIRESCOPE WUI Policy.
- Upon return from assignment, forward all completed financial documents to the OCFA Finance Section.

RELATED REFERENCES

California Incident Command Certification System – Qualifications and Position Guide
FIRESCOPE – ICS-420-1 Field Operations Guide (FOG)
NIMS- National Response Plan
Orange County Fire Services Operational Area Mutual Aid Plan
CALFIRE Gray Book Agreement
California fire Assistance Agreement (CFAA)

LEGAL CITES/REFERENCES

None

ATTACHMENTS

Out-of-County Code of Conduct

Out of County Code of Conduct

All OCFA personnel who are assigned to out-of-county assignments, whether part of a strike team or in an overhead assignment, shall follow the code of conduct. Our actions are a direct reflection of the OCFA, the Orange County Fire Service, and the entire fire service profession!

- Always act in a professional manner
- We are paid portal-to-portal. Regard the entire assignments as you would any emergency, not as a vacation.
- Maintain a constant state of readiness at all times. This includes rest periods at hotels.
- Camping chairs shall not be utilized while on assignment.
- Alcohol or illicit drugs shall not be transported or consumed at any time.
- Attend all safety briefings prior to assignments. A safe working environment shall always be provided for all personnel.
- All personnel are empowered to halt unsafe or hazardous acts where the risks outweigh the benefits.
- Seatbelts shall be worn at all times when the vehicle is in motion.
- All PPC/PPE shall remain in a serviceable condition and shall be worn during line assignments.
- The proper uniform or attire shall be worn during rest assignments. This includes both base camp and eating establishments.
- Always know who you are assigned to. Maintain accountability of your crew.
- All personnel changes on Strike Teams shall be coordinated and approved by the Strike Team Leader prior to being implemented.
- Obtain Strike Team Leader approval prior to taking any photographs or video. All OCFA personnel shall follow OCFA Social Media policies prior to assignment.
- Cell phone usage, texting and social media shall be restricted to periods when resources are out-of-service or unassigned. Personnel must follow OCFA social media policy at all times.
- Do not enter any structure without the permission of the owner, except to search or defend the structure or as a Refuge of Last Resort. Always respect the property owner; if you enter a structure, leave a note identifying the strike team/overhead and actions taken.
- Violation of any of these rules may be grounds for removal from the assignment.

Appendix P

Fire Danger Operating Plan

FIRE
ORANGE COUNTY
CALIFORNIA
AUTHORITY
Est. 1995

FDOP Executive Summary

To comply with the Annual Operating Plan between Orange County Fire Authority (OCFA) and CALFIRE, this Fire Danger Operating Plan (FDOP) has been developed based on scientific analysis of historical fire and weather data to help OCFA administrators, fire managers, dispatchers and firefighters effectively implement the National Fire Danger Rating System (NFDRS) for Orange County. At its core, this plan outlines how designated data thresholds trigger leveled resource and communication responses, plus it calls out who is responsible for each component. As a dynamic document, it will be reviewed and updated at least annually, or more frequently if needed.

ECC's Role

OCFA's Emergency Command Center (ECC) has primary responsibility for implementing this Fire Danger Operating Plan in terms of resource deployment, which involves Fire Communications Dispatchers, ECC Supervisors, the EOC Staff Captain, and the ECC Battalion Chief. Decisions are based on the following flow of information:

Resource Deployment Information Flow

RAWS Data *Remote Automated Weather Stations (3 in Orange County)*	WIMS *Weather Information Management System*	Watershed Dispatch Level *Dictates Staffing & Resource Levels*	Possible Modifications *Per Weather Conditions or Fire Activity Levels*	ECC's Initial Attack Response *If a fire happens*
*Each OCFA RAWS, including Fremont Canyon, Bell Canyon, and Aliso Laguna, supports an OC Fire Danger Rating Area (FDRA), which are based on NWS zones, and possess relatively uniform fire danger.	WIMS is a centralized weather data processing system, where daily fire danger ratings are produced that impact staffing levels.	Watershed Dispatch Levels (WSDL) is determined for each FDRA by WIMS indices forecasts.	OCFA's Duty Chief can modify the WSDL's for each OC FDRA, with ECC's coordination.	For purposes of resource dispatching, the highest forecast at 1600 or later determines staffing levels for all OCFA for the following day and is effective for 24 hours from 0800 – 0800.

**Only the Bell Canyon and Fremont Canyon RAWS were used for this plan, since Aliso Laguna is new.*

Note, each FDRA's Watershed Dispatch Level is determined independently of the other FDRAs, so differences in weather conditions may result in different Watershed Dispatch Levels in each FDRA on the same day, such as the Coastal FDRA could be in a "Low", while the Santa Ana Mountain FDRA is in a "High".

A "*Breakpoint*" is a threshold that corresponds to a change in historical fire activity. "*Preparedness Levels*" differ from "*Adjective Fire Danger Ratings*" because it takes fire history into account, in addition to weather data. Consequently, each FDRA's staffing index and associated Breakpoints are unique, and based on a statistical analysis of their respective historical weather and fire activity, as detailed below:

Watershed Dispatch Levels by Area

Areas				Index Breakpoints (WSDL)			
FDRA	RAWS	Fuel Model	NFDRS Index	Low SL 1, & 3	Medium SL 4	High SL 5	*High *SL
Santa Ana Mountains	Fremont Canyon	7N	SC	0-69	70-137	138-187	188+
Orange County Inland	Bell Canyon	7N	SC	0-65	66-130	131-151	152+
Orange County Coastal	Aliso Laguna	TBD	TBD	TBD	TBD	TBD	TBD

*Indicates 97th percentile day, most likely Red Flag conditions. Consider augmented staffing, based on Duty Chief's direction and Appendix J.

Duty Chief Role

The Orange County Fire Authority Duty Chief, an assignment that rotates weekly between OCFA Division Chiefs, provides input and guidance regarding preparedness and response levels. Specifically, the Duty Chief's responsibilities under this plan are to:

- Collect and distribute the daily Fire Danger Rating Adjective Level as required by this plan.
- Receive, evaluate, and if necessary, modify the Watershed Dispatch Level, noting that modification of the Watershed Dispatch Level must be coordinated with the OCFA Emergency Command Center (ECC).
- Confirm the daily fire weather forecasts, including the National Fire Danger Rating System (NFDRS) indices, are retrieved and that the Adjective Fire Danger Rating and Watershed Dispatch Levels are determined at least once daily, then distributed and stored.
- Ensure the timely editing of the 1300-hour weather observations of all OCFA-owned weather stations.
- Keep OCFA management and staff updated of changes to the Watershed Dispatch Level during fire season as appropriate.

Communication Plan

OCFA's corresponding Communication Plan is based on the Adjective Fire Danger Rating, which is calculated by the NFDRS processor, using weather inputs and selected fuel models for each of the three Orange County FDRA's, as illustrated in the table below:

Communication Plan Information Flow

Weather + Fuel Model Inputs	NWS	NFDRS Indices	Adjective Fire Danger Rating	OCFA Communication Plan
	NWS Fire Weather forecasts are distributed daily.	Selected indices** correlate to each FDRA's characteristics and quantifies its Fire Danger	Calculated by a NFDRS processor	As outlined in this plan

*** In Orange County, Spread Component (SC) in the "N" Fuel Model has been determined to be the best NFDRS index that statistically correlates to fire spread. Spread Component's sensitivity to wind also matches well with weather conditions that drive the development of large fires within Orange County.*

Adjective Fire Danger Rating values will be set according to the forecast derived from WIMS, and will be assigned to each FORA independent of the other FDRAs, so that each FORA has its own Adjective Fire Danger Rating with the associated color that will be published on any sign, map, banner, widget, applet, etc. in that area.

Adjective Fire Danger Ratings

Value	Color	Description
Low (L)	Green	Fuels do not ignite readily from small firebrands, although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting
Moderate (M)	Blue	Fires can start from most accidental causes *but,* with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H)	Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless th are attacked successful while small.
Very High (VH)	Orange	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics, such as long-distance spotting and fire whirlwinds when burn into heavier fuels.
Extreme (E)	Red	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks until the weather cha or the fuel su lessens.

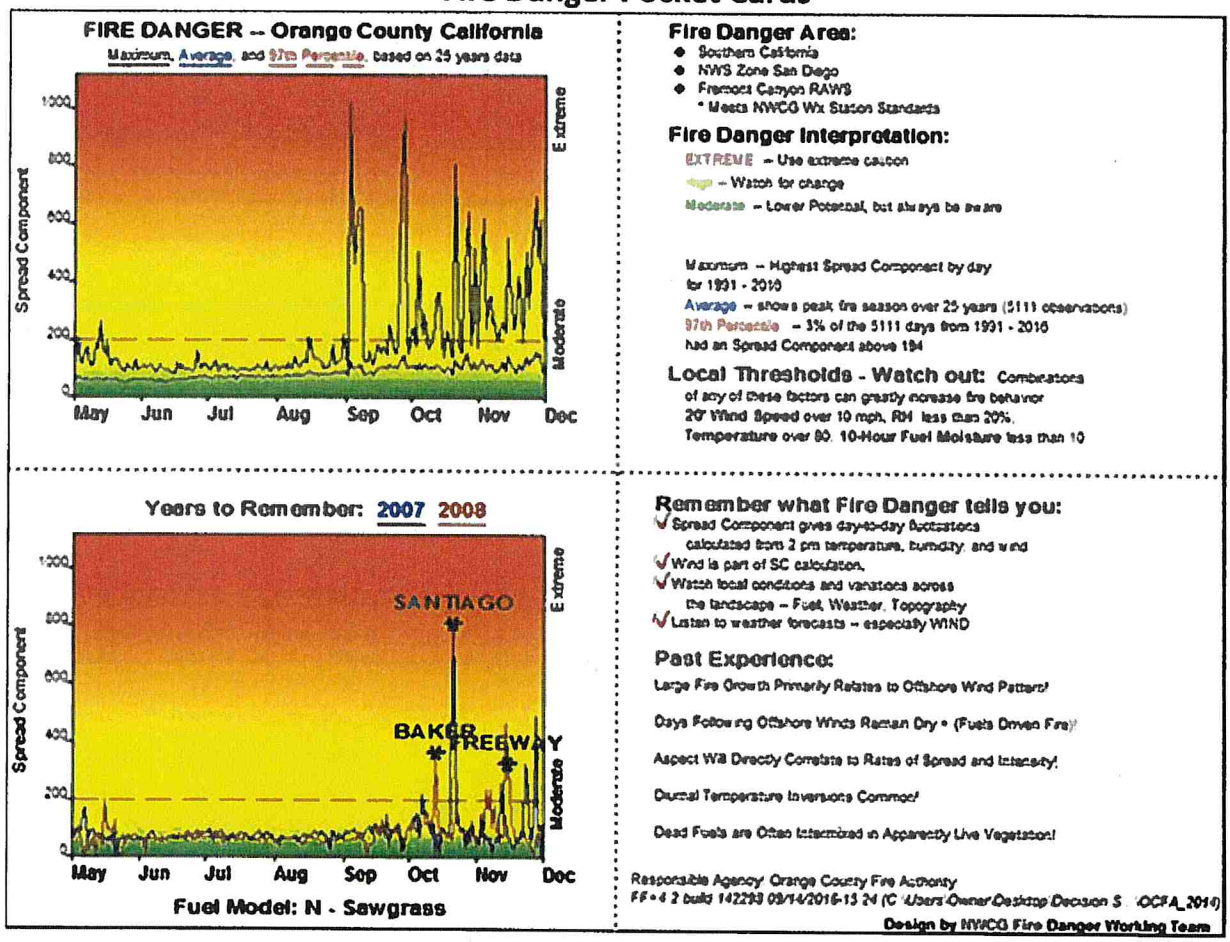
OCFA's Fire Danger Communications Plan - Internal, Partner & Public

- **Fire Danger Rating Signs:** OCFA and selected partner agencies will communicate Fire Danger Ratings to the public, via Fire Danger Rating Signs at various locations throughout the County using both the adjective descriptor and the associated color whenever possible.
    - Additional effective methods for communicating fire danger will also be explored and used as appropriate.

- **OCFA & Partner Firefighting Agencies:** OCFA ECC will announce the Watershed Dispatch Level via radio on the primary dispatch frequency at 0800 hours each day to provide enhanced situational awareness during fire season to OCFA Operations personnel and our partner agencies.

- **Fire Danger Pocket Cards:** The FDOP coordinator will ensure that Fire Danger Pocket Cards are prepared and distributed to all local and incoming interagency firefighters and Incident Management Teams (IMT). In the event of a fire within Orange County, we will use both printed cards, and also place it online, on OCFA's intranet. Also, fire suppression supervisors will use the Pocket Cards to train and brief suppression personnel.

Fire Danger Pocket Cards



- **Non-Fire Agency Partners:** A number of non-fire agencies maintain a variety of fire danger rating signs at locations within Orange County, including at most County Parks. These signs are intended to raise public awareness of fire danger in a simple, easy to communicate form, and are used as a tool to support wildland fire prevention efforts. A method of providing these agencies with the forecasted adjective level will need to be researched and implemented to ensure a consistent message to the public across all agencies.

- **General Public:** Various media outlets (i.e. print, radio/TV, social media, etc.) may also be useful to communicate fire danger to the public, especially during times of High, Very High, or Extreme fire danger, when weather conditions (i.e. Santa Ana winds) often contribute to the development of a large fire. A suggested complement to the media methods noted above is to create daily online access to the Fire Danger Rating announcement (i.e. banner, widget, applet, etc.) on OCFA's public website homepage.

OCFA FIRE DANGER OPERATING PLAN

SECTION 1: INTRODUCTION

This Fire Danger Operating Plan (FOOP) is designed to help guide the application of the National Fire Danger Rating System (NFDRS) at the local level. It will provide a framework for a consistent thought process by Orange County Fire Authority (OCFA) agency administrators, fire managers, dispatchers, and firefighters, and is based on scientific methods for analyzing and evaluating historical fire and weather data to determine accurate predictors of fire danger. For reference, fire danger is defined as the likelihood that an ignition source will cause a fire that requires suppression action by the responding agency. Management decisions dealing with dispatch levels and staffing levels are assessed based on vegetation, climate, and topography, in conjunction with NFDRS modeling.

This plan addresses the two historic Fire Danger Rating Areas (FORAsL which include the Orange County Coastal/Inland FORA and the Santa Ana Mountain FORA. These two FDRAs have been in use for a number of years and have served to provide a basic separation of the two distinct climatic, topographic, and fuel profiles within Orange County. However, the need for a third FORA was recently identified.

Consequently, the OC Coastal FORA was split from the Coastal/Inland FORA this year. This was done to match the newly created Orange County Coastal Forecast Zone implemented by the National Weather Service Forecast Office in San Diego, CA and to provide a better reflection of fire danger in the areas along the coast. Creation of this new FORA was made possible by the installation of a new Remote Automated Weather Station in the Aliso Laguna area. As this plan is reviewed and updated, weather data collected from this new site will be utilized to set fire danger rating levels for the new FORA.

This plan provides decision support information and helps to quantify elements that establish agency planning and response levels. Additionally, procedures for developing seasonal risk analysis and fire severity decision points are outlined, along with the implementation and analysis processes of this plan.

SECTION 2: OBJECTIVES

The objectives of this Fire Danger Operating Plan are to:

- Provide a tool for OCFA administrators, fire managers, dispatchers, agency cooperators, and firefighters to correlate fire danger ratings with appropriate fire business decisions.
- Define roles and responsibilities to make fire preparedness decisions, manage weather information, and brief fire suppression personnel regarding current and potential fire danger.
- Maintain a fire weather-monitoring network consisting of Remote Automated Weather Stations (RAWS), which comply with NFDRS Weather Station Standards (PMS 426-3}.
- Develop and distribute Fire Danger Pocket Cards to all personnel involved with fire suppression activities within the Orange County Fire Danger Rating Areas.
- Delineate Fire Danger Rating Areas (FDRAs) in Orange County having similar climate, fuels, and topography.
- Analyze seasonal risks and develop criteria to establish general fire severity thresholds.
- Determine fire business thresholds using the Weather Information Management System (WIMS), National Fire Danger Rating System (NFDRS), FireFamilyPius software, and by analyzing historical weather and fire occurrence data.
- Determine the most effective communication methods for fire managers to communicate potential fire danger to cooperating agencies, industry, and the public.
- Identify program needs and suggest improvements for the Fire Danger Operating Plan.
- Meet the requirements of the Annual Operating Plan (AOP) agreement between OCFA and the California Department of Forestry and Fire Protection (CAL FIRE).

Section 3: Overview

Orange County Fire Authority

The Orange County Fire Authority is an all-risk response agency and is fully staffed for emergencies of all natures regardless of time of year, month or day. During periods when local preparedness levels are high to extreme, fire management officers strive to staff resources at response levels appropriate with the risk. This may require pre-positioning or augmenting suppression staffing levels and resources, and can require OCFA fire managers to request out-of-unit resources or support personnel throughout the fire season, in accordance with Appendix J of the Annual Operating Plan (AOP).

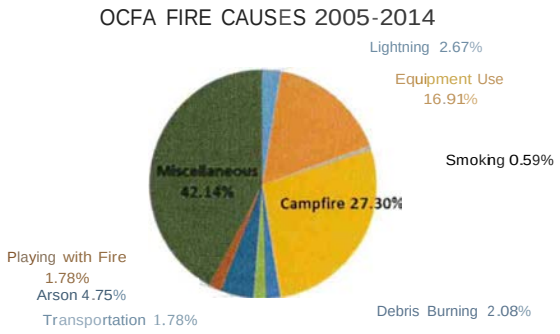
FDOP Fire Weather Data

To develop this plan, wildland fire occurrences within Orange County were identified and used to determine the appropriate fire danger indices to best predict when individual and large fires are likely to occur. Only vegetation fires were included from 2005 - 2014, which totaled 337 fires that were either in, or that threatened Orange County. On average, there were 34 fires per year, with an annual high of 46 in 2009 and an annual low of 26 in 2013. The highest fire occurrence months were July (58), May (43), August (43), and June (40).

Orange County Fire History

From 2005- 2014, 97% of Orange County Fires were human-caused, including:

- 42% - Miscellaneous Mishaps
- 27 % -Campfires
- 17%- Equipment Use
- 5%- Arson



Fire Data

Fire data was obtained from the FAM-WEB fire weather data system and the National Interagency Fire Management Integrated Database (NIFMID), via Kansas City Fire Access Software (KCFAST). FireFamilyPius software was then used to create statistics and graphs.

Fire Data Quality Issues

Due to human and mechanical errors, some data had to be edited or omitted in order to keep the statistical analyses representative of the geographic regions. If all necessary attributes of an ignition were not obtainable when cross-referencing the data, fires were eliminated from the database. This had to be done because incomplete data would negatively affect the statistical analysis.

Prevention

Through a progressive Pre-Fire Management section, OCFA has a number of prevention initiatives in place, including Defensible Space Inspections, road and fuel break installations and maintenance, signage, plus community outreach and education. With a focus on preventable fires, OCFA will continue to improve and deliver programs and information to keep fire prevention at the forefront of the public.

Section 4: Tools, Processes & Roles

At its core, this plan outlines how designated data thresholds trigger leveled resource and communication responses, plus it calls out who is responsible for various components. The key tools and processes used to develop this plan are outlined below:

Fire Danger Rating Areas (FORA's)

A Fire Danger Rating Area (FDRA) is a geographic area, relatively homogenous in climate, vegetation and topography. It can be assumed that the fire danger within a region is relatively uniform. Historically, Orange County has had two FORA's, including the Orange County Coastal/Inland FDRA and the Santa Ana Mountains FDRA.

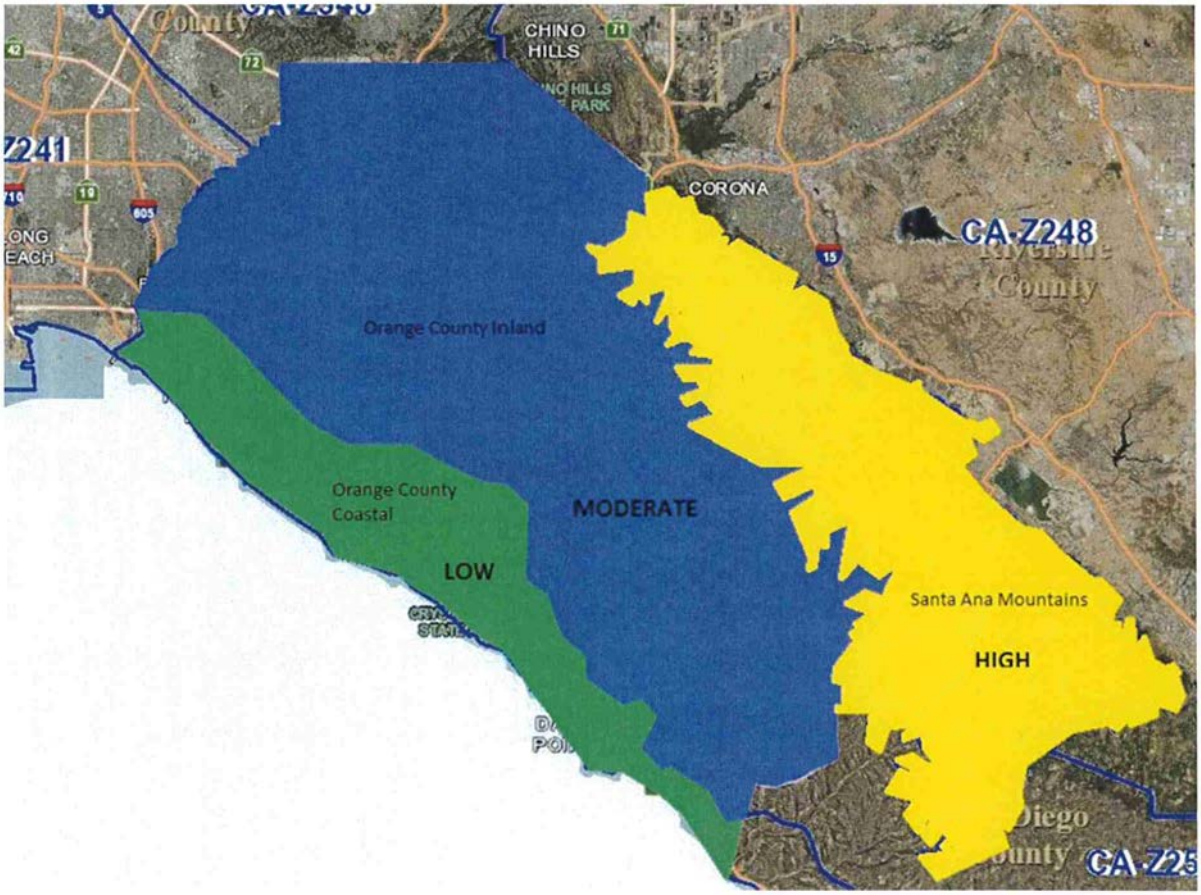
Through the efforts of the County of Orange Area Safety Task Force (COAST), the National Weather Service added a third forecast zone for Orange County, the Coastal Zone, in 2015. Subsequently, through a cooperative effort between OCFA, Orange County Parks and San Diego Gas & Electric, an additional Remote Automated Weather Station (RAWS) was acquired and installed in the Aliso Laguna area in July, 2016. This has permitted the split of the Orange County Coastal/Inland FDRA into two FORA's, now known as the Orange County Coastal FDRA and the Orange County Inland FDRA.

In the future, this will permit a more accurate representation of fire danger for the Orange County coastal areas. The previous combination of these areas resulted in Adjective Fire Danger Ratings and Watershed Dispatch Levels for the coastal areas that were not consistent with local weather conditions, or the intent ofthe FDOP.

The boundaries for each FDRA were determined using the following process:

- Predefined fire weather zones were obtained from the National Weather Service (NWS) to help distinguish existing fire weather zones in Orange County.
- NWS fire weather zones were adjusted to meet specific criteria for the purposes of this plan and to correspond to the fuels, topography, and weather conditions of the region.
- The zones were then adjusted to accommodate operational realities and limitations.
- These FDRA boundaries were later synced to OCFA's Direct Protection Area (DPA). OCFA's responsibility areas as a Contract County for CAL FIRE were also incorporated.

Orange County's 3 FORA's



Remote Automated Weather Stations (RAWS)

Each FORA has a weather station that provides weather information for that geography. In addition to the Fremont Canyon and Bell Canyon RAWS, and the newly installed Aliso Laguna RAWS, two adjoining RAWS that are close enough to be useful for future data analysis are El Cariso (Riverside County) and Tonner Canyon (Los Angeles County) . However, for this analysis, only data from Fremont Canyon and Bell Canyon were used, as these stations are owned by OCFA and are within the boundaries of the corresponding FORA. The determination of what RAWS station to collect fire weather data from was based on its proximity and situation in the FORA as follows:

- The Fremont Canyon RAWS station sits within the Santa Ana Mountains FORA and was deemed representative of that geographic region.
- The Bell Canyon RAWS station sits closest to the Orange County Inland FORA, and was determined to be representative of that geographic region.
- Sufficient weather data is not yet available from the Aliso Laguna RAWS due to its recent installation, but it will be included in subsequent years once enough data is collected to support the Orange County Coastal FORA.

Future review of this plan and the associated data may indicate that inclusion of bordering RAWS data (i.e. El Cariso and/or Tonner Canyon) provides better statistical data for analysis that results in a more accurate and discrete determination of the Fire Danger Adjective Ratings. This may also be necessitated by changes in Direct Protection Areas (DPAs) negotiated with CAL FIRE and the US Forest Service.

RAWS Maintenance

All RAWS stations, regardless of ownership, are maintained to a national standard and the data is made available for inter-agency applications. The Orange County Fire Authority is responsible for scheduling maintenance of the RAWS station sensors with the Bureau of Land Management's Remote Sensing Fire Weather Support Unit (RSFWSU), located at the National Interagency Fire Center in Boise, ID.

RAWS Data Summary Table

Station ID	Station Name	Status	Agency/ Owner	Data Years***	Elevation	Reporting Time	Latitude	Longitude
045735 (RAWS)	Bell Canyon	Active	OCFA	1993-2015 (WIMS)	764'	1300 hours	33.55167	-117.57294
045736 (RAWS)	Fremont Canyon	Active	OCFA	1991-2015 (WIMS)	1750'	1300 hours	33.81111	-117.70833

***Some years are excluded from the 'Data Years' category due to a lack of observations. This may be attributed to station malfunction or poor quality control.

ECC's Role

OCFA's Emergency Command Center (ECC) has primary responsibility for implementing this Fire Danger Operating Plan in terms of resource deployment, which involves Fire Communications Dispatchers, ECC Supervisors, the EOC Staff Captain, and the ECC Battalion Chief. In addition, as illustrated in the chart below, ECC, along with the Duty Chief, also has the responsibility of managing and editing daily weather observations, used for rating daily fire danger levels, from the Fremont Canyon and Bell Canyon RAWS stations, as required by the Weather Information Management System (WIMS). Note that in the future, if video cameras that provide visual coverage of areas near the RAWS stations become available, these may be utilized by ECC personnel to assist in determining the state of the weather for the 1300-hour WIMS observation.

Weather Information Monitoring Systems (WIMS)

Weather Information Management System (WIMS) is a centralized weather data processing system, where daily fire danger ratings are produced for each of Orange County's three FDRAs, which impacts staffing levels. The following chart outlines the information flow:

Resource Deployment Information Flow

RAWS Data *Remote Automated Weather Stations (3 in Orange County)*	WIMS *Weather Information Management System*	Watershed Dispatch Level *Dictates Staffing & Resource Levels*	Possible Modifications *Per Weather Conditions or Fire Activity Levels*	ECC's Initial Attack Response *If a fire happens*
*Each OCFA RAWS, including Fremont Canyon, Bell Canyon, and Aliso Laguna, supports an OC Fire Danger Rating Area (FDRA), which are based on NWS zones, and possess relatively uniform fire danger.	WIMS is a centralized weather data processing system, where daily fire danger ratings are produced that impact staffing levels.	Watershed Dispatch Levels (WSDL) are determined by WIMS indices forecasts.	OCFA's Duty Chief can modify WSDL's for each OC FDRA, with coordination from ECC.	For purposes of resource dispatching, the highest forecast at 1600 or later determines staffing levels for all OCFA for the following day and is effective for 24 hours from 0800 – 0800.

**Only the Bell Canyon and Fremont Canyon RAWS were used for this plan, since Aliso Laguna is new.*

Data Quality

Data entry into WIMS is required on a daily basis for the NFDRS decision support tool to function properly. Through the process of the FDOP analyses, it is clear that there have been data entry issues in the past, due to missing data and data inconsistencies. However, measures will be instituted to prevent this from occurring in the future.

Fire Business Thresholds and Climatic Breakpoints

A "*Breakpoint*" is a threshold which corresponds to a change in historical fire activity. "*Preparedness Levels*" differ from "*Adjective Fire Danger Ratings*" because they take fire history into account, in addition to weather data. For this plan, FireFamilyPlus software was used to establish the fire business Breakpoints. A statistical analysis, based on historical weather, and adjusted for fire activity, determined the appropriate staffing index and associated Breakpoints for each FDRA.

WIMS Weather Station Catalogs

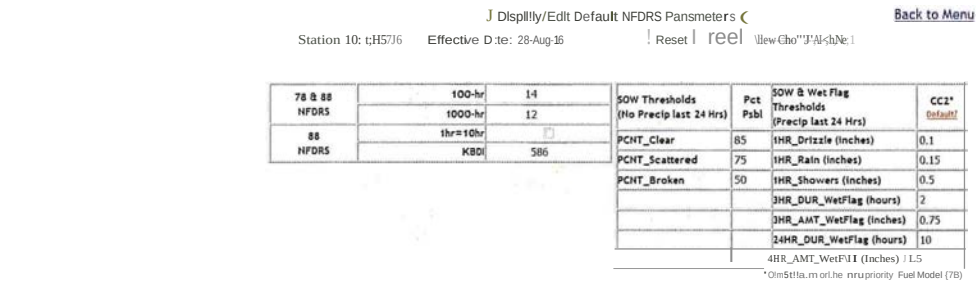
A Weather Station Catalog is a component of WIMS, which tells the NFDRS processors the characteristics of the station. For example, the table below displays the station catalog information for the three RAWS owned by OCFA:

OCFA RAWS Station Catalog Information

Catalog Information	*Aliso Laguna (New)*	Bell Canyon	Fremont Canyon
WIMS ID	045509	045735	045736
Average Precipitation	14.00"	14.00"	14.00"
Latitude	33.5359694	33.55183	33.81114
Longitude	-117.7533611	-117.57294	-117.70836
Aspect	Flat (South)	Flat (South)	Flat (South)
Elevation	866'	764'	1750'
Site	Ridgetop	Ridgetop	Ridgetop
Time Zone	PST	PST	PST
Observation Time	1300	1300	1300
FDRA	OC Coastal	OC Inland	Santa Ana Mountains

WIMS Station Catalogs need to be updated annually to reflect the staffing level Breakpoints and to properly calculate adjective class. The following screen capture displays the information that personnel adjust for the Fremont Canyon RAWS:

WIMS Station Catalog Screen



J Displlily/Edlt Default NFDRS Pansmeters (Back to Menu

Station 10: t;H57J6 Effective D:te: 28-Aug-16 ! Reset I reel \llew-Cho"'J'Al-<hNe;1

78 & 88 NFDRS	100-hr	14
	1000-hr	12
88 NFDRS	1hr=10hr	☐
	KBDI	586

SOW Thresholds (No Precip last 24 Hrs)	Pct Psbl	SOW & Wet Flag Thresholds (Precip last 24 Hrs)	CC2* Default?
PCNT_Clear	85	1HR_Drizzle (inches)	0.1
PCNT_Scattered	75	1HR_Rain (inches)	0.15
PCNT_Broken	50	1HR_Showers (inches)	0.5
		3HR_DUR_WetFlag (hours)	2
		3HR_AMT_WetFlag (inches)	0.75
		24HR_DUR_WetFlag (hours)	10
		4HR_AMT_WetF\II (Inches) J L5	

*Olm5t!!a.m orl.he nru priority Fuel Model (7B)

Del	Pri	ID	** 78 NFDRS Only ** HS	Herb Date	Greenup Date	88 sb	Slp	Grs	Cli	Herb FM	Woody FM	X-1000	Staffing Idx Breakpoints SI	DC	Low SI%	Low Val	High SI%	High Val
☐	1	7B	C	02-Dec-15	14-Jan-16		3	A	2	9	93	11	BI	5	90	54	97	140
☐	2	7A	C	02-Dec-15	12-Apr-16		3	A	2	9	93	11	BI	5	90	30	97	45
☐	3	7T	C	02-Dec-15	12-Apr-16		3	A	2	9	93	11	BI	5	90	50	97	60
☐	4	7G	C	02-Dec-15	14-Jan-16		3	A	2	9	93	11	EC	5	90	60	97	65

National Fire Danger Rating Systems (NFDRS)

The purpose of NFDRS is to rate relative fire danger as a worst-case scenario for a given Fire Danger Rating Area. Orange County is unique in its complexity of weather, fuels and topography, so a concerted effort was made to account for these complexities with the goal of providing a baseline for decision-making. It is important to note that each FORA has areas that will be well represented by its fire danger indices.

Historical Fire Perspective

Looking at all available fire occurrence data in Orange County, each of the largest fires have been a function of fuels, topography, and climate. With respect to NFDRS indices, however, large fires in Orange County are highly dependent on wind activity. Previous data analysis revealed that the largest fires in Orange County occurred not as a function of the Burning Index, but rather due to low 10-hour fuel moistures and high wind gust speeds. Therefore, it is important to recognize and take into consideration the role of wind activity, in conjunction with fuels, topography, and climate, as a driver of large fires in Orange County.

NFDRS Fire Danger Index Definitions

The following list represents the array of NFDRS indices that are used to quantify fire danger:

- *Spread Component* (SC) is a rating of the forward rate of spread at the head of the fire. It is projecting the potential rate of a fire's spread at its head, in feet per minute, under the assumed weather, fuels, and topographic conditions associated with the fire danger rating area. Spread component is a highly sensitive index that accounts for live and dead fuels, and is highly dependent on wind.

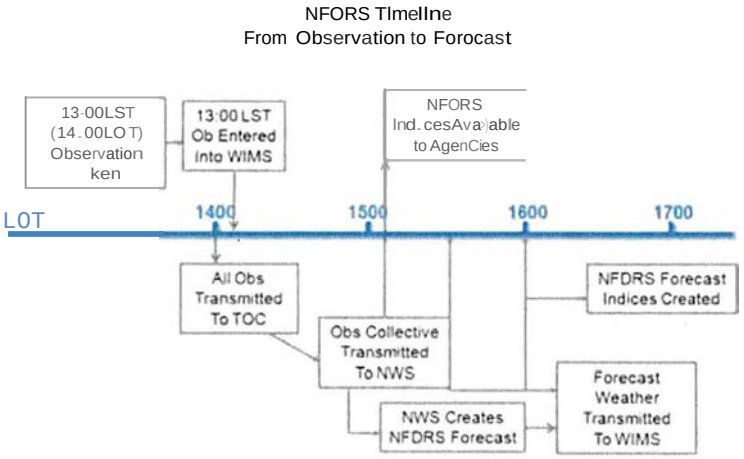
- *Energy Release Component* (ERC) is a number related to the available energy in British Thermal Units (BTU) per unit area (sq. ft.) within the flaming front at the head of the fire. It evaluates the contribution of various fuel loadings represented mathematically in the NFDRS Fuel Models. ERC is utilized for modeling preparedness levels because it is a trending index, which depicts seasonal conditions well.

- *Burning Index* (BI) is a number that relates the contribution of a fire's behavior in containing the fire. Containment difficulty directly relates to fire line intensity (BTU/ft./sec). This is the heat release along the fire perimeter at its head. BI is an index that rates fire danger related to potential flame length over a fire danger rating area. This index is ideal to use when determining dispatch and staffing levels due to its moderate sensitivity. Since BI is a combination index that takes into account ERC and SC, it is very good for determining variation during the day. The nature of BI makes it suitable for many different geographic locations and is a universal index.

- *Ignition Component* {IC} is an expressed probability that a firebrand will cause an actionable fire that requires suppression action. Ignition component is analogous to probability of ignition, but takes into consideration small amounts of wind.

Since the greatest risk of large fires within Orange County has historically been tied to higher wind speeds, Spread Component (SC), in the "N" Fuel Model, has been determined to be the best NFDRS index that statistically correlates to fire spread. Spread Component's sensitivity to wind also matches well with weather conditions that drive the development of large fires within Orange County

NFDRS Observation Processing Timeline



Note: Fire weather forecasts are developed by the National Weather Service daily and are available to the Orange County Fire Authority.

Watershed Dispatch Levels

The Watershed Dispatch Level (WSDL) is a three-tier (Low, Medium & High) system that will be based on the Staffing Level in WIMS. For reference, several procedures and guidelines, based the Watershed Dispatch Level, are detailed in the OCFA Standard Operating Procedures and the Annual Operating Plan (AOP) Appendices A and J. The Breakpoints for the Staffing Levels were set using a historical analysis of fire business and its relationship to Spread Component (SC) in the "N" Fuel Model using FireFamilyPius, since the Spread Component index provides the best response to weather conditions when determining the Watershed Dispatch Level and Fire Danger Adjective Rating level.

Watershed Dispatch Levels (WSDL)

Areas				Index Breakpoints (WSDL)			
FDRA	RAWS	Fuel Model	NFDRS Index	Low	Medium	High	*High
				SL 1, & 3	SL 4	SL 5	*SL
Santa Ana Mountains	Fremont Canyon	7N	SC	0-69	70-137	138-187	188+
Orange County Inland	Bell Canyon	7N	SC	0-65	66-130	131-151	152+
Orange County Coastal	Aliso Laguna	TBD	TBD	TBD	TBD	TBD	TBD

*Indicates 97th percentile day, most likely Red Flag conditions. Consider augmented staffing, based on Duty Chief's direction and Appendix J.

WIMS calculates the Staffing Level based on the inputs from the daily RAWS observations:

- WIMS Staffing Levels of 1, 2, and 3 will be considered a "Low" Watershed Dispatch Level
- A WIMS Staffing Level of 4 (90th percentile SC) will be considered a "Medium" Watershed Dispatch Level
- A WIMS Staffing Level of 5 (97th percentile SC) will be considered a "High" Watershed Dispatch Level

Each FDRA's Watershed Dispatch Level is determined independent of the other FDRAs. Differences in weather conditions may result in different Watershed Dispatch Levels in each FDRA on the same day, such as the Coastal FDRA can be in a "Low", while the Santa Ana Mountain FDRA is in a "High". For purposes of resource dispatching, the highest Watershed Dispatch Level of the three FDRAs will be utilized for OCFA as a whole.

OCFA ECC personnel will utilize the Watershed Dispatch Level to assign initial attack resources in accordance with Appendix A of the Annual Operating Plan agreement, approved by CAL FIRE and OCFA. Appendix A dictates the amount and type of suppression resources dispatched to a reported wildland fire based on the WSDL. During periods of actual or forecasted "High" WSDL days, or during a Red Flag Warning, additional resource staffing and response augmentation may be utilized in accordance with Appendices A and J of the AOP. Please note that a Red Flag Warning can only be issued by the National Weather Service.

Adjective Fire Danger Rating

The Adjective Fire Danger Rating will be used by OCFA to inform the public of the current level of fire danger in Orange County. Adjective Fire Danger Ratings are calculated by the NFDRS processor using the previously referenced weather inputs and selected fuel models. These ratings describe fire danger conditions over a large geographic area and reflect the potential for a fire to ignite and spread. There are five fire danger levels, which include Low, Moderate, High, Very High, and Extreme. In addition to the adjective descriptor, each level is also represented visually by a different color, starting at the lower end with green, blue and yellow, and then elevates to orange and red, respectively, as detailed in the table below:

NWCG Adjective Fire Danger Ratings

Value	Color	Description
Low (L)	Green	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting
Moderate (M)	Blue	Fires can start from most accidental causes but, with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H)	Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless are attacked successfully while small.
Very High (VH)	Orange	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics, such as long-distance spotting and fire whirlwinds when burn into heavier fuels.
Extreme (E)	Red	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions, the only effective and safe control action is on the flanks until the weather changes or the fuel lessens.

Duty Chief Role

The Orange County Fire Authority Duty Chief, which is an assignment that rotates weekly between OCFA Division Chiefs, provides input and guidance regarding preparedness and response levels. Specifically, the Duty Chiefs responsibilities under this plan are to:

- Collect and distribute the daily Fire Danger Rating Adjective Level as required by this plan.
- Receive, evaluate, and if necessary, modify the Watershed Dispatch Level, noting that modification of the Watershed Dispatch Level must be coordinated with the OCFA Emergency Command Center (ECC).
- Confirm the daily fire weather forecasts, including NFDRS indicesare retrieved and that the Adjective Fire Danger Rating and Watershed Dispatch Levels are determined at least once daily, then distributed and stored.
- Ensure the timely editing of the 1300-hour weather observations of all OCFA-owned weather stations.
- Keep OCFA management and staff updated of changes to the Watershed Dispatch Level during fire season as appropriate.

Section 5: Communications

OCFA's Fire Danger Communication Plan is based on the Adjective Fire Danger Rating, which is calculated by the NFDRS processor, using weather inputs and selected fuel models for each of the three Orange County FDRA's, as illustrated in the table below:

Communication Plan Information Flow

Weather + Fuel Model Inputs →	NWS →	NFDFRS Indices →	Adjective Fire Danger Rating →	OCFA Communication Plan
	NWS Fire Weather forecasts are distributed daily	Selected indices correlate to each FDRA's characteristics and quantifies its Fire Danger	Calculated by a NFDRS processor	As outlined in this plan

Published Adjective Fire Danger Rating values will be set according to the forecast derived from WIMS and will be assigned to each FDRA independent of the other FDRAs. In other words, each FDRA will have its own Adjective Fire Danger Rating and associated color indicated on any sign, map, banner, widget, applet, etc. that is posted within, or on behalf of that FDRA to communicate the Fire Danger Rating to the public.

Internal, Partner & Public Fire Danger Communications Plans

Fire Danger Rating Signs

OCFA and selected partner agencies will communicate Fire Danger Ratings to the public, via Fire Danger Rating Signs at various locations throughout the County using both the adjective descriptor and the associated color whenever possible. Additional effective methods for communicating fire danger will also be explored and implemented as appropriate.

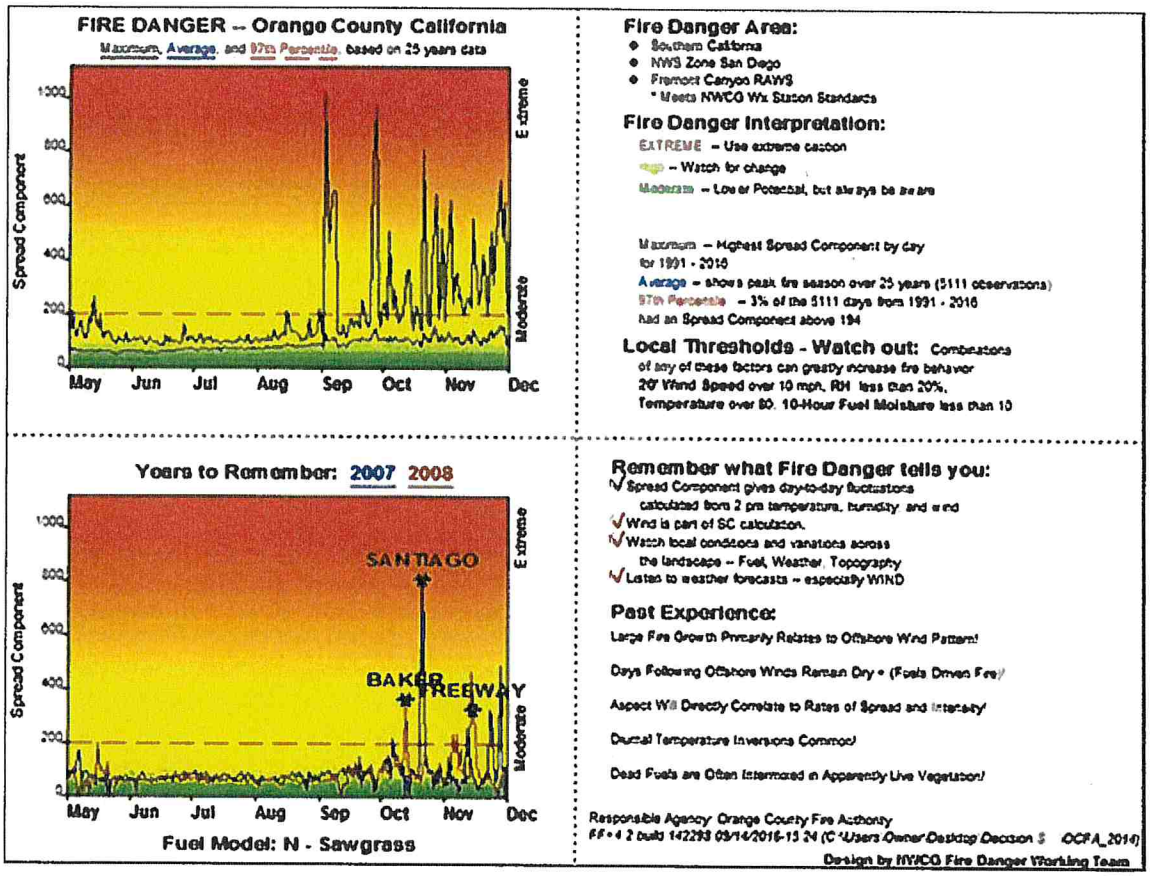
OCFA & Partner Firefighting Agencies

ECC will announce the Watershed Dispatch Level via radio on the primary dispatch frequency at 0800 hours each day to provide enhanced situational awareness during fire season to OCFA Operations personnel and our partnering agencies.

Fire Danger Pocket Cards

The FDOP coordinator, who is the Wildland Resource Planner in OCFA's Pre-Fire Management section, will ensure that Fire Danger Pocket Cards are prepared and distributed to all local and incoming interagency firefighters and Incident Management Teams (IMT). In the event of a fire within Orange County, we will use both printed cards, and will also place it online on OCFA's intranet. Additionally, fire suppression supervisors will use the Pocket Cards to train and brief suppression personnel.

Fire Danger Pocket Cards



Non-Fire Agency Partners

A number of non-fire agencies maintain a variety of fire danger rating signs at locations within Orange County, including at most County Parks. These signs are intended to raise public awareness of fire danger in a simple, easy to communicate form, and are used as a tool to support wildland fire prevention efforts. A method of providing these agencies with the forecast adjective level will need to be researched and implemented to ensure a consistent message to the public across all agencies.

General Public

Various media outlets (i.e. print, radio/TV, online, social media, etc.) may also be useful to communicate fire danger to the public, especially during times of High, Very High, or Extreme fire danger, when weather conditions (i.e. Santa Ana winds) often contribute to the development of a large fire. A suggested complement to the media methods above is to create daily online access to the Fire Danger Rating announcement (i.e. banner, widget, applet, etc.) posted on OCFA's public website homepage.

Section 6: Methodology

Fire Weather Station Analysis Summary

Regression analysis was performed using FireFamilyPlus to statistically determine which combination of weather station observations, NFDRS fuel models, and NFDRS index best correlates to historic fire

occurrence (individual fire occurrence, large fire occurrence, and multiple fires per day occurrence) for the Inland/Coastal FORA and Santa Ana Mountains. Both RAWS were considered. Data were then run in the FIRES analysis with all 20 NFDRS fuel models for Burning Index (BI), and Spread Component (SC}. The FIRES analysis uses logistic regression to relate models and indices with fire occurrence by reviewing:

Chi-square: The chi-square value provides a way to quantify the visual graphs and models created in FireFamilyPius. It serves as the //goodness of fit" of the data points. A chi-square value less than 13 is considered to be best, less than 20 is good, and anything over 26 is not acceptable.

R-square: The R-squared value is used to describe how well a regression line fits a set of data. The closer the R-squared value is to one, the better. It is a way to measure how well the applied model can predict future outcomes.

Distribution of data in the Orange County Inland/Coastal and Santa Ana Mountains FDRAs: Burning Index (BI) and Spread Component (SC) were used when considering the //goodness of fit" of data for both FDRAs for fire seasons from 1991-2015. The constraints used in this analysis consisted of RAWS weather data from the same years. For analysis purposes, large fires were defined as fires over 10 acres and multi-fire days were defined as days with two or more fires. ***Analysis proved that Spread Component (SC) best correlated with fire danger levels within Orange County.***

The statistics used were based on Fire Days for each FORA. The values were derived by comparing the number of Weather Days against the number of Fire Days. Running statistics on Fire Days gives a better idea of the appropriate fuel model to apply to the FORA rather than the statistics derived from Large Fire Days or Multi-Fire Days. It is preferable to consider more data than less data in analysis. Since both Large Fire Days and Multi Fire Days occur at a lesser frequency than Fire Days, there would be less data analyzed. Therefore, using Fire Days as the parameter for our statistics was appropriate.

The final fuel model chosen was based on the distribution of fire and weather data. It is important to recognize that one particular fuel model may not possess all favorable conditions. There is discretion involved when choosing the fuel model that best represents each FORA as a whole. After having adjusted for data that was inadequate for statistical analysis, every NFDRS fuel model was run against the dataset in order to determine which had the best statistical fit for our purposes. ***Both FDRAs proved to have been best represented by Fuel Model N.*** Although not an exact physical representation of the fuels in our FDRAs, it yielded a good correlation of fire and weather data over an appropriate continuum.

Limitations

The process of obtaining the necessary weather data required quality control. Due to human and mechanical errors, some data had to be edited or omitted in order to keep the statistical analyses representative of the geographic regions.

Fire data also required quality control. If all necessary attributes of an ignition were not obtainable when cross-referencing the data, fires were eliminated from the database. This had to be done as incomplete data would negatively affect the statistical analysis of the rest of the dataset.

New RAWS Station

Since the Aliso Laguna RAWS is new, no historical weather data is available. Once a significant amount of data has been collected, which would be a minimum offive years, with ten years being preferable, analysis

can be conducted and the determination made as to the appropriate fuel model and fire danger index to use in the application of this plan for the coastal areas.

SECTION 7: MOVING FORWARD

1. **NFDRS 2016 Changes:** There are a number of changes ahead within the NFDRS system. A complete retooling of the NFDRS is underway, with changes set to be phased in over the next few years. Of critical importance is the reduction in the number of fuel models used from twenty to five. Once implemented, this will require a re-analysis of weather and fire occurrence data to determine the best fuel model and fire danger index to use to meet the objectives of this plan. A comprehensive review and update of the plan will then need to be completed and published.

2. **Watershed Dispatch Level Determination Methodology:** This plan uses the forecast staffing level for the following day to determine the Watershed Dispatch Level. This method uses the 1300-hour observation only, in conjunction with weather forecast data from the National Weather Service, to provide a forecast for the following day. Another method for determining the Watershed Dispatch Level requires three additional observations to be taken daily and used to adjust the Watershed Dispatch Level dynamically throughout the day. The highest level of the measurements would then be used for resource deployment.

   In order to ensure the forecast-index method is meeting the intent of this plan, and the operational needs of OCFA, ECC staff will process three additional observations each day at 0800, 1000, and 1800 hours. The derived NFDRS staffing level for each FORA will be recorded each day for calendar year 2017. At the end of the calendar year, the data will be compared with the forecast-index values to determine if an adjustment needs to be made to the method used to determine the Watershed Dispatch Level.

3. **Plan Monitoring and Updating:** As is the case with any living document, this Fire Danger Operating Plan must undergo continuous reviews and updates to ensure the plan is functioning as needed to fulfill operational objectives. As this product is rolled out to the field, it will require input from responding field staff to validate the appropriateness of the decisions that are made throughout the season. Evaluations and reviews must be as objective as possible and address the problems with a given incident or administrative decision in an honest manner. Field staff will be asked to provide written feedback throughout the first year to refine the decision making process. When issues are identified and corrective actions taken, this plan should be updated to reflect the changes, ensuring the most current information is available. A "Plan Revisions" page is included at the beginning of this plan to track changes and updates.

4. **Weather Station Siting:** The Bell Canyon RAWS was identified as not providing a good representation of weather in the Orange County Coastal area. As noted, through the assistance of San Diego Gas & Electric and Orange County Parks, an additional RAWS was acquired and installed in Aliso Laguna in July 2016. This RAWS will eventually provide a solid set of weather data for incorporation into the FDOP.

A project is currently underway to utilize weather data gathered from a nearby Automated Surface Observing System (ASOS) station at John Wayne Airport as a basis for calculating fire danger thresholds. If successful, this data will be analyzed in FireFamilyPius to provide preliminary Fire Danger Rating Adjective Levels and Watershed Dispatch Levels for the Orange County Coastal FORA until a full set of data is available from the new RAWS in approximately five to ten years.

After implementation of this plan, it will be important to monitor fire occurrence and weather patterns to ensure the criteria utilized are still valid. It may prove necessary to relocate existing RAWS or to add additional RAWS to provide better weather data for updating the plan. Consideration to including weather information from RAWS immediately adjacent to our FDRAs in future weather analysis should also be given.

Weather Station Maintenance: It is important that each RAWS site receives regular maintenance. This maintenance should include sensor cleaning and calibration, sensor replacement as needed, and controlling site conditions that may affect the sensor accuracy (e.g. vegetation clearance). For the most efficient absorption of solar radiation to help power the equipment, the solar panel angle should be adjusted between seasons.

5. **WIMS & NFDRS Training:** WIMS and NFDRS training needs to be a priority for OCFA staff, especially for personnel who are charged with implementing or maintaining this plan. The ECC is the anchor point for the implementation ofthis Fire Danger Operating Plan. Fire Communications Dispatchers, ECC Supervisors, the DOC Staff Captain, the ECC Battalion Chief, and Executive Management will need to make WIMS and NFDRS training a priority. Further efforts should be made to identify candidates for the Advanced National Fire Danger Rating course offered at National Advanced Fire & Research Institute (NAFRI) in Tucson, AZ. This course is the final course in the NFDRS series, which provides the student with the tools needed to create and manage a NFDRS-based Fire Danger Rating Operating Plan.

6. **Quality Assurance and Analysis:** One of the largest hurdles in this analysis was assessing data quality and locating data anomalies. Fire occurrence and weather data will need to be continuously evaluated for quality and completeness. Regular statistical analysis should be performed to ensure both the fuel model and fire danger index selected for the various components of this plan are still valid, and if necessary, adjustments should be made to one or the other to provide an accurate determination of fire danger ratings and staffing levels.

References: Please note that the design and much of the wording of this plan and document is based on a number of Fire Danger Operating Plans throughout the United States, which have been utilized as templates for this plan. Many of the resources and information supporting this document have been referenced from online repositories of information.

Amendments and Updates: The subject of this plan is dynamic, and will require regular review and updates, occurring at least annually or as needed. Consequently, the Orange County Fire Authority will ensure that necessary amendments or updates to this plan are completed, approved by the Fire Chief, then published and distributed.

Signature Page

12/15/16

John R. Hawkins, Unit & Fire Chief
CAL FIRE & Riverside County Fire Department

12/20/16

Jeff
Orange County Fire Authority

Lori Smith, Assistant Chief & Fire Marshal
Orange County Fire Authority

Brian Norton, Wildland Pre-Fire Management Battalion Chief
Orange County Fire Authority

George Ewan, Wildland Resource Planner
Orange County Fire Authority