

Unified
County of Orange
and
Orange County
Operational Area



Emergency Operations Plan
August 2016

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I. Emergency Management Council and Operational Area Executive Board Letter of Approval

Orange County Operational Area Executive Board County of Orange Emergency Management Council

Representatives of Law Enforcement Mutual Aid, Police Chiefs' and Sheriff's Association, Fire and Rescue Mutual Aid, Fire Chiefs' Association, Public Works Mutual Aid, City Engineers and Public Works Directors Association, Orange County Board of Supervisors, Health Care Mutual Aid, City Manager's Association, League of Cities, County Agencies, School Districts, and Special Districts.

August 10, 2016

Members of the Operational Area
Members of the Board of Supervisors
County of Orange Department Heads
American Red Cross of Orange County
California Office of Emergency Services

Dear Orange County Emergency Response and Recovery Officials:

Herewith is presented the revised Unified County of Orange and Orange County Operational Area Emergency Operations Plan (EOP). This EOP is the foundation for the response operations from the County's and Operational Area (OA) perspective.

The County of Orange Emergency Management Council (EMC), which governs the County of Orange Emergency Organization, has approved and concurs with this plan. The Orange County Operational Area Executive Board has approved and concurs with this plan on behalf of the OA Members. This plan continues to enhance the County of Orange and Orange County Operational Area's response capabilities and includes: the Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), the Incident Command System (ICS) and the duties and responsibilities of the County and its departments in preparedness and response procedures. A copy of the Unified County of Orange and Orange County Operational Area Emergency Operations Plan may be obtained through the Orange County Sheriff's Department, Emergency Management Division.

This plan is a compilation of multiple public agencies, special districts, private partners and nonprofit organizations, all with disaster response interests. The County of Orange and Orange County Operational Area EOP is complemented by other plans, procedures and hazard-specific annexes developed to meet specific emergencies.

This plan is designed as a reference and guidance document. Its successful implementation is, as always, dependent upon the skills and abilities of the County participants. Continued revision and testing of this plan will ensure its viability and appropriateness in future events. We look to you as members of the County of Orange and Orange County's Operational Area Emergency Response Organization to assist in the ongoing process of program and capability improvement. Use of this plan when responding to the Emergency Operations Center and exercises will continue to enhance our ability to respond.

Sincerely,

County of Orange
Emergency Management Council
Chair

Sincerely,

Orange County
Operational Area Executive Board
Chair

Administrative Contact-Orange County Sheriff's Department-Emergency Management Division
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II. County of Orange Board of Supervisors Resolution

III. California Office of Emergency Services Letter of Acceptance

IV. Record of Changes

Date of Revision	Revision Description	Section or Component	Reviewed by	Revision Completed By
2014	Emergency Operations Plan revision to new template	County of Orange Emergency Operations Plan	EMC Sub-Committee and DAFN Working Group	Emergency Management Division
2014	Updated hazard assessment	Chapter 2, section 2.2 Hazard Assessment	EMC Sub-Committee and DAFN Working Group	Emergency Management Division
2014	Update reference to Disabilities and Access and Functional Needs laws and regulations	Throughout the Emergency Operations Plan	EMC Sub-Committee and DAFN Working Group	Emergency Management Division
2014	Updated hazard information and descriptions	Section 2.2.1 Aviation Accident and 2.2.19 Vector Control	Emergency Management Council	Emergency Management Division
3/2016	Emergency Operations Plan 2 year Revision	Complete County of Orange Emergency Operations Plan	EMC Sub-Committee	Emergency Management Division
4/2016	Combining the 2 EOP's, County and Operational Area EOP into 1 plan	Unifying and updating the new County of Orange and Orange County Operational Area EOP	EMC Sub-Committee, OCEMO and DAFN Working Group	Emergency Management Division
4/2016	Updating hazard descriptions (from Hazard Mitigation Plan)	Chapter 2 County of Orange Community Profile and Hazard Assessment	EMC Sub-Committee, OCEMO and DAFN Working Group	Emergency Management Division

V. Plan Distribution

The Orange County Sheriff' Department, Emergency Management Division (EMD) is responsible for developing, maintaining and distributing the County of Orange and Orange County Operational Area Emergency Operations Plan (County and OA EOP).

EMD will make the Unified County and OA EOP available to all county departments, OA jurisdictions, California Office of Emergency Services (Cal OES) and other partner organizations as necessary and upon request. An electronic version are available through WebEOC in PrepareOC. Additionally hard copies are available at the EOC and EMD staff have remote access to all plans and annexes.

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Chapter One: Introduction

1.1 EOP Purpose

The Unified County of Orange (County) and Orange County Operational Area (OA) Emergency Operations Plan (EOP) provides guidance and procedures for the County and the County as the OA to prepare for and respond to significant or catastrophic natural, technological or conflict-related incidents that produce situations requiring a coordinated response. It further provides guidance regarding management concepts, identifies organizational structures and relationships and describes responsibilities and functions of the emergency organization to protect life and property.

The plan incorporates and complies with the principles and requirements found in state and federal laws, regulations and guidelines. It is intended to conform to the requirements California's Standardized Emergency Management System (SEMS) as defined in Government Code Section 8607 (a) and the National Incident Management System (NIMS) as defined by Presidential Executive Orders for managing response to multi-agency and multi-jurisdictional emergencies. SEMS/NIMS incorporate the use of the Incident Command System (ICS), mutual aid, the operational area concept, multi-agency and inter-agency coordination.

1.2 Intended Audience

The intended audience of this EOP consists of County of Orange departments, elected officials, OA jurisdictions and private organizations representatives that are responsible for staffing positions within the County and OA Emergency Operations Center (EOC). This plan is also a reference for managers from other jurisdictions, state and federal government, and other interested members of the public. It is intended as an overview of emergency management in the County and the OA, and is not a detailed tactical document.

1.3 How to use the Unified County and OA Emergency Operations Plan

The plan provides readers with a description of the emergency organization and the process of preparing, responding to, and recovering from disasters. Use of the plan will differ according to the needs of the reader. All response personnel need to be familiar with the plan, although only a few will need all chapters. Most will focus their attention on the parts of the plan specific to their needs, roles and responsibilities. The plan provides the basis for developing jurisdiction and/or department-specific, detailed checklists and standard operating procedures.

By using this EOP appropriately, the County, OA jurisdictions and external representatives supporting the County and OA EOC should:

- Know each organization's responsibilities.
- Know how to perform their assigned functions.

- Avoid inefficiencies, duplications, and oversights in performing functions.
- Be able to coordinate effective response and recovery operations across organizations and jurisdictions.

1.4 Preparing, Responding and Recovering with the Whole Community Strategy

The County of Orange strives to incorporate the Whole Community perspective in its emergency planning. By planning for the Whole Community, complexities in the diversity in Orange County are assimilated into the County of Orange planning strategy.

Orange County's definition of disabilities and those with access and/or functional needs is as follows:

Populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to: maintaining independence and the ability to perform the activities of daily living, communication, transportation, supervision, and medical care. Individuals in need of additional response assistance may include those who have disabilities; who live in institutionalized settings; who are elderly; who are children; who are from diverse cultures; who have limited English proficiency or are non-English speaking; or who are transportation disadvantaged.

Having recognized the need to be inclusive in its emergency planning, the OA formed the Orange County Disabilities and Access and Functional Needs (DAFN) Working Group in 2011 to strengthen partnerships with the disability community and those with access and/or functional needs. This team includes representatives from county agencies, local jurisdictions and nonprofit organizations serving people with disabilities and those with access and/or functional needs in Orange County. This group's instrumental efforts have turned the OA towards more inclusive emergency planning for the Whole Community. This group reviewed the County and Operational Area Emergency Operations Plan in July 21, 2016 and provided valuable feedback.

In order to meet the unique needs of children in disasters, the OA formed the Kids in Disasters (KIDs) Working Group as a sub-committee of the DAFN Working Group. The mission of the KIDS working group is to engage public and private community, government and healthcare organizations and individuals to promote coordinated efforts and partnerships to ensure that infants' and children's needs are met before, during, and after disasters. Integrating children (0-18) into disaster planning requires special emergency preparedness and planning. Disasters have proven evident that children are vulnerable and require additional support during emergency situations, especially when displaced from their parents or guardians. The physical and psychological damage sustained by children can far outweigh the same effects inflicted on grown members of society, including children with disabilities and those with access and/or

functional needs. The KIDs Working Group will assist in identifying and supporting community programs that help meet the physical, medical, and mental health needs of children in disasters.

Furthermore, the County and OA are committed to maximizing compliance with the Americans with Disabilities Act and providing the best service to Orange County residents and visitors. As such, the County and Operational Area adheres to the guidelines outlined below:

- Disability will not prevent accessibility to services or facilities provided by the County.
- The County will not exclude or deny benefits of any sort based on a disability, access or functional need.
- The County will work to accommodate people with disabilities and those with access and/or functional needs in the most integrated setting possible.
- During all phases of disaster response, the County will make reasonable modifications to policies, practices and procedures, if necessary, to ensure programmatic and architectural access to all.
- The County will shelter people with disabilities and those with access and/or functional needs with their families, friends and/or neighbors as feasible in the most integrated setting possible.

1.5 Planning Assumptions

This plan has been developed on the basis of the following general assumptions:

- California Emergency Services Act requires the County Board of Supervisors to establish an OA to include all political subdivisions in the geographic area of the County which consists of the County, cities, special districts, and school districts. The OA is an intermediate level of the State emergency organization and provides coordination and communication between and with the political subdivisions and the State. The California Emergency Services Act also assigns the County responsibility for OA lead agency.
- If a disaster occurs in the unincorporated areas of the county or use of county resources are required or impacted, the Director of Emergency Services will direct and coordinate the County's response efforts, in conformance with its Emergency Services Ordinance.
- If a disaster occurs in more than one jurisdiction, the Operational Area Coordinator (OAC) will serve as the key decision-maker in the County and OA EOC by providing the direction and coordination necessary to accomplish the objectives specified in the OA Agreement and the responsibilities assigned to the OA Lead as specified in Title 19 California Code of Regulations Section 24096.
- County of Orange government is an OA jurisdiction and a separate entity from the OA. Although Orange County personnel operate the OA, the roles and responsibilities of those

individuals may be different whether they are acting under the auspices of the OA or the County of Orange.

- For the sake of emergency planning and coordination at the OA level, OA jurisdictions shall consider the County and OA EOC one and the same.
- The County and OA uses the precepts of the Incident Command System (ICS) as adopted in the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) in emergency response operations.
- The resources of Orange County will be made available to the OA and to all OA jurisdictions to help mitigate the effects of disasters and emergencies in the area.
- Mutual Aid Agreements and systems exist to support the emergency response agencies of the OA. These agreements are reviewed and updated on a regular basis.
- OA jurisdictions will commit their own resources to a reasonable degree before requesting mutual aid assistance from the OA.
- The OA will commit the resources from within the OA to a reasonable degree before requesting mutual aid assistance from the region or state levels.
- The OA may be called upon by the State to support emergency operations in other OAs. Activation of the appropriate sections of the OA emergency response organization will follow this EOP as it would for an emergency situation within the Orange County OA.
- The Unified County and OA EOP is not designed to address the recovery and subsequent resumption of the delivery of city and county department program services. Therefore, each County department and OA jurisdiction is expected to develop, publish, and maintain a department or jurisdiction continuity plan that addresses response, recovery, and resumption of department or jurisdiction functions.

1.6 Disclosure Exemptions

Portions of this document contain sensitive information pertaining to the deployment, mobilization, and tactical operations of the County, OA and OA jurisdictions in response to emergencies. Although the majority of this plan is available for public review, certain sensitive portions that include personal privacy information or information with significant implications on city, regional, state, or national security have been placed in attachments that are exempt from public disclosure under the provisions of the California Public Records Act §6254.

1.7 Promulgation and Approval

The Orange County Emergency Management Organization (OCOMO) and Emergency Management Council (EMC) Sub-Committee under direction of the Operational Area (OA) Executive Board¹, and the County of Orange Emergency Management Council, respectively, are

¹ The Operational Area Executive Board consists of the following individuals or representatives from the following organizations: Chair of the County Board of Supervisors; City Engineers/Public Works Association Director; Fire and Rescue Mutual Aid Coordinator; Fire

responsible for the development of the Unified County and OA Emergency Operations Plan (EOP), training and exercises.

The OA Executive Board and Emergency Management Council are responsible for the approval of the Unified County and OA EOP and includes representatives from organizations and County departments with emergency responsibilities and policy direction for the County and OA.

The OA Executive Board includes all jurisdictions who are signatories to the OA Agreement. It has authority over major policy issues, as determined by the Executive Board, including the adoption of and amendments to the OA Agreement and adoption of any OA fees.

The County of Orange Emergency Management Council has authority for the direction of the County's emergency organization; the coordination of the emergency functions of this County with all other public agencies, corporations, organizations, and affected private persons; and the preparation and implementation of plans for the protection of persons and property within this County in the event of an emergency. Any expenditures made in connection with such emergency activities, including mutual aid activities, shall be deemed conclusively to be for the direct protection and benefit of the inhabitants and property of the County of Orange.

The Unified County and OA EOP will be reviewed by all OCCEMO members, EMC Sub-Committee members, the Orange County Disabilities Access and Functional Needs Working Group, and organizations assigned a primary function in the County and OA emergency operations organization as defined in this EOP. OCCEMO, EMC Sub-Committee and other working groups will provide feedback on the content of the Unified County and OA EOP. Each department and organization is responsible for ensuring its willingness and preparedness to perform the functions assigned to it in this plan.

Upon completion of preliminary review and Operational Area Executive Board and Emergency Management Council approval, the EOP will be submitted to the California Office of Emergency Services (Cal OES) for review. Upon approval from Cal OES, the plan will be officially adopted and promulgated by the County Board of Supervisors.

Chief's Association; Law Enforcement Mutual Aid Coordinator; Independent Special Districts of Orange County; Health Care Mutual Aid Coordinator; Police Chief's and Sheriff's Association; City Manager's Association/League of Cities; Superintendents of Schools, Community Colleges, and School Districts; Environmental Management/Public Works Mutual Aid Coordinator.

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Chapter Two: Operational Area Profile and Hazard Assessment

2.1 Orange County Profile

The County of Orange was officially formed on August 1, 1889 and covers an area of 948 square miles, with surface water accounting for 159 square miles of the area and 789 square miles of it is land.

Thirty-four incorporated cities in the county are responsible for emergency planning within their jurisdictions. The County of Orange is responsible for the emergency planning of 205 square miles of unincorporated area and all county owned facilities and properties.

Orange County is bordered on the west by the Pacific Ocean, on the north by Los Angeles County, on the south by San Diego County, on the northeast by both San Bernardino County and Riverside County. The northern part of the County lies on the coastal plain of the Los Angeles Basin and the southern half lies on the foothills of the Santa Ana Mountains. Most of Orange County's population resides in one of two shallow coastal valleys that lie in the basin, the Santa Ana Valley and the Saddleback Valley. The coastal plain gently rises into the Santa Ana Mountains, which lie within the boundaries of the County and of the Cleveland National Forest.

The Santa Ana River is the County's principal watercourse. The San Gabriel River also briefly crosses into Orange County and exits into the Pacific on the Los Angeles-Orange County line between Long Beach and Seal Beach. Laguna Beach is home to the County's only natural lake, Laguna Lakes, which are formed by water rising up against an underground fault.

Surface transportation in Orange County relies heavily on several major interstate highways:

Interstate 5 (Santa Ana Freeway)	State Route 73 (San Joaquin Hills Transportation Corridor)
Interstate 405 (San Diego Freeway)	State Route 74 (Ortega Highway)
Interstate 605 (San Gabriel River Freeway)	State Route 90 (Imperial Highway)
State Route 1 (Pacific Coast Highway)	State Route 91 (Riverside Freeway)
State Route 22 (Garden Grove Freeway)	State Route 133 (Laguna Freeway)
State Route 39 (Beach Blvd.)	State Route 142 (Carbon Canyon)
State Route 55 (Costa Mesa Freeway)	State Route 241 (Foothill Transportation Corridor)
State Route 57 (Orange Freeway)	State Route 261 (Foothill Transportation Corridor)

Orange County is also famous as a tourist destination. The County is home to such attractions as Disneyland Resort and Knott's Berry Farm, sports teams like the Los Angeles Angels of Anaheim and the Anaheim Ducks, as well as sandy beaches for swimming and surfing, yacht harbors for sailing and pleasure boating, and extensive areas devoted to parks and open space for all types of recreation activities. It is also at the center of Southern California's Tech Coast, with Irvine being the primary business hub. There is also one military base, the Los Alamitos Joint Forces Training Base, located in in Orange County in the City of Los Alamitos.

2.1.1 Population and Demographics

As of January 2016, the California Department of Finance estimates Orange County's population as 3,147,655. Of those, about 124,014 live in the unincorporated areas of the County.² The latest data depicts a diverse community, as shown in Table 1 below.

Table 1 – Orange County Population by Race

Percentage of Total Orange County Population	
White alone, Not Hispanic or Latino	42%
Hispanic or Latino	35%
Asian, Not Hispanic or Latino	19%
Other	4%

Source: California Department of Finance

This diversity of the Orange County community emphasizes the need for effective communication during disasters for non-English speaking people. Roughly 45% of Orange County residents (over age 5) speak a language other than English at home, 20% speak English less than “very well” and 29.7% were born outside of the United States.³ In 2012, widely spoken languages other than English spoken in Orange County households included Spanish, Vietnamese, Korean, Chinese, Tagalog, Persian, Arabic and Japanese.⁴

In 2014, the U.S. Census Bureau estimated that 8.6% of the non-institutionalized population in Orange County was living with a disability. This percentage increases among the older population, with nearly 31% of the population 65 and older having some type of disability.

Table 2 – Orange County Disability Demographics

Population	0-4 years 191,517		5-17 years 529,348		18-64 years 2,000,063		65 + years 407,850	
Disability	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Hearing Difficulty	1,130	0.7%	2,625	0.5%	23,185	1.2%	50,483	12.4%
Vision Difficulty	723	0.4%	4,480	0.8%	24,639	1.2%	22,366	5.5%
Cognitive Difficulty	-	-	12,506	2.4%	49,374	2.5%	33,807	8.3%
Ambulatory Difficulty	-	-	2,336	0.4%	50,081	2.5%	78,443	19.2%
Self-Care Difficulty	-	-	4,504	0.9%	21,304	1.1%	33,886	8.3%
Independent Living Difficulty	-	-	-	-	62,606	2.2%	62,606	15.4%

Source: U.S. Census Bureau, Disability Characteristics, 2014 American Community Survey 1-Year Estimates

² E-1 Current Population Estimates - California Department of Finance. Retrieved October 15, 2015, from <http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php>

³ American Community Survey - SDC - Demographic Research - California Department of Finance. Retrieved August 15, 2015, from

http://www.dof.ca.gov/research/demographic/state_census_data_center/american_community_survey/

⁴ Languages Other Than English Spoken at Home (Orange County, 2012). Retrieved October 15, 2015, from <http://cpehn.org/chart/languages-other-english-spoken-home-orange-county-2012>

2.1.2 Employment and Industry

As of February 2015, roughly 50% of the Orange County workforce was employed by service industries (including Information, Professional and Business Services, Educational and Health Services, Leisure and Hospitality, and Other Services). Approximately 10% of the workforce was employed by the manufacturing sector and 10% were employed in the retail trades. The top employers in Orange County were the Walt Disney Company, The University of California, the County of Orange, St. Joseph's Health, Kaiser Permanente, and Boeing.⁵ As of July 2015, the unemployment rate in Orange County was 4.7%.⁶

Orange County hosts 42 million visitors annually.⁷

82% of the workforce commutes alone, 10% carpool and 3% use public transportation.⁸ The high mobility of employees commuting from surrounding areas to industrial and business centers creates a greater dependency on roads, communications, accessibility and emergency plans.

2.1.3 History of Disasters

Since 1953 Orange County has received 29 disaster proclamations including 21 Presidential Disaster Declarations, 3 Presidential Emergency Proclamations, and 5 Fire Management Assistance declarations. While the greatest recurring threat is flood and fire, the earthquake risk is an ever-present threat.

⁵ County of Orange Comprehensive Annual Financial Report - Principal Employers (2014). Retrieved October 15, 2015, from <http://ac.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=41026>

⁶ Labor Market Information. Retrieved August 15, 2015, from <http://www.labormarketinfo.edd.ca.gov/>

⁷ About OCVA. Retrieved September 15, 2015, from <http://www.visittheoc.com/maps-and-information/about-ovca/>

⁸ County of Orange. (2015). OC Community Indicators: 2015. Retrieved October 15, 2015, from <http://ocgov.com/civicax/filebank/blobdload.aspx?BlobID=45210>

Figure 1 – Orange County Federal Declared Disasters

Disaster Number	Year	Incident Type	Incident Title
DR-1952	2011	Flood	SEVERE WINTER STORMS, FLOODING, AND DEBRIS AND MUD FLOWS
FM-2792	2008	Fire	FREEWAY FIRE COMPLEX
DR-1810	2008	Fire	WILDFIRES
FM-2737	2007	Fire	SANTIAGO FIRE
FM-2683	2007	Fire	241 FIRE
EM-3279	2007	Fire	WILDFIRES
DR-1731	2007	Fire	WILDFIRES, FLOODING, MUD FLOWS, AND DEBRIS FLOWS
FM-2630	2006	Fire	SIERRA FIRE
DR-1585	2005	Severe Storm	SEVERE STORMS, FLOODING, LANDSLIDES, AND MUD AND DEBRIS FLOWS
EM-3248	2005	Hurricane	HURRICANE KATRINA EVACUATION
DR-1577	2005	Severe Storm	SEVERE STORMS, FLOODING, DEBRIS FLOWS, AND MUDSLIDES
FS-2405	2002	Fire	ANTONIO FIRE
DR-1203	1998	Severe Storm	SEVERE WINTER STORMS AND FLOODING
EM-3120	1996	Fire	SEVERE FIRESTORMS
DR-1046	1995	Severe Storm	SEVERE WINTER STORMS, FLOODING LANDSLIDES, MUD FLOW
DR-1044	1995	Severe Storm	SEVERE WINTER STORMS, FLOODING, LANDSLIDES, MUD FLOWS
DR-1008	1994	Earthquake	NORTHRIDGE EARTHQUAKE
DR-1005	1993	Fire	FIRES, MUD/LANDSLIDES, FLOODING, SOIL EROSION
DR-979	1993	Flood	SEVERE WINTER STORM, MUD & LAND SLIDES, & FLOODING
DR-935	1992	Flood	RAIN/SNOW/WIND STORMS, FLOODING, MUDSLIDES
DR-812	1988	Flood	SEVERE STORMS, HIGH TIDES & FLOODING
DR-799	1987	Earthquake	EARTHQUAKE & AFTERSHOCKS
DR-677	1983	Coastal Storm	COASTAL STORMS, FLOODS, SLIDES & TORNADOES
DR-657	1982	Fire	URBAN FIRE
DR-635	1980	Fire	BRUSH & TIMBER FIRES
DR-615	1980	Flood	SEVERE STORMS, MUDSLIDES & FLOODING
DR-547	1978	Flood	COASTAL STORMS, MUDSLIDES & FLOODING
DR-566	1978	Flood	LANDSLIDES
DR-253	1969	Flood	SEVERE STORMS & FLOODING

In addition, in March 2014 the County proclaimed a local state of emergency following the 5.1 magnitude La Habra earthquake. Despite more than 10.5 million dollars in damage and costs related to this earthquake, no State Emergency Proclamation was received. On January 17, 2014 the Governor of California proclaimed a State of Emergency related to the State's

extended drought. While the proclamation did not direct specific actions for counties, it was an important step in working towards reducing the overall impact of the drought across the state.

Figure 2 – Orange County Base Map



2.2 Hazard Assessment

A hazard analysis has indicated that the County and Operational Area is at risk for numerous hazards associated with natural disasters and technological incidents. Many of the hazards which exist in or adjacent to Orange County have the potential for causing disasters exceeding

any one jurisdiction's capabilities to successfully respond making centralized management and coordination by the County and its departments essential. The County and OA jurisdictions will review and update the hazard analysis annually in conjunction with the review of this Emergency Operations Plan (EOP).

The following criteria was used to establish each potential hazard rating, based upon historical and recent events to validate frequency and impacts:

- What are the hazard threats facing the community?
 - Natural disaster
 - Human caused disasters
- What is the probability of occurrence?
 - Likely
 - Possible
 - Unlikely
- What are the effects to lives and property?
 - High
 - Average
 - Low
- What is the hazard rating – multiply probability of occurrence by effect?

Figure 3– County and Operational Area Hazard Identification and Analysis

HAZARD THREAT	PROBABILITY OF OCCURRENCE			EFFECT			HAZARD RATING (Probability x Effect)
	Likely 10	Possible 5	Unlikely 1	High 10	Average 5	Low 1	
Flood/Storm	X				X		50
Hazardous Materials	X					X	10
Wildland Fire	X				X		50
Earthquake		X		X			50
Civil Disturbance/Riot		X			X		25
Aircraft Incident		X			X		25
Oil Spill		X			X		25
Train Accident		X			X		25
Dam and Reservoir Failure			X	X			10
Disease Outbreak (Large Scale)			X	X			10
Drought		X			X		25
SONGS			X	X			10
Terrorism			X	X			10
High Wind (Santa Ana Winds)	X					X	10
Extreme Temperatures	X					X	10
Urban Fire		X				X	5
Vector Control (Pests)		X				X	5
Landslide/Debris Flow		X				X	5
Stage III Energy Failures		X				X	5
Tornado		X				X	5
Tsunami			X			X	1

*This Hazard Identification and Analysis is for the County and Operational Area. Each individual jurisdiction may have their own hazard analysis that will reflect the hazards that will affect their jurisdiction.

2.2.1 Aircraft Incident

Additional information can be found in the County and OA Aircraft Accident Annex.

A major air crash that occurs in a heavily populated residential area can result in considerable loss of life and property. The impact of a disabled aircraft as it strikes the ground creates the likely potential for multiple explosions resulting in intense fires. Regardless of where the crash occurs, the resulting explosions and fires have the potential to cause injuries, fatalities, and the destruction of property at and adjacent to the impact point. The time of day when the crash occurs may have a profound effect on the number of dead and injured. Damage assessment and disaster relief efforts associated with an air crash incident will require support from other local governments, private organizations, and state and federal governments.

It can be expected that few, if any, airline passengers will survive a major air crash. The intense fires, until controlled, will limit search and rescue operations. Police barricades will be needed to block off the affected area. The crowds of onlookers and media personnel will have to be controlled. Emergency medical care, food, and temporary shelter will be required by injured or displaced persons. Many families may be separated, particularly if the crash occurs during working hours; a reunification center should be established at a location convenient to the public. In incidents involving civilian aircraft, investigators from the National Transportation and Safety Board (NTSB), with support from the Orange County Sheriff-Coroner Department, will have jurisdiction over the crash area and an investigation will be completed before the area is released for clean-up. The military has jurisdiction over any incident involving military aircraft. The clean-up operation may consist of removing large debris, clearing roadways, demolishing unsafe structures, and towing demolished vehicles.

It can be anticipated that the mental health needs of survivors, responders, and the surrounding residents will greatly increase due to the trauma associated with such a catastrophe. A coordinated response team, comprised of behavioral health professionals, should take a proactive approach toward identifying and addressing mental health needs stemming from any traumatic disaster.

It is impossible to completely prepare, either physically or psychologically, for the aftermath of a major air crash. However, since Southern California has become one of the nation's most overcrowded air spaces, air crash incidents are no longer a probability but a reality. Therefore, air crash incidents must be included among other potential disasters. The Federal Aviation Agency (FAA) requires that John Wayne Airport conduct a field exercise every three years. OA jurisdictions participate in this exercise.

Air crash incidents are not limited to large commercial planes; even small planes can cause major problems. On December 16, 2002 a Piper PA-24-250 went down in an Anaheim Hills

neighborhood. The propeller came to rest in the principal impact crater (PIC) and the inverted engine came to rest several feet from the PIC in the direction of the main wreckage. The cabin area came to rest in a garage. Witnesses stated that the garage exploded and burst into flames several minutes after the accident. Wreckage pieces that were not inside the garage were not charred. Approximately 2/3 of the left wing separated from the cabin area by the garage wall. A portion of the right wing was in the street in front of the garage. Debris from the airplane was strewn along for approximately 1/4 mile.

The use of aircraft as a WMD must always be considered. The events of September 11, 2001, make it clear that any size aircraft becomes a potential weapon in the hands of terrorists.

Increasingly heavy air traffic over the greater Los Angeles metropolitan area and Orange County are constant reminders of the possibility of aircraft accidents in Orange County. Within and surrounding Orange County there are multiple airports with air traffic lanes within the County. Aircraft crashes may occur anywhere within the County, therefore residential areas, business districts, and industrial areas are all equally in jeopardy.

The airports in and adjacent to Orange County which handle the greatest amount of air traffic are as follows:

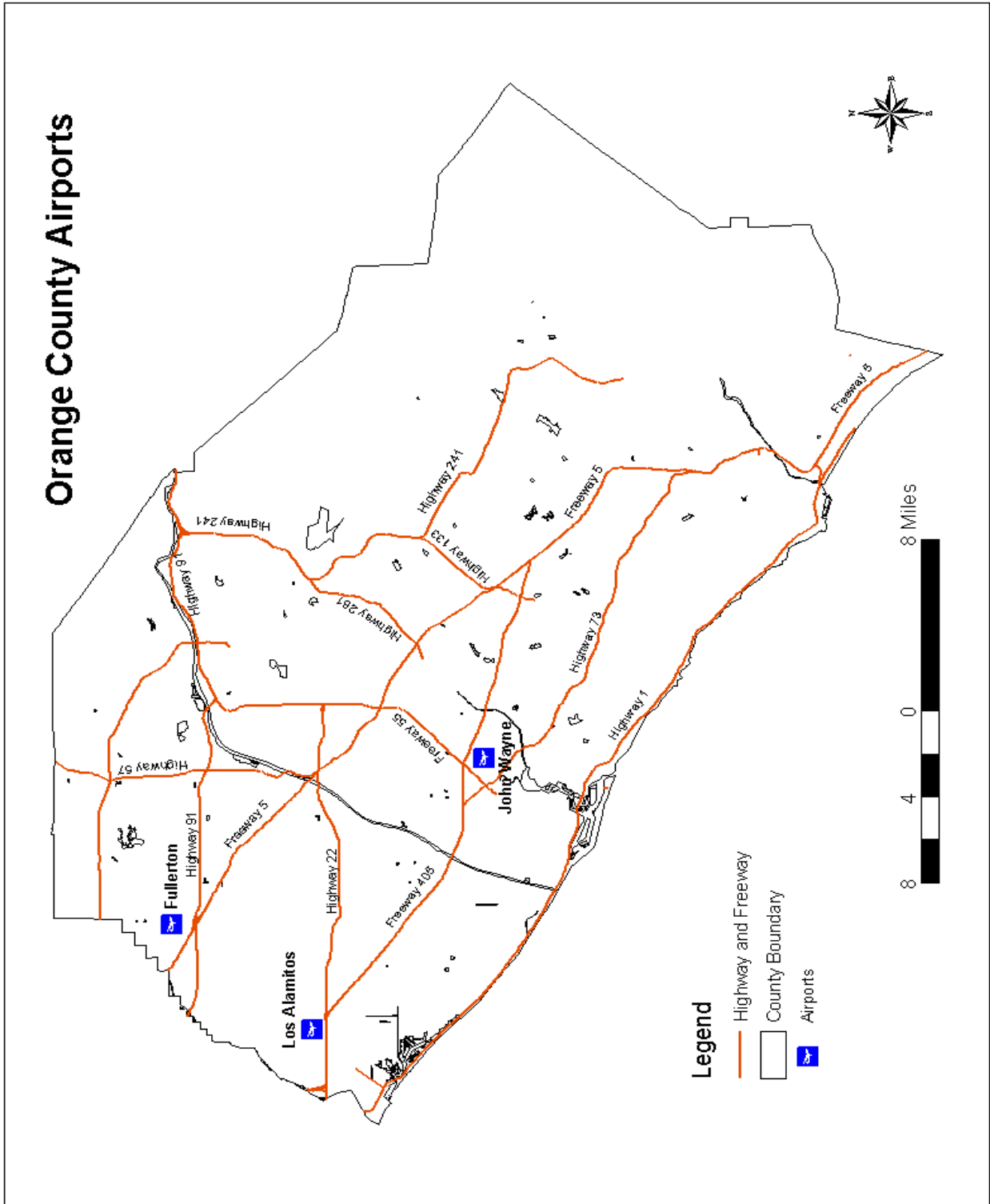
- **Los Angeles International Airport (LAX)** — LAX is the fourth busiest passenger airport. It also ranks eleventh in air cargo tonnage handled and its popularity shows no sign of decreasing. In 2012, more than 61 million people traveled through LAX. The LAX air cargo system handled more than 2.1 million tons of goods. LAX handles 70 percent of the passengers, 75 percent of the air cargo, and 95 percent of the international passengers and cargo traffic in the five-county Southern California region.
- **Long Beach Airport (LGB)** — LGB has a maximum of 41 daily commercial flights and 25 commuter flights. There are very strict noise pollution controls at LGB, based on the current noise levels allowance, which limit the airports operations to the hours of 7:00 AM to 10:00 PM.
- **John Wayne Airport (SNA)** — In 2015, over 10 million passengers were served. John Wayne Airport (JWA) is the sole commercial airport within Orange County and serves both domestic and international passengers. General aviation operations outnumber commercial operations. In 2011, JWA was ranked as the 43rd busiest passenger airport in the country. In the same year, JWA handled 262,800 aircraft operations ranking it 34th in the nation.
- **Fullerton Airport (FUL)** - The Fullerton Airport services general aviation only. Fullerton Airport is adjacent to Interstate 5 and the 91 freeway. Fullerton Airport's runway length is 3,120' and has an aircraft parking capacity of 600 planes. Family housing and a small

commercial business area lies immediately to the South of the airport. Commercial businesses predominantly lie to the immediate West and East of the airport. The Northern side of the airport is comprised of commercial business structures as well as a small residential community surrounding a small, man-made lake.

- **Ontario Airport (ONT)** — Passenger traffic at ONT has been increasing steadily for the past ten years. In 2012, 4.3 million passengers used the airport and 454,880 tons of air freight was shipped.
- **Burbank Airport (BUR)** — BUR has experienced approximately a 9.4 percent growth rate since 1993. In 2012, the airport served 4.1 million passengers on seven major carriers and over 103.7 million pounds of cargo. Also, airport hours of operation are restricted to 7:00 AM to 10:00 PM.
- **Joint Forces Training Base Los Alamitos** — This station is located in the west part of the County close to LGB and is an active military base available to the region for receiving disaster resources from throughout the State. Numerous military flights leave and land on a daily basis.

Aircraft flying over Orange County are positioned in the Los Angeles Terminal Control Area (TCA). The TCA is airspace restricted to large, commercial airliners. Each TCA has an established maximum and minimum altitude in which a large aircraft must travel. Smaller aircraft desiring to transit the TCA may do so by obtaining Air Traffic Control clearance. Aircraft departing from airports other than LAX, whose route of flight would penetrate the TCA, are required to give this information to Air Traffic Control. Pilots operating small aircraft often rely on geographical landmarks, rather than charts, to indicate their locations. If a pilot is unfamiliar with the geographical landmarks of the Southern California basin, he/she may misinterpret a particular landmark and inadvertently enter the restricted TCA airspace. This misunderstanding could result in a mid-air collision.

Figure 4 – Map of Orange County Airport Locations



2.2.2 Civil Unrest and Disobedience and Riot

The spontaneous disruption of normal, orderly conduct and activities in urban areas, or the outbreak of rioting, violence, looting or property destruction of a large nature, is referred to as civil unrest. Civil unrest can be spurred by specific events, such as large sporting events or criminal trials, or can be the result of long-term disfavor with authority. Civil unrest is usually distinguished by the fact that normal on-duty police and safety forces cannot adequately deal with the situation until additional resources can be acquired. This is the time period when civil unrest can grow to large proportions.

The threat to law enforcement and safety personnel can be severe and bold in nature. Securing of essential facilities and services is necessary.

The various agencies that are tasked with providing emergency response services within their respective jurisdictions are very adept at dealing with ordinary or routine emergency incidents. There are, however, incidents and circumstances that, by their very nature, exceed the ability and capacity of a single jurisdiction to handle the situation. When this occurs, a request for additional resources is initiated and is accommodated through mutual aid agreements. Incidents, whether they are natural, e.g., flooding, earthquakes, etc., or civil disturbances that occur simultaneously in a widespread manner affecting multiple jurisdictions, require a greater degree of coordination and organization. Active participation in Unified Command (UC) and ICS, as adopted by SEMS, is essential if a coordinated effort is to be initiated and maintained.

During an episode of civil unrest, available resources and equipment may be allocated and reallocated based on changing conditions and priorities. This process alone mandates participation by all entities within the OA. In ICS, UC is a united team effort that allows all agencies that have responsibility for the incident, either jurisdictional or functional, to jointly provide management direction to an incident through a common set of incident objectives and strategies established at the command level. This is accomplished without losing or abdicating agency authority, responsibility, or accountability. Each agency is fully aware of the plans and actions of all others, and the combined efforts of all agencies are optimized as they perform their respective assignments.

In Orange County, civil disturbances may be precipitated or manifested in a number of different ways, as follows:

- Spontaneous reactions to verdicts in high-profile trials (retaliation or celebration)
- Spontaneous reactions to organized sporting event outcomes
- Organized reactions or demonstrations
- Targeting of public facilities
- Targeting of private highly visible establishments

- Local population demonstrations
- Transient population demonstrations
- Hit and run tactics
- Diversion tactics masking other motives
- Indiscriminate acts of arson and vandalism

While the motivation behind the unrest may be known, the extent and type of activity that will occur is less certain. The potential for widespread acts of multiple disturbances or violence is very real. The fact that these types of operations are labor intensive amplifies the need for preplanning and aggressive organizational techniques.

Additionally, terrorists could use the chaotic activity of civil unrest, either spontaneous or planned, to provide misdirection and camouflage their intent.

Southern California has faced civil unrest in various forms since the Watts Riots of 1964, the Huntington Beach Surf riots of August 1986 and July 2013, the 1992 Rodney King verdict, the Westminster Little Saigon demonstration in February 1999, the Anaheim Civil Unrest during the summer of July 2012, the Fullerton Kelly Thomas trial in January of 2014 and Trump Rally in April 2016.

2.2.2 Dam and Reservoir Failure

Additional information can be found in the County and OA Dam and Reservoir Failure Annex.

Dam and Reservoir failures can result from a number of natural or man-made causes such as earthquakes, erosion of the face or foundation, improper silting, rapidly rising flood waters, malicious events and structural/design flaws.

A dam and reservoir failure will cause loss of life, damage to property, and other ensuing hazards, as well as the displacement of persons residing in the inundation path. Damage to electric generating facilities and transmission lines could also impact life support systems in communities outside the immediate hazard areas.

Governmental assistance could be required and may continue for an extended period. These efforts would be required to support evacuation, search and rescue, debris removal and roadway clearing, the demolishing of unsafe structures, reestablishment of public services and utilities, and continued care and welfare for the affected population including, as required, sheltering and temporary housing for displaced persons.

The dams and reservoirs affecting Orange County are considered potential terrorist targets. The weapon most likely to be used would be explosives with the goal of collapsing the dam. Such an event would result in an inundation event with little or no warning. The potential of using other types of weapons such as chemical or biological are considered low due to the large amount of material that would be required to contaminate the reservoirs, but the potential does exist. This scenario would only apply to those dams where the reservoirs are used for drinking water.

Dam and Reservoir Failure History

Westminster Water Tank Failure, Disaster of 1998

In September of 1998, a 5 million gallon municipal water storage tank in the City of Westminster ruptured as a result of corrosion and construction defects. There was no loss of life, but damage was extensive. The flow of water from the 32 year old tank destroyed most of the storage facility as well as several private residences. Additionally, there were approximately 30 more homes inundated with water and silt. Through the Public Works Mutual Aid Agreement the County of Orange Public Works Department assisted the City of Westminster in the cleanup and temporary repair of the streets.

City employees, the Orange County Fire Authority, neighboring fire services, and the Red Cross were on-site for days assessing the damage and assisting residents. Water storage for the City

was non-existent following this event while the other 5 million gallon tank of similar age and construction was removed from service as a precautionary measure.

A new reservoir facility came on-line in March 2003 consisting of two eight million gallon water storage tanks, a 17 million gallon per day booster station, and a new groundwater well with 3,000 gpm capacity. All new construction has passed rigorous inspections and has obtained the required permits from the California Department of Public Health.

Prado Dam Seepage

In January 2005, due to preceding storm activity which produced near record water levels behind Prado Dam, the reservoir water surface elevation behind the dam peaked at 527.4 feet above sea level. On January 13, the U.S. Army Corps of Engineers discovered minor seepage on the downstream face of Prado Dam. The seepage was located in an area that was under construction to build new outlet works as part of the overall flood control improvement to Prado Dam. As a precautionary measure Corona city officials evacuated over 800 homes below the dam and Orange County officials relocated campers in the Canyon RV Park because of their proximity to the adjacent floodplain.

To decrease the amount of water behind Prado dam the release of water was increased from 5,000 cubic feet per second (cfs) to 10,000 cfs to reduce the level of water being held to 505 feet. In addition to the increase in water release, the U.S. Army Corps began holding back floodwaters upstream at both the San Antonio Dam in Los Angeles County and Seven Oaks Dam near Redlands to reduce the inflow of water to Prado Dam. As the water level was lowered, the hydraulic pressure on the dam abutment subject to seepage was reduced. When the water was reduced to 505 feet (25,750 acre feet of water) on Monday, January 17, 2005 the USACE was able to start the reconditioning of the cofferdam in order to be ready for subsequent flood inflows to the dam.

Currently, there are 44 dams and reservoirs located within or immediately adjacent to Orange County. They include reservoirs which normally contain water and flood control facilities which may be dry most of the time. Their capacity range from 18 acre-feet (Diemer No. 8) to 314,400 acre-feet (Prado Dam) holding capacity.

The following is a listing of registered Dams and Reservoirs in Orange County, their location, owner, year built and capacity.

Figure 5 - Listing of Registered Dams and Reservoirs in Orange County

Dam/Reservoir Name	Owner	Year built	Capacity by acre feet	Location(city and latitude and longitude)		
30 MG Central Reservoir	City of Brea	1924	92	Brea	33.926	-117.91
Agua Chinon	County of Orange	1998	256	Irvine	33.6888	-117.7
Bee Canyon Retention Basin	County of Orange	1994	243	Irvine	33.7057	-117.71
Big Canyon	City of Newport Beach	1959	600	Newport Beach	33.6121	-117.86
Brea Dam	Army Corps of Engineers	1942	4,018	Fullerton	33.892	-117.93
Carbon Canyon Dam	Army Corps of Engineers	1961	7,033	Yorba Linda	33.915	-117.84
Diemer No. 8	Metropolitan Water District of So. California	1968	18	Yorba Linda	33.9134	-117.82
Diemer Ozone Contact Basin	Metropolitan Water District of So. California	2011	23	Yorba Linda	33.9115	-117.82
Diemer Reservoir	Metropolitan Water District	1963	80	Yorba Linda	33.9109	-117.82
Dove Canyon	Dove Canyon Master Association	1989	415	Dove Canyon	33.6386	-117.57
East Hicks Canyon Retarding Basin	County of Orange	1997	75	Irvine	33.7236	-117.72
Eastfoot Retarding Basin	City of Irvine	2007	213	Irvine	33.7525	-117.75
El Toro Reservoir	El Toro Water District	1967	877	Mission Viejo	33.6241	-117.67
Fullerton Dam	Army Corps of Engineers	1941	706	Fullerton	33.898	-117.88
Galivan Retarding Basin	County of Orange	2000	169	Newport Beach	33.5632	-117.68
Harbor View	County of Orange	1964	28	Corona Del Mar	33.6034	-117.87
Hicks Canyon Retention Basin	County of Orange	1997	110	Irvine	33.7361	-117.72
Lake Mission Viejo	Lake Mission Viejo Association, Inc.	1976	4,300	Mission Viejo	33.6271	-117.65

Dam/Reservoir Name	Owner	Year built	Capacity by acre feet	Location(city and latitude and longitude)		
Lower Peters Canyon Retarding Basin	County of Orange	1990	206	North Tustin	33.7603	-117.77
Marshburn Retarding Basin	County of Orange	1998	424	Irvine	33.6941	-117.73
Orange County (Humble) Reservoir	Metropolitan Water District	1941	217	Brea	33.9367	-117.88
Orchard Estates Retarding Basin	County of Orange	1999	138	Irvine	33.7384	-117.75
Palisades Reservoir	South Coast Water District	1963	147	San Clemente	33.4638	-117.65
Peters Canyon	County of Orange	1932	1,090	North Tustin	33.7797	-117.76
Portola	Santa Margarita Water District	1980	586	Coto de Caza	33.6307	-117.58
Prado Dam	Army Corps of Engineers	1941	314,400	Corona	33.89	-117.64
Rattlesnake Canyon	Irvine Ranch Water District	1959	1,480	Irvine	33.7295	-117.74
Rossmoor No. 1	El Toro Water District	1964	43	Laguna Woods	33.6192	-117.73
Rossmoor Retarding Basin	County of Orange	2002	175	Rossmoor	33.7877	-118.09
Round Canyon Retarding Basin	County of Orange	1994	286	Irvine	33.6998	-117.7
San Joaquin Reservoir	Irvine Ranch Water District	1966	3,036	Newport Beach	33.6202	-117.84
Sand Canyon	Irvine Ranch Water District	1912	960	Sand Canyon	33.6477	-117.79
Santiago Creek (Irvine Lake)	Serrano and Irvine Ranch Water Districts	1933	25,000	Silverado	33.7863	-117.72
Sulphur Creek	County of Orange	1966	520	Laguna Niguel	33.5500	-117.71
Syphon Canyon	Irvine Ranch Water District	1949	500	Irvine	33.7097	-117.73
Trabuco	Trabuco Canyon Water District	1984	138	Rancho Santa Margarita	33.6445	-117.56

Dam/Reservoir Name	Owner	Year built	Capacity by acre feet	Location(city and latitude and longitude)		
Trabuco Retarding Basin	County of Orange	1996	390	Irvine	33.6965	-117.76
Trampas Canyon	Premier Silica LLC	1975	5,700	San Juan Capistrano	33.4988	-117.58
Upper Chiquita	Santa Margarita Water District	2012	753.5	Rancho Santa Margarita	33.5883	-117.62
Upper Oso	Santa Margarita Water District	1979	3,700	Mission Viejo	33.6597	-117.63
Villa Park Dam	County of Orange	1963	15,600	Orange	33.8163	-117.76
Veeh Reservoir	Lake Hills Community Church	1936	185	Laguna Hills	33.6254	-117.73
Walnut Canyon	City of Anaheim	1968	2,570	Anaheim	33.8412	-117.75
Yorba	County of Orange	1907	1,200	Anaheim	33.8713	-117.81

2.2.3 Disease Outbreak (Large Scale)

The County, with the leadership of OCHCA, has developed a Disease Outbreak Response Annex (DORA) to this EOP that will support the County's response to this potential threat.

Certain communicable diseases are required to be reported to the local health department according to the State of California Code of Regulations. The Orange County Health Care Agency (OCHCA) Epidemiology and Assessment (E&A) unit's medical directors, public health nurses, and epidemiologists investigate individual cases and outbreaks of reported communicable diseases.

See <http://ochealthinfo.com/phs/about/dcepi/epi/physprov/report> for the list of reportable diseases. Statistical data on communicable diseases in the County are available at <http://ochealthinfo.com/phs/about/dcepi/epi/geninfo/stats>.

A large disease outbreak or epidemic, with significant morbidity and mortality, is one of the primary public health concerns of the 21st century. A disease outbreak arises when the incidence of disease within a defined community or geographical area/region during a specified time period (e.g. influenza season) exceeds what would normally be expected. An outbreak may occur with a single case of a disease long absent from a population (e.g. smallpox), an agent (e.g. bacterium or virus) not previously recognized in that community or geographical area, a previously endemic disease for which immunity has decreased due to lack of wild-type circulation and decreased immunization rates, or the emergence of a previously unknown disease within a community. The outbreak may occur in a restricted or specific geographical area, may extend over several countries and continents; may occur naturally, be introduced intentionally (e.g. bioterrorism); and may last for a few days, weeks, or for several years.

Bioterrorism is a significant concern throughout the country. The intentional release of anthrax, smallpox or other highly communicable and/or virulent diseases would tax all available medical resources within the County. Such an incident could cause a significant impact to life, safety and the economy of Orange County.

Currently the diseases of concern for epidemic in Orange County include: influenza (including seasonal, novel and/or pandemic influenza strains), childhood vaccine preventable diseases such as measles, foodborne illness including norovirus, mosquito-borne viruses such as West Nile Virus (WNV) or Zika, and emerging pathogens such as Middle East Respiratory Syndrome Coronavirus (MERS-CoV), enterovirus D-68, or Ebola. In 2009, an H1N1 influenza pandemic spread quickly and led to over 50 deaths in Orange County. The 2009 H1N1 influenza virus quickly established itself as a seasonal influenza strain and has continued to cause illnesses and deaths in Orange County over the years. Orange County continues to monitor for importation of emerging diseases in other countries such as avian influenza H7N9, Ebola and MERS-CoV.

An Influenza pandemic is likely to occur in “waves” of infection, each lasting approximately 8 to 12 weeks and separated by weeks of inactivity. In total, it could last from 18 months to several years. An influenza pandemic is likely to affect everyone in Orange County at some point and can greatly impact “business as usual” in any sector of society or government. A pandemic will place a great strain on existing health care resources and may exceed available resources. Personnel, supplies, equipment, and pharmaceutical responses (e.g., vaccination and antivirals) may be in short supply and/or unavailable and non-pharmaceutical responses (e.g., strict adherence to respiratory hygiene, hand washing, self-isolation, and social distancing) will be the most effective strategies to limit transmission. This will make it difficult to pre-treat potentially exposed individuals and will limit treatment options once infection sets in. If transportation is compromised in the region or country, food and other essentials may be unavailable as well. Outbreaks are expected to occur simultaneously throughout much of the County and the State, which may limit the availability of mutual aid assistance and resources from other areas.

Vector Issues

Information for this assessment was obtained from the Orange County Mosquito and Vector Control District. The mission of the Orange County Mosquito and Vector Control District (District) is to protect Orange County citizens from vectors and the diseases they carry. The District routinely conducts field surveys to determine the presence of vectors and vector-borne diseases. The majority of the District’s resources are devoted to the control of mosquitoes, rats, flies, and Red Imported Fire Ants (RIFA). Surveillance and detection programs are designed around each of these vectors. When a vector-borne disease is detected by routine surveillance activities, and it is determined that risk to the public exists, the District will respond aggressively to the vector issue. The District maintains a Memorandum of Understanding (MOU) with the Orange County Health Care Agency (OCHCA) to respond to human cases of West Nile Virus (WNV) disease and a joint procedure for the provision of information to respond to human cases of other vector-borne diseases in Orange County. The District’s response is determined by District management and is summarized in the OCMVCD Integrated Vector Management & Response Plan and the West Nile Virus Response Plan.

The District has identified the following vector-borne diseases as a potential threat to residents of Orange County. Natural disasters such as earthquakes, fires, and floods may increase local mosquito populations and the overall risk of these diseases being transmitted to residents of Orange County.

Mosquito-borne Disease

The District’s surveillance and mosquito control efforts are focused on the following mosquito-borne diseases; 1) West Nile virus (WNV), 2) Saint Louis encephalitis (SLE), 3) invasive *Aedes* diseases (chikungunya, dengue, Zika, yellow fever), and 4) malaria. In 2015, two invasive *Aedes*

West Nile virus (WNV) has been present in Orange County since 2003. In 2014 and 2015, the District experienced super epidemics of WNV resulting in 377 human infections with 17 deaths. The area in Orange County with the highest risk of WNV is seen in the map below. Because WNV is a disease of birds, a bird die-off could indicate increased risk to residents. For this reason, the District maintains a dead bird surveillance program where dead birds can be reported to the District for testing. In response to the super epidemic of WNV in 2014 and 2015, the District expanded the adult mosquito control program to include the use of backpacks, trucks, and airplanes to control infected, adult mosquitoes in Orange County.

West Nile Virus Human Infections Orange County, 2004 - 2014

Total YTD: 534

Fatalities: 16

Not Shown: 5 Cases, Unknown Locations

Updated 10/20/15

Saint Louis encephalitis (SLE) was the first (1933) recognized neuroinvasive arbovirus in the United States. Sporadic human cases have been diagnosed in southern California, and the virus and antibodies have been recovered from wild birds during surveillance studies. In 2015, SLE was detected in mosquitoes in Riverside County, Calif. The most recent, large-scale outbreaks of SLE occurred in southern California in 1983-1984 (26 cases, five in Orange County), the San Joaquin Valley in 1989 (29 cases), with sporadic cases reported in the Los Angeles Basin from 1990-1997. SLE virus activity has not been detected in Orange County following the introduction of WNV into the County in late 2003.

Invasive *Aedes* Diseases: Chikungunya, Dengue, Zika, and Yellow Fever Viruses

In 2015, invasive *Aedes* mosquitoes (*Aedes aegypti* and *Aedes albopictus*) were detected infesting multiple neighborhoods in Orange County, Calif. Previous to the 2015 detections, *Aedes aegypti* had never been collected in Orange County and *Aedes albopictus* had not been detected since 2004 when it was considered eradicated from Orange County. As of 2016, the invasive *Aedes* mosquito species were detected in multiple neighborhoods of Orange County. The detection of the invasive *Aedes* mosquitoes indicates that disease transmission of chikungunya, dengue, Zika and/or yellow fever is possible in Orange County. Under the joint procedure with OCHCA, the District receives reports of human cases of travel-acquired *Aedes* vectored diseases. The District will respond to the following situations involving invasive *Aedes* including: 1) reports of nuisance biting; 2) travel-acquired disease cases; 3) locally acquired disease cases; 4) positive mosquito samples. In the event that multiple human cases of an invasive *Aedes* disease were detected, the District would use backpacks, trucks and aerial application of pesticides in a phased response to control infected mosquitoes and break disease transmission.

Malaria is a serious infectious disease transmitted by *Anopheles* mosquitoes and is caused by single-celled animals (protists) in the genus *Plasmodia*. The species of mosquito, *Anopheles hermsi*, present in Orange County that could potentially be involved in transmission of *Plasmodia* to humans is largely restricted to wetland habitats. Major reclamation and drainage projects to produce more arable and livable land have reduced the malaria transmission potential in many areas of Orange County. However, imported malaria cases among military personnel and overseas travelers returning home have the potential to reintroduce malaria among the County's *Anopheles* mosquitoes. In some circumstances, according to the joint procedure with the OCHCA, the District will respond to travel-acquired malaria cases returning home to Orange County.

Flea-borne Diseases

Flea-borne typhus is caused by *Rickettsia felis* and/or *R. typhi*, two closely-related gram-negative bacteria. The cat flea, *Ctenocephalides felis*, commonly found on cats, dogs, opossums, and outdoor wildlife, is considered the primary vector of the flea-borne typhus bacteria in Southern California. Testing of small mammals and the fleas they carry by the District has demonstrated a high prevalence of flea-borne typhus bacteria in fleas (> 40%) collected from areas with human cases. From 2006-2016, over 136 human cases of flea-borne typhus were reported in Orange County. The District maintains a surveillance and education program for flea-borne typhus, but does not routinely conduct flea abatement or animal removal. The District advocates for “No Feeding of Wildlife” policies, including feral cats, on publically owned lands in Orange County. The District recognizes that feeding of wildlife and feral cats (feral cat colony maintenance) can increase the population of cat fleas and flea-borne typhus disease transmission in communities in Orange County. The District works collaboratively with local governments, code-enforcement officials, and animal care agencies to reduce flea-borne typhus disease transmission in Orange County.

Plague is a naturally-occurring bacterial disease associated with wild rodents and fleas. The causative organism *Yersinia pestis* can be transmitted to humans through the bite of an infected flea, causing swelling (“buboes”; i.e., bubonic plague), but also infection of the bloodstream and even lungs. Plague has a very high fatality rate in humans if cases are not diagnosed and treated with antibiotics in a timely manner. Plague remains endemic in ground squirrel populations in many areas of California. Outbreaks of bubonic plague have been linked to rodent die-offs in California. If multiple dead ground squirrels, rabbits, or rats are detected in Orange County, they should be reported to the District immediately for testing. The California Department of Public Health, Vector-Borne Disease Section lists the Santa Ana Mountains as a plague endemic area. Plague has been detected in Orange County sporadically. In the early 1980s ground squirrels in Tonner Canyon and Anaheim Hills tested positive for plague, and in 1998 a roof rat in the city of Orange tested plague positive. Plague in Southern California is typically associated with ground squirrels and wood rats, and is only rarely associated with roof rats. The District routinely traps and tests ground squirrels and fleas, as well as roof rats, from residential areas near historically positive plague detection sites. Rats, squirrels, and other small mammals from Orange County tested by the District laboratory have all tested negative since 1998.

Hantavirus

Hantavirus Pulmonary Syndrome (HPS) is a human disease caused by a viral pathogen found in rodent urine and excrement that affects humans by attacking the lungs and producing a fatal pneumonia in nearly 40% of cases. Humans become infected with the virus when they inhale

aerosol particles contaminated from deer mouse fecal pellets (droppings) and urine. The two strains of hantaviruses encountered locally are the Sin Nombre Virus (SNV) and El Morro Canyon Virus. Although these strains have been found in local deer mice, no residents have been diagnosed with hantavirus in Orange County. The deer mouse is widely distributed in neighborhoods of Orange County that border natural areas. To prevent infection with hantavirus, the California Department of Public Health recommends spraying deer mouse droppings and urine with a 10% bleach and water disinfection solution prior to clean up.

2.2.5 Drought

Unlike most other natural hazards, drought is not a sudden, catastrophic occurrence. It is often referred to as a "creeping phenomenon" and its impacts vary from region to region. Drought can therefore be difficult for people to understand. Because drought can occur over several years, it is almost impossible to determine when a drought begins and ends. Many government agencies, the National Oceanic and Atmospheric Administration (NOAA) and the California Department of Water Resources, as well as academic institutions, such as the University of Nebraska-Lincoln's National Drought Mitigation Center, generally agree that there is no clear definition of drought. Drought is highly variable depending on what part of a state or the country one is situated. In the most general sense, drought originates from a deficiency of precipitation over an extended period of time--usually a season or more--resulting in a water shortage for some activity, group, or environmental sector. Its impacts result from the interplay between the natural event (less precipitation than expected) and the demand people place on water supply, and human activities can exacerbate the impacts of drought.

Droughts may be measured by a number of indicators, including:

- Levels of precipitation
- Soil conditions (moisture)
- Temperature

Drought History

A significant drought, reported by many of the ranchers in southern California, occurred in 1860. The great drought of the 1930s, coined the "Dust Bowl," was geographically centered in the Great Plains yet ultimately caused water shortages in California. The drought conditions in the Plains resulted in a large influx of people to the West Coast. Approximately 350,000 people from Arkansas and Oklahoma immigrated mainly to the Great Valley of California. As more people moved into California, increases in intensive agriculture led to overuse of Santa Ana River watershed and groundwater resulting in regional water shortages.

Historically, California has experienced severe drought conditions. The approved 2013 State Hazard Mitigation Plan (SHMP) states that from 1972 to 2009, there have been eight drought-related State Emergency Proclamations in California. Through 2012, the California Office of Emergency Services administered costs due to drought totaling \$2,686,858,480.

Beginning in 2009, California entered into another drought situation. Water years 2012 and 2013 were dry statewide, and the 2013 record-low precipitation has worsened California's conditions for the 2014 water year (started October of 2013). Statewide reservoir storage is down significantly and impacts of two (possibly three) dry years in a row has caused significant water delivery issues in California. In January 2014, a statewide Gubernatorial State of

Emergency Proclamation was issued for the drought emergency and remains in effect until further notice. There are no indicators when this situation may improve, or if it will continue to worsen. Allocations for contractors of Department of Water Resources State Water Project (SWP) and the U.S. Bureau of Reclamation's (USBR's) Central Valley Project (CVP) are dependent upon snowpack accumulation in the Cascades and Sierra Nevada mountains. In April 2015, DWR announced an initial allocations lower than the SWP contractors' requested amounts. In Orange County, MWDOC has been subject to these decreased allocations. For more information on current drought conditions in California, visit:

<http://www.water.ca.gov/waterconditions/droughtinfo.cfm>.

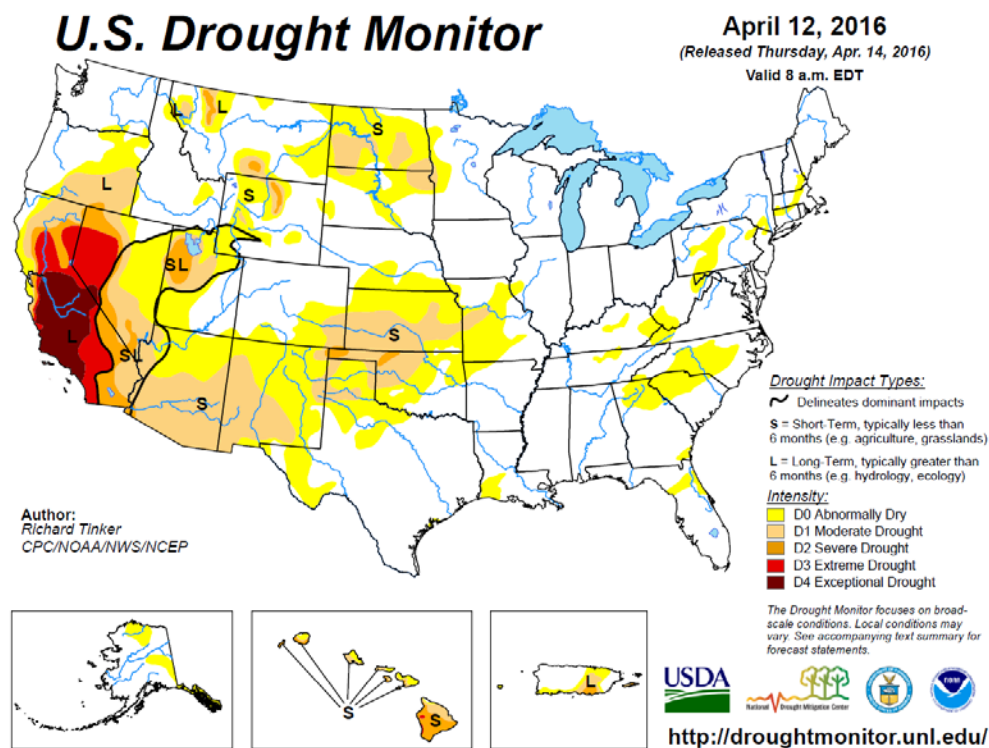
Several bills have been introduced into Congress in an effort to mitigate the effects of drought. In 1998, President Clinton signed into law the National Drought Policy Act, which called for the development of a national drought policy or framework that integrates actions and responsibilities among all levels of government. In addition it established the National Drought Policy Commission to provide advice and recommendations on the creation of an integrated federal policy. The most recent bill introduced into Congress was the National Drought Preparedness Act of 2003, which established a comprehensive national drought policy and statutorily authorized a lead federal utility for drought assistance. Currently there exists only an ad-hoc response approach to drought unlike other disasters (e.g., hurricanes, floods, and tornadoes) which are under the purview of FEMA.

The 2015 California Drought Contingency Plan was prepared in conjunction with the California Water Plan and both documents are updated every five years. The purpose of the plan is to minimize drought impacts by improving agency coordination, enhancing monitoring and early warning capabilities, conducting water shortage impact assessments, and implementing preparedness, response, and recovery programs. The California Water Plan presents strategic plan elements including a vision, mission, goals, guiding principles, and recommendations for current water conditions, challenges, and activities. The plan includes future uncertainties and climate change impacts, scenarios for 2050, and a roadmap for improving data and analytical tools.

Localized regulations for drought are mentioned in local municipal codes. The County of Orange, Code of Ordinances Section 3 provides the definition of a drought emergency. Section 7 defines use of water and landscaping during conservation times under the state model, and Article 1 outlines water conservation and the governance over well water use in Orange County. All retail water utilities have drought ordinances that specify use of drinking water during the various phases of drought.

On a statewide basis, a number of regulatory requirements and documents address planning for drought in California, most notably the 2015 California Drought Contingency Plan.

The graphic below from the National Weather Service Prediction Center provides updates regarding the drought impacts both long and short term for the United States. As seen below, the majority of California, is in an extreme drought situation, and the County is no exception.



Source: <http://droughtmonitor.unl.edu/>

2.2.6 Earthquake

Earthquakes are considered a major threat to the County due to the proximity of several fault zones, notably the San Andreas Fault Zone and the Newport-Inglewood Fault Zone. A Southern California Earthquake Center (SCEC) report (SCEC, 1995) indicated that the probability of an earthquake of Magnitude 7 or larger in Southern California before the year 2024 is 80 to 90%. A significant earthquake along one of the major faults could cause substantial casualties, extensive damage to buildings, roads and bridges, fires, and other threats to life and property. The effects could be aggravated by aftershocks and by secondary effects such as fire, landslides and dam failure. A major earthquake could be catastrophic in its effect on the population, and could exceed the response capability of the local communities and even the State.

Following major earthquakes, extensive search and rescue operations may be required to assist trapped or injured persons. Emergency medical care, food and temporary shelter would be required for injured or displaced persons. In the event of a truly catastrophic earthquake, identification and burial of the dead would pose difficult problems. Mass evacuation may be essential to save lives, particularly in areas below dams. Many families could be separated, particularly if the earthquake should occur during working hours. Emergency operations could be seriously hampered by the loss of communications and damage to transportation routes within, to and out of the disaster area and by the disruption of public utilities and services.

Extensive federal assistance could be required and could continue for an extended period. Efforts would be required to remove debris and clear roadways; demolish unsafe structures; assist in reestablishing public services and utilities; and provide continuing care and welfare for the affected population including temporary housing for displaced persons.

In general, the population is less at risk during non-work hours (if at home) as wood-frame structures are relatively less vulnerable to major structural damage than are typical commercial and industrial buildings. Transportation problems are intensified if an earthquake occurs during work hours, as significant numbers of Southern California residents commute across county lines on a daily basis for work and leisure. Many residents reside in one county and commute to the adjacent county either for work or leisure. An earthquake occurring during work hours would clearly create major transportation problems for those displaced workers.

Hazardous materials could present a major problem in the event of an earthquake. Orange County, one of the largest industrial and manufacturing areas in the state, has several thousand firms that handle hazardous materials, and are estimated to produce more than 100 million gallons of hazardous waste per year. The County's highways serve as hazardous materials transportation corridors, and Interstate 5 is the third busiest highway corridor in the country.

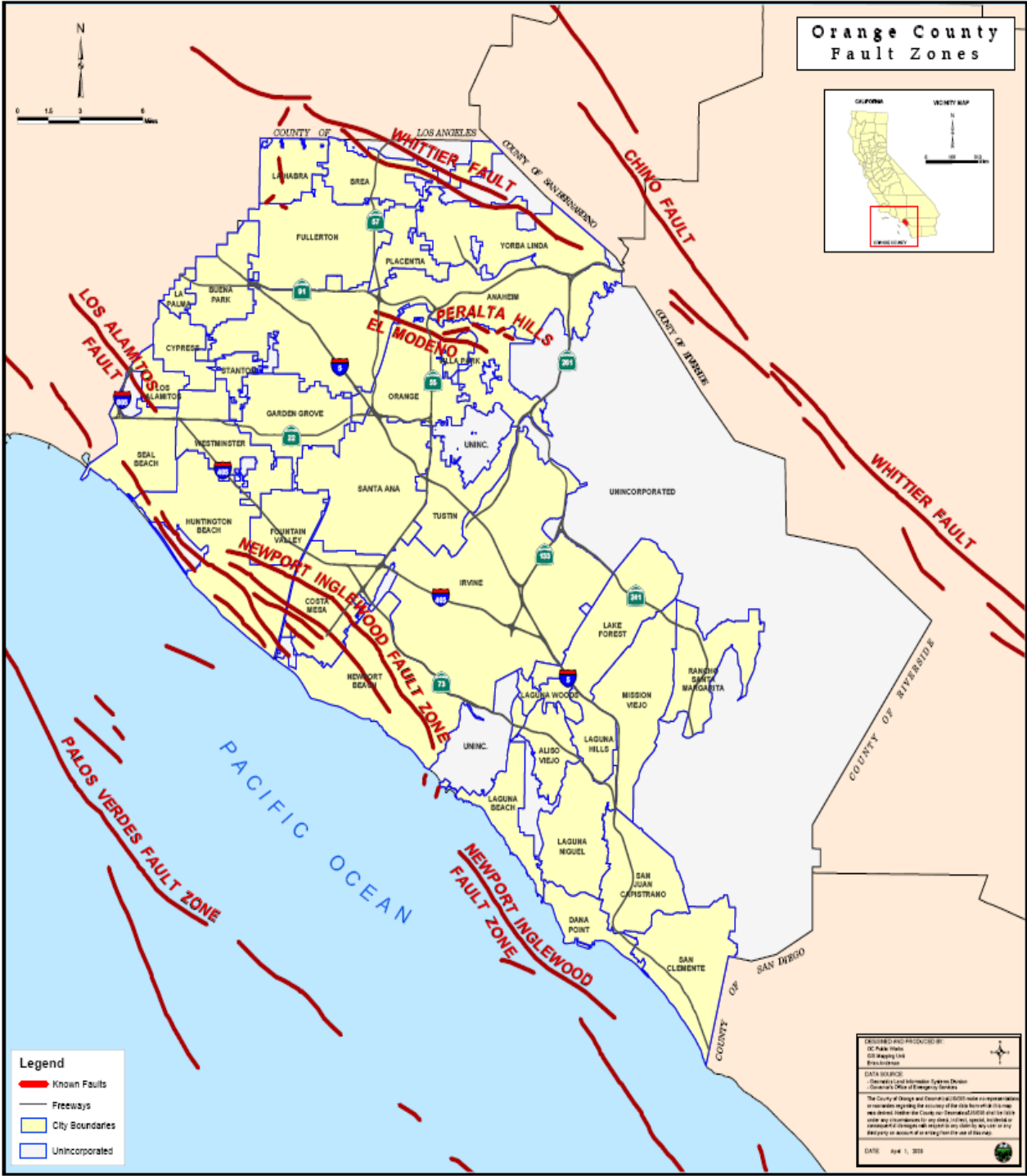
The Orange County Fire Authority coordinates the Hazardous Materials Area Plan which serves as a guide for emergency response and operations for hazardous materials incidents.

Much of the industrial base of Southern California, and Orange County in particular, consists of high-technology companies essential to the nation's commerce, economy, and defense effort. A catastrophic earthquake could not only have a severe impact on the local industrial base; but also a major impact on the security of our nation. For example: Census and Department of Defense data indicate that over 50 percent of the U.S. Missile and Space Vehicle business, about 75 percent of the domestic micro-chip industry, 40 percent of the U.S. semiconductor business, and more than 20% of the U.S. optical instrument business is located in California. Much of those capacities, including prime contractors, subcontractors or supply vendors, are located in Orange County. Approximately 5,000 defense contractors are located within 50 miles of the San Andreas Fault -- including virtually all of Orange and Los Angeles Counties. In some cases, local defense contractors are the only source for some of the most critical defense systems used by our military departments.

In addition to the loss of production capabilities, the economic impact on the County from a major earthquake would be considerable in terms of loss of employment and loss of tax base. Also, a major earthquake could cause serious damage to computer facilities. The loss of such facilities could curtail or seriously disrupt the operations of banks, insurance companies, and other elements of the financial community. In turn, this could affect the ability of local government, business and the population to make payments and purchases.

Large faults as shown in Figure 4, could affect Orange County. These include the San Andreas Fault, the Newport-Inglewood Fault, the Whittier Fault, the Elsinore Fault, and the San Jacinto Fault. Smaller faults include the Norwalk Fault and the El Modena and Peralta Hills Faults. In addition, newly studied thrust faults, such as the San Joaquin Hills Fault and the Puente Hills Fault (not shown on map) could also have a significant impact on the County. Each of the major fault systems is described briefly below.

Figure 7 - Earthquake Faults



San Andreas Fault Zone-The dominant active fault in California, it is the main element of the boundary between the Pacific and North American tectonic plates. The longest and most publicized fault in California, it extends approximately 800 miles from Northern California southward to the Cajon pass near San Bernardino, and is approximately 35 miles northeast of Orange County. Southeastward from the Cajon pass several branching faults, including the San Jacinto and Banning faults share the movement of the Crustal Plates. This fault was the source of the 1906 San Francisco earthquake, which resulted in some 700 deaths and millions of dollars in damage. It is the southern section of this fault that is currently of greatest concern to the scientific community. Geologists can demonstrate that at least eight major earthquakes (Richter magnitude 7.0 and larger) have occurred along the Southern San Andreas Fault in the past 1200 years with an average spacing in time of 140 years, plus or minus 30 years. The last such event occurred in 1857 (the Fort Tejon earthquake). Based on that evidence and other geophysical observations, the Working Group on California Earthquake Probabilities (SCEC, 1995) has estimated the probability of a similar rupture (M 7.8) in the next 30 years (1994 through 2024) to be about 50%. The range of probable Magnitudes on the San Andreas Fault Zone is reported to be 6.8 - 8.0.

Newport-Inglewood Fault Zone-Extends from the Santa Monica Mountains southeastward through the western part of Orange County to the offshore area near Newport Beach and was the source of the destructive 1933 Long Beach earthquake (magnitude 6.4), which caused 120 deaths and considerable property damage. During the past 60 years, numerous aftershocks ranging from magnitude 3.0 to 5+ have been recorded. SCEC reports probable earthquake Magnitudes for the Newport-Inglewood fault to be in the range of 6.0 to 7.4.

Elsinore Fault Zone (Whittier Fault)-Located in the northeast part of the county, this fault follows a general line easterly of the Santa Ana Mountains into Mexico. The main trace of the Elsinore Fault zone is about 112 miles long. The last major earthquake on this fault occurred in 1910 (M 6.0), and the interval between major ruptures is estimated to be about 250 years. SCEC reports probable earthquake Magnitudes for the main trace of the Elsinore fault to be in the range of 6.5 to 7.5. At the northern end of the Elsinore Fault zone, the fault splits into two segments: the 25 mile long Whittier Fault (probable Magnitudes between 6.0 and 7.2), and the 25 mile long Chino Fault (probable Magnitudes between 6.0 and 7.0).

San Jacinto Fault Zone-Located approximately 30 miles north and east of the county. The interval between ruptures on this 130 mile long fault zone has been estimated by SCEC to be between 100 and 300 years, per segment. The most recent event (1968 M6.5) occurred on the southern half of the Coyote Creek segment. SCEC reports probable earthquake Magnitudes for the San Jacinto fault zone to be in the range of 6.5 to 7.5.

San Joaquin Hills Fault-Discovered in 1999, this fault is a southwest-dipping blind thrust fault originating near the southern end of the Newport-Inglewood Fault close to Huntington Beach, at the western margins of the San Joaquin Hills. Rupture of the entire area of this blind thrust fault could generate an earthquake as large as M 7.3. In addition, a minimum average recurrence interval of between about 1650 and 3100 years has been estimated for moderate-sized earthquakes on this fault (Grant and others, 1999). Most recent activity produced an M 3.9 earthquake in San Juan Capistrano on April 23, 2012.

Puente Hills Thrust Fault-This is another recently discovered blind thrust fault that runs from northern Orange County to downtown Los Angeles. This fault is now known to be the source of the 1987 Whittier Narrows earthquake. Recent studies indicate that this fault has experienced four major earthquakes ranging in Magnitude from 7.2 to 7.5 in the past 11,000 years, but that the recurrence interval for these large events is on the order of several thousand years. A magnitude 5.1 earthquake struck on March 28, 2014 at 2109:42 hours with an epicenter 2km East of La Habra and 2km WNW of Brea, with numerous small aftershocks.

Chino Fault-The Chino fault is a right-reverse fault and is part of the Whittier-Elsinore Fault system which is located northeast of Chino Hills. The fault is approximately 17.4 miles long and extends from the Santa Ana Mountains northwest to the City of Pomona, as it joins the San Jose Fault. SCEC reports probable earthquake Magnitudes for the Chino fault to be in the range of 6.0 – 7.0. The last earthquake reported was on July 29, 2008 with a magnitude of 5.4.

In addition to the major faults described above, rupture of a number of smaller faults could potentially impact Orange County, including the Norwalk Fault (located in the north of the county in the Fullerton area), the El Modena Fault (located in the Orange area), and the Peralta Hills Fault in the Anaheim Hills area.

As indicated, there are a large variety of earthquake events that could affect Orange County. (The earliest recorded earthquake in California occurred in Orange County in 1769.) Predicted ground shaking patterns throughout Southern California for hypothetical scenario earthquakes are available from the United States Geological Survey as part of their on-going “ShakeMap” program. ShakeMaps in graphical and GIS formats are available on the USGS website at: <http://earthquake.usgs.gov/shakemap/sc/shake/archive/scenario.html>.

The most recent significant earthquake event affecting Southern California was the 1994 Northridge Earthquake. At 4:31 A.M. on Monday, January 17, a moderate, but very damaging earthquake with a magnitude of 6.7 struck the San Fernando Valley. In the following days and weeks, thousands of aftershocks occurred, causing additional damage to affected structures.

57 people were killed and more than 1,500 people seriously injured. For days afterward, thousands of homes and businesses were without electricity, tens of thousands had no gas, and nearly 50,000 had little or no water. Approximately 15,000 structures were moderately to severely damaged, 66,500 buildings were inspected and nearly 4,000 were severely damaged and over 11,000 were moderately damaged. Several collapsed bridges and overpasses created commuter havoc on the freeway system. Extensive damage was caused by ground shaking, but earthquake triggered liquefaction and dozens of fires also caused additional severe damage. This extremely strong ground motion felt in large portions of Los Angeles County resulted in record economic losses.

However, the earthquake occurred early in the morning on a holiday. This circumstance considerably reduced the potential effects. Many collapsed buildings were unoccupied, and most businesses were not yet open. The direct and indirect economic losses ran into the tens of billions of dollars.

For decades, partnerships have flourished between the USGS, Cal Tech, the California Geological Survey and universities to share research and educational efforts with Californians. Tremendous earthquake mapping and mitigation efforts have been made in California in the past two decades, and public awareness has risen remarkably during this time. Major federal, state, and local government agencies and private organizations support earthquake risk reduction. These partners have made significant contributions in reducing the adverse impacts of earthquakes. Despite the progress, the majority of California communities remain unprepared because there is a general lack of understanding regarding earthquake hazards among Californians.

To better understand the earthquake hazard, the scientific community has looked at historical records and accelerated research on those faults that are the sources of the earthquakes occurring in the Southern California region. Historical earthquake records can generally be divided into records of the pre-instrumental period and the instrumental period. In the absence of instrumentation, the detection of earthquakes is based on observations and felt reports, and is dependent upon population density and distribution. Since California was sparsely populated in the 1800s, the detection of pre-instrumental earthquakes is relatively difficult. However, two very large earthquakes, the Fort Tejon in 1857 (7.9) and the Owens Valley in 1872 (7.6) are evidence of the tremendously damaging potential of earthquakes in Southern California. In more recent times two 7.3 earthquakes struck Southern California, in Kern County (1952) and Landers (1992). The damage from these four large earthquakes was limited because they occurred in areas which were sparsely populated at the time they happened. The seismic risk is much more severe today than in the past because the population at risk is in the millions, rather than a few hundred or a few thousand persons.

History of Earthquake Events in Southern California

Since seismologists started recording and measuring earthquakes, there have been tens of thousands of recorded earthquakes in Southern California, most with a magnitude below three. No community in Southern California is beyond the reach of a damaging earthquake. Figure 5 describes the historical earthquake events that have affected Southern California.

Figure 8 - Earthquake Events in the Southern California Region

Southern California Region Earthquakes with a Magnitude 5.0 or Greater			
1769	Los Angeles Basin	1923	San Bernardino Region
1800	San Diego Region	1925	Santa Barbara
1812	Wrightwood	1933	Long Beach
1812	Santa Barbara Channel	1941	Carpinteria
1827	Los Angeles Region	1952	Kern County
1855	Los Angeles Region	1954	W. of Wheeler Ridge
1857	Great Fort Tejon Earthquake	1971	San Fernando
1858	San Bernardino Region	1973	Point Mugu
1862	San Diego Region	1986	North Palm Springs
1892	San Jacinto or Elsinore Fault	1987	Whittier Narrows
1893	Pico Canyon	1992	Landers
1894	Lytle Creek Region	1992	Big Bear
1894	E. of San Diego	1994	Northridge
1899	Lytle Creek Region	1999	Hector Mine
1899	San Jacinto and Hemet	2004	San Luis Obispo
1907	San Bernardino Region	2008	Chino Hills
1910	Glen Ivy Hot Springs	2010	Baja California
1916	Tejon Pass Region	2014	La Habra
1918	San Jacinto		

Source: US Geological Survey

Earthquake Related Hazards

Ground shaking, landslides, liquefaction, rockslides, tsunamis and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude, and the type of earthquake.

Ground Shaking

Ground shaking is the motion felt on the earth's surface caused by seismic waves generated by the earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the

epicenter (where the earthquake originates). Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.

Earthquake Induced Landslides

Earthquake induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy the roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake. Many communities in Southern California have a high likelihood of encountering such risks, especially in areas with steep slopes.

Liquefaction

Liquefaction occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state. This results in the loss of soil strength and the soil's ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these buildings and structures. Many communities in Southern California are built on ancient river bottoms and have sandy soil. In some cases this ground may be subject to liquefaction, depending on the depth of the water table. Map 22 shows the areas of Orange County that may be susceptible to liquefaction. See also the California Geological Survey website at http://gmw.consrv.ca.gov/shmp/html/pdf_maps_so.html

Tsunami

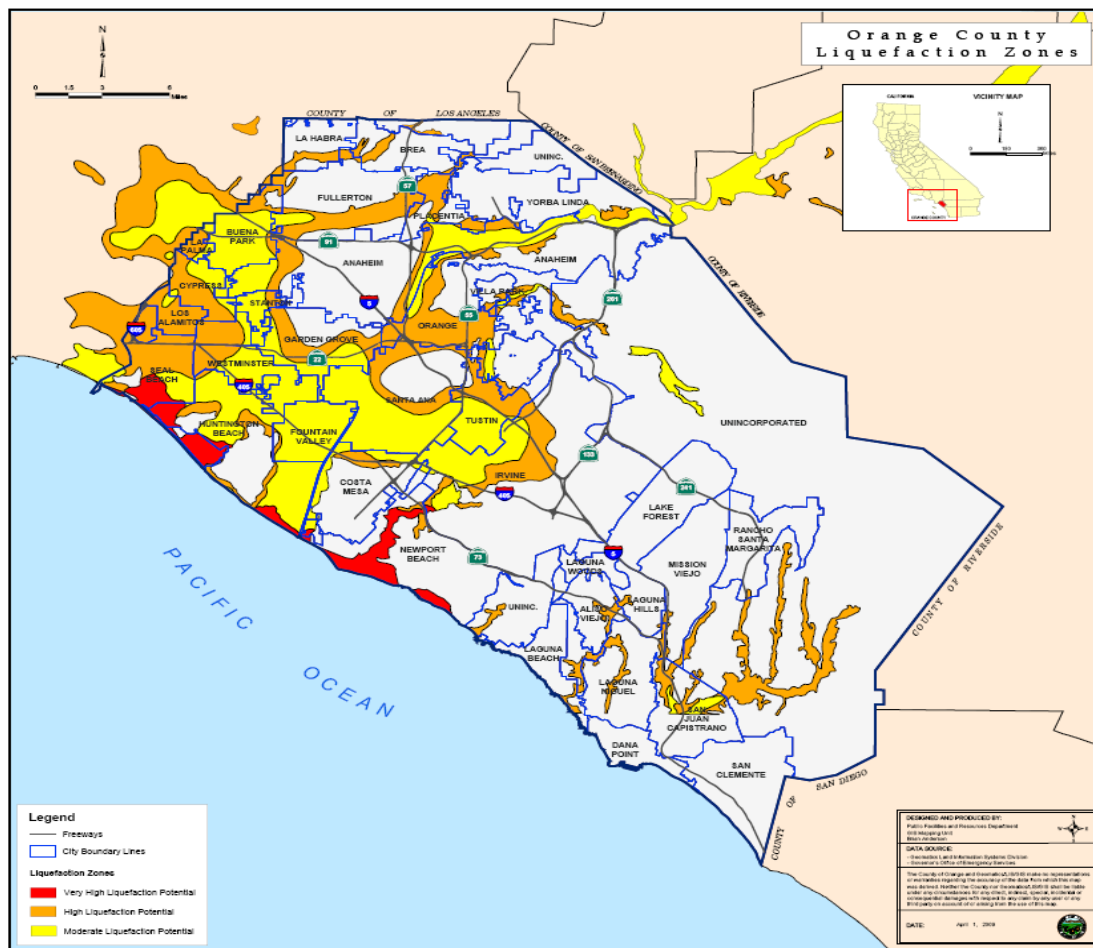
A tsunami is a powerful wave event that is generated in the ocean. These are normally caused by seismic events that uplift the underwater terrain, such as in subduction zones. Such a tsunami normally requires an M 7.2 or greater subduction zone earthquake in order to be generated. Tsunamis also usually involve a series of waves instead of a single wave. When these waves sweep ashore, they can devastate all but the strongest structures. Earthquakes are not the only cause of tsunamis; they can also be caused by landslides that disrupt a large volume of water, either from above the water or underwater. They can also be generated by underwater volcanic eruptions.

See also the California Geological Survey website at http://gmw.consrv.ca.gov/shmp/html/pdf_maps_so.html.

Amplification

Soils and soft sedimentary rocks near the earth's surface can modify ground shaking caused by earthquakes. One of these modifications is amplification. Amplification increases the magnitude of the seismic waves generated by the earthquake. The amount of amplification is influenced by the thickness of geologic materials and their physical properties. Buildings and structures built on soft and unconsolidated soils can face greater risk. Amplification can also occur in areas with deep sediment filled basins and on ridge tops.

Figure 9 – Liquefaction Map



Earthquake Hazard Assessment

In California, many agencies are focused on seismic safety issues: the State's Seismic Safety Commission, the Applied Technology Council, California Office of Emergency Services (Cal OES), United States Geological Survey, Cal Tech, the California Geological Survey, as well as a number of universities and private foundations.

These organizations, in partnership with other state and federal agencies, have undertaken a rigorous program in California to identify seismic hazards and risks including active fault identification, bedrock shaking, tsunami inundation zones, ground motion amplification, liquefaction, and earthquake induced landslides. Seismic hazard maps have been published and are available for many communities in California through the State Division of Mines and Geology.

Susceptibility to Earthquake

Earthquake damage occurs because humans have built structures that cannot withstand severe shaking. Buildings, airports, schools, and lifelines (highways and utility lines) suffer damage in

earthquakes and can cause death or injury to humans. The welfare of homes, major businesses, and public infrastructure is very important. Addressing the reliability of buildings, critical facilities, and infrastructure, and understanding the potential costs to government, businesses, and individuals as a result of an earthquake, are challenges faced by Orange County.

Dams and Reservoirs

There are a total of 44 dams and reservoirs in Orange County. The ownership ranges from the federal government to Homeowner Associations. These dams can hold billions of gallons of water in reservoirs. The major reservoirs are designed to protect Southern California from flood waters and to store domestic water. Seismic activity can compromise the dam structures resulting in catastrophic flooding.

Buildings

The built environment is susceptible to damage from earthquakes. Buildings that collapse can trap and bury people. Lives are at risk and the cost to clean up the damage is great. In most California communities, including Orange County, many buildings were built before 1993 when building codes were not as strict. In addition, retrofitting is not required except under certain conditions and can be expensive. Therefore, the number of buildings at risk remains high. The California Seismic Safety Commission makes annual reports on the progress of the retrofitting of unreinforced masonry buildings.

Infrastructure and Communication

Residents in Orange County commute frequently by automobiles and public transportation such as buses and light rail. An earthquake can greatly damage bridges and roads, hampering emergency response efforts and the normal movement of people and goods. Damaged infrastructure strongly affects the economy of the community because it disconnects people from work, school, food, and leisure, and separates businesses from their customers and suppliers.

Bridge Damage

Even modern bridges can sustain damage during earthquakes, leaving them unsafe for use. Some bridges have failed completely due to strong ground motion. Bridges are a vital transportation link as even minor damages can make some areas inaccessible. Because bridges vary in size, materials, location and design, any given earthquake will affect them differently. Bridges built before the mid-1970's have a significantly higher risk of suffering structural damage during a moderate to large earthquake compared with those built after 1980 when design improvements were made.

Much of the interstate highway system was built in the mid to late 1960's. The bridges in Orange County are state, county or privately owned (including railroad bridges). Cal Trans has

retrofitted most bridges on the freeway systems; however, there are still some county maintained bridges that are not retrofitted. The Federal Highway Administration requires that bridges on the National Bridge Inventory be inspected every 2 years. Caltrans checks when the bridges are inspected because they administer the Federal funds for bridge projects.

Damage to Lifelines

Lifelines are the connections between communities and outside services. They include water and gas lines, transportation systems, electricity and communication networks. Ground shaking and amplification can cause pipes to break open, power lines to fall, roads and railways to crack or move, and radio and telephone communication to cease. Disruption to transportation makes it especially difficult to bring in supplies or services. Lifelines need to be usable after earthquakes to allow for rescue, recovery, and rebuilding efforts and to relay important information to the public.

Disruption of Critical Services

Critical facilities include police stations, fire stations, hospitals, shelters, and other facilities that provide important services to the community. These facilities and their services need to be functional after an earthquake event.

Businesses

Seismic activity can cause great loss to businesses, both large-scale corporations and small retail shops. When a company is forced to stop production for just a day, the economic loss can be tremendous, especially when its market is at a national or global level. Seismic activity can create economic loss that presents a burden to large and small shop owners who may have difficulty recovering from their losses.

Forty percent of businesses do not reopen after a disaster and another twenty-five percent fail within one year according to the Federal Emergency Management Agency (FEMA). Similar statistics from the United States Small Business Administration indicate that over ninety percent of businesses fail within two years after being struck by a disaster.

The Institute of Business and Home Safety has developed “Open for Business,” which is a disaster planning toolkit to help guide businesses in preparing for and dealing with the adverse effects of natural hazards. The kit integrates protection from natural disasters into the company's risk reduction measures to safeguard employees, customers, and the investment itself. The guide helps businesses secure human and physical resources during disasters and helps to develop strategies to maintain business continuity before, during, and after a disaster occurs.

Death and Injury

Death and injury can occur both inside and outside of buildings due to collapsed buildings and falling equipment, furniture, debris, and structural materials. Downed power lines and broken water and gas lines can also endanger human life.

Fire

Downed power lines or broken gas mains can trigger fires. When fire stations suffer building or lifeline damage, quick response to extinguish fires is less likely. Furthermore, major incidents will demand a larger share of resources, and initially smaller fires and problems will receive little or insufficient resources in the initial hours after a major earthquake event. Loss of electricity may cause a loss of water pressure in some communities, further hampering firefighting ability.

Debris

After damage to a variety of structures, a considerable amount of time is spent cleaning up brick, glass, wood, steel or concrete building elements, office and home contents, and other materials. Developing a strong debris management strategy is essential in post-disaster recovery. Occurrence of a disaster does not exempt Orange County from compliance with AB 939 regulations which require recycling debris.

2.2.7 Excessive Temperatures

Additional information can be found in the County and OA Excessive Heat Annex.

Excessive Heat Emergencies

The July 2006 excessive heat event in California was responsible for the death of 140 people over a 13 day period. While this emergency did not include major damage to infrastructure like the 1989 Loma Prieta and the 1994 Northridge earthquakes, approximately twice the number of human deaths were credited to the excessive heat event. Excessive heat can be less dramatic and more deadly.

Excessive heat emergencies develop slowly and may take a number of days of oppressive heat to have a significant or quantifiable impact. Excessive heat events don't strike victims immediately, but rather the cumulative effect slowly affects the body's ability to adapt with the possibility of death for some vulnerable populations.

In 2015, there was one activation of the Orange County Excessive Heat Annex, August 14th through August 16th.

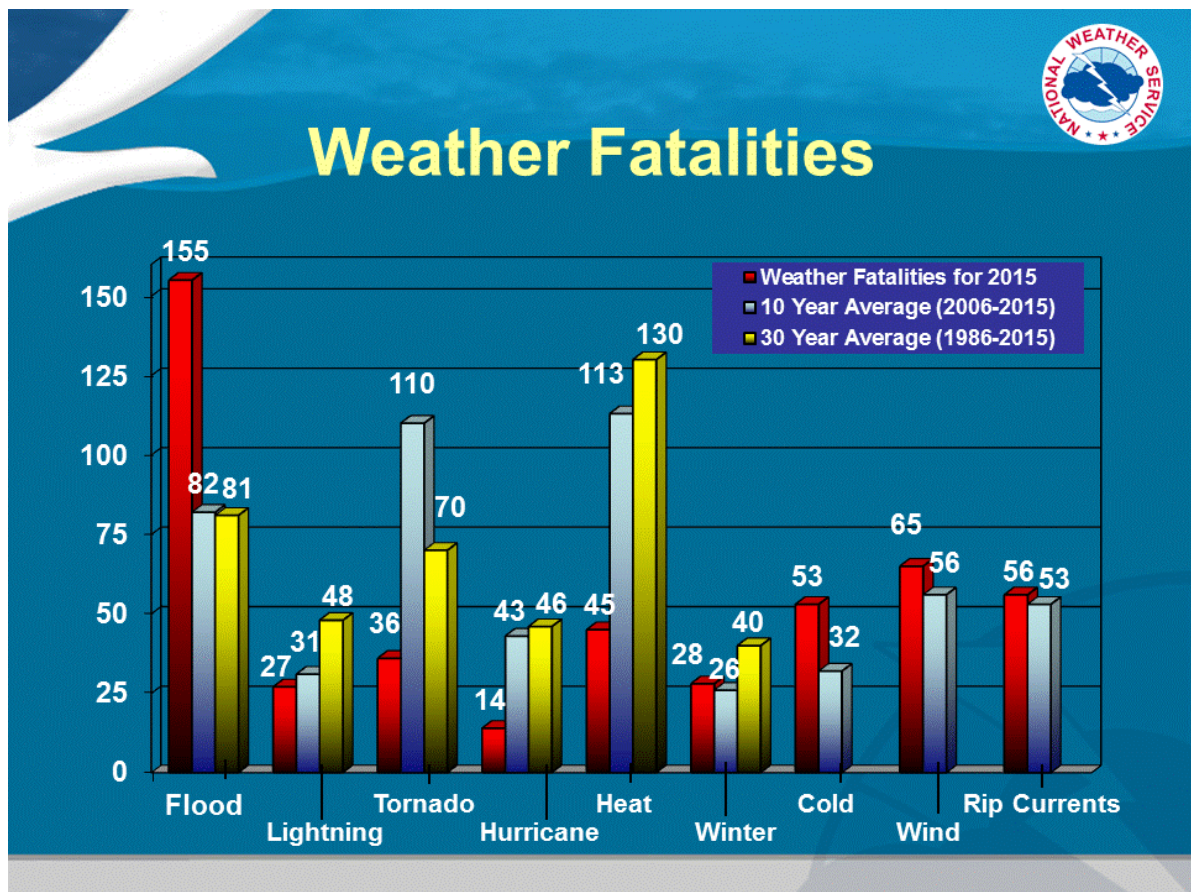
The U.S. Natural Hazard Statistics provide information on fatalities, injuries and damages caused by weather related hazards. These statistics are compiled by the Office of Services and the National Climatic Data Center utilizing data from the National Weather Service (NWS) forecast offices in the 50 states, Puerto Rico, Guam and the Virgin Islands. The following information provided in figure 9, compares fatalities of different types of weather events.

Excessive Cold Weather Emergencies

While cold weather is regarded as a rarity in Southern California, it does occur and poses a hazard to various populations. January of 2007, was one of the coldest years ever in the state of California. The NWS advised the temperatures would drop, reaching the high teens to low 20s in most areas at night, and continued daytime lows in the mid-40s. This prompted Governor Schwarzenegger to call upon Californians to take common sense steps to prepare for the cold and freezing temperatures, by preparing cold weather safety tips. But not all Californians have the ability to keep warm. Therefore, the state made 11 National Guard armories statewide available and began looking at other facilities to utilize during the extreme cold weather event.

Both Excessive Heat and Cold events have impacted the Southern California region in recent history. The National Weather Service maintains records of fatalities caused by weather phenomenon. In 2015, there were 45 deaths nationally due to heat related illnesses. The ten year average for heat deaths stands at 113 per year nationally.

Figure 10 – Weather Fatalities



The U.S. Natural Hazard Statistics provide statistical information on fatalities, injuries and damages caused by weather related hazards. These statistics are compiled by the Office of Services and the National Climatic Data Center from information contained in Storm Data, a report comprising data from NWS forecast offices in the 50 states, Puerto Rico, Guam and the Virgin Islands.

Heat Index Readings & Associated Health Risks

The heat index captures how hot the heat- humidity combination feels to humans. As relative humidity increases, the air seems warmer than it actually is because the body is less able to cool itself via evaporation of perspiration. As the heat index rises, so do health risks.

- When the heat index is 90°F, heat exhaustion is possible with prolonged exposure and/or physical activity.
- When it is 90°-105°F, heat cramps or heat exhaustion is probable with the possibility of heatstroke, with prolonged exposure and/or physical activity.
- When it is 105°-129°F, sunstroke, heat cramps or heat exhaustion is likely, and heatstroke is possible with prolonged exposure and/or physical activity.

- When it is 130°F and higher, heatstroke and sunstroke are excessively likely with continue exposure. Physical activity and prolonged exposure to the heat increase the risks.

Figure 11 – Heat Index

THE HEAT INDEX																					
Air Temp (° F)	Relative Humidity (%)																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
122°	107	112	119	126	135	143															
119°	106	109	115	121	128	136															
116°	104	107	112	117	123	130	138	146													
113°	102	105	109	112	116	123	129	137	145												
110°	99	102	105	108	112	117	123	130	137	143	152										
107°	96	99	101	104	107	112	117	122	128	134	141										
104°	94	96	99	101	104	107	111	115	120	126	132	136	144								
101°	92	94	97	98	100	102	105	109	113	118	123	130	135								
98°	89	91	93	94	85	98	100	103	106	109	113	118	123	130	137						
95°	87	88	90	91	92	93	95	98	99	103	106	110	114	119	124	130	136				
92°	85	85	87	88	88	89	90	92	94	97	99	102	105	108	113	117	122	127	131		
89°	82	83	84	84	85	86	87	88	89	91	93	95	97	100	103	106	110	114	118	122	126
86°	79	80	82	82	83	83	84	85	85	87	88	90	92	94	96	97	100	103	105	108	112
83°	76	77	78	79	80	81	81	82	82	83	84	85	86	88	90	91	94	95	96	99	103
80°	73	74	75	76	77	77	78	78	79	80	81	81	82	83	85	86	86	87	88	89	91
77°	71	71	72	73	74	74	75	75	76	77	77	78	79	79	80	81	82	83	84	84	85
Exposure to full sunshine can increase Heat Index values by up to 15° F.																					
Heat Index	Category		Possible heat disorders for people in high risk groups																		

130°F +	Excessive Danger	Heatstroke risk excessively high with continued exposure.
105° - 129°F	Danger	Sunstroke, heat cramps and heat exhaustion likely, heatstroke possible with prolonged exposure and/or physical activity.
90° - 105°F	Excessive Caution	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
80° - 90°F	Caution	Fatigue possible with prolonged exposure and/or physical activity.

Orange County Weather Patterns

In Orange County, the temperature pattern can vary greatly between coastal and inland cities. While the temperature at Huntington Beach may be in the low 80s, the City of Brea could be in the upper 90s. Because of this variance, it is important for cities to monitor the weather situation.

Health Information

Excessive heat can lead to medical conditions impacting community members. When the body's ability to shed heat is compromised, a heat-related disorder such as heat cramps, heat exhaustion or heat stroke may develop.

Like heat, excessive cold temperatures can also lead to serious medical conditions such as hypothermia, frostbite and eventually even death.

The reaction and severity of an illness caused by an Excessive Heat or Cold Event tends to increase with age. Other persons who may have a heightened sensitivity to excessive temperatures include young children, people with disabilities or pre-existing medical conditions, and the homeless who may lack the resources to seek shelter from extreme conditions.

To provide quantitative information for flood warning and detection, Orange County began installing its ALERT (Automated Local Evaluation in Real Time) system in 1983. Operated by the Environmental Resources group at OC Public Works in cooperation with the National Weather Service, ALERT uses remote sensors located in rivers, channels and creeks to transmit environmental data to a central computer in real time. Sensors are installed along the Santa Ana River, San Juan Creek, Arroyo Trabuco Creek, Oso Creek, Aliso Creek, as well as flood control channels and basins. The field sensors transmit hydrologic and other data (e.g., precipitation data, water levels, temperature, wind speed, etc.) to base station computers for display and analysis. In addition, seven pump stations (Huntington Beach, Cypress, Seal Beach, Los Alamitos, Rossmoor, Harbor-Edinger, and South Park) regulating storm water discharge to flood control channels are also instrumented. Their monitoring system includes automated call-out of operations personnel in the event of a crisis.

Activation of the OC Public Works Department Operations Center (DOC) takes place when heavy rainfall occurs or is predicted, and/or when storm runoff conditions indicate probable flood damage. The DOC monitors the situation on a 24-hour basis. Response may include patrols of flood control channels and deployment of equipment and personnel to reinforce levees when needed. DOC activation and various emergency response actions are based on the following Emergency Readiness Stages:

- Stage I - Mild rainfall (watch stage).
- Stage II - Heavy rainfall or potential thereof. OC Public Works Department Operations Center activated and surveillance of flood control facilities in effect.
- Stage III - Continued heavy rainfall or deterioration of facilities. County Public Works Director in charge. County's personnel assume assigned emergency duties.
- Stage IV - Conditions are or are likely to be beyond County control. Board of Supervisors, or Director of Emergency Services when the Board is not in session, proclaims Local Emergency and assumes special powers. Mutual Aid requested.
- Stage V - Damage beyond control of all local resources. State forces are required. Governor requested to proclaim State of Emergency.
- Stage VI - Damage beyond control of local and State resources. Federal forces are required. President requested to declare Major Disaster.

References:

Gold, Scott, "Disaster Prompted \$1.3 billion Effort to Tame Santa River, Protect Basin," Los Angeles Times, October 3, 1999.

United States Army Corps of Engineers, Standard Project Flood Determinations, U.S. Army Corps of Engineers, Publication number EM 1110-2-141 (1965).

Orange County Flood Threat

The Santa Ana River, flowing through the heart of Orange County to the Pacific Ocean is the county's greatest flood threat. Research of flooding in Orange County illustrates these flood hazard issues, sighting loss of life as well as damage to personal and public property.

One such flood occurred in 1938, wiping out roads, bridges, and railroads near the river when an 8-foot wall of water swept out of the Santa Ana Canyon. Anaheim, Santa Ana, and Garden Grove were hardest hit and 34 lives were lost because of the flood. The flood and its damage were a catalyst for construction of Prado Dam, developed as part of the Army Corps of Engineers flood control protection plan. Government officials estimated that today without the protection of Prado Dam, a flood of this magnitude would cause as many as 3,000 deaths and top \$40 billion in damages. More than 110 acres would be flooded with 3 feet of water and 255,000 structures damaged as documented by S. Gold, in the Los Angeles Times, in 1999.

The Army Corps of Engineers, tasked with the project of increasing the level of protection at Prado Dam from the current 70-year level to a 190-year level of protection, started the final phase of construction in 2012 for the area of the River downstream of Prado Dam (called Reach 9). It is anticipated that the construction of all phases of Reach 9 will be completed in 2018. Overall completion of the Prado Dam project, which includes dikes within the Prado Basin and raising of the spillway, is anticipated to be completed in 2021. Further, portions of the County not inundated by river overflow during a 100-year event could be subject to flooding from overflow of water drainage facilities currently inadequate for carrying the 100-year discharge.

- The Santa Ana River Mainstream Project (SARP) is located along a 75-mile reach of the Santa Ana River in Orange, Riverside and San Bernardino Counties. The plan for flood control improvements includes three principal features:
 - Lower river channel modification for flood control along the 30 miles of the Santa Ana River from Prado Dam to the Pacific Ocean.
 - Construction of Seven Oaks Dam (about 38 miles upstream of the existing Prado Dam) with a gross reservoir storage capacity of 145,600 acre-feet.
 - Enlargement of Prado Dam to increase reservoir storage capacity from 217,000 acre-feet to 362,000 acre-feet.

Other areas subject to flooding during severe storms include areas adjacent to Bolsa Chica Channel, Anaheim-Barber, Stanton Storm Channel, Santa Ana-Santa Fe, Cañada, Paularino, Westminster, Trabuco, Borrego, Serrano, Laguna Canyon, Atwood Channel, Brea Creek Channel, Fullerton Creek Channel, Carbon Creek Channel, San Juan Creek Channel, and East Garden Grove-Wintersburg Channel. Areas adjacent to Santiago Creek and Collins Channel in the central portion of the County and large portions of the San Diego Creek watershed in the City of

Irvine and unincorporated areas of the County are also subject to inundation. In the southern portion of the county, canyon areas are subject to flooding. However, with increased development in these areas the flood hazard becomes even greater.

Flood damages within the Westminster-East Garden Grove Watershed, along the East Garden Grove-Wintersburg Channel and Westminster Channel affect residential, commercial, and industrial development within the cities of Westminster, Garden Grove, Santa Ana, Huntington Beach, Seal Beach, and Fountain Valley. The East Garden Grove-Wintersburg Channel was originally constructed in the early 1960s as a mixture of earthen, riprap, and concrete-lined trapezoidal section with short reaches of concrete rectangular and covered box facilities. It was designed to carry 25-year peak discharge which was the design standard at the time the channels were constructed. With urbanization growth throughout Orange County and congressional approval of the 1968 National Flood Insurance Program and 1973 amendment, the existing capacity has become deficient and needs to be improved to convey a 100-year peak discharge. The hundreds of homes in the downstream segment of the channel system would be subjected to an estimated 8-foot depth of flooding if a 100-year storm event occurred today. The winter storms of 2005 in this area severely eroded the maintenance roads and levee banks. Constructing this channel system to its ultimate condition will alleviate the floodplain and mitigate 100-year storm events to containment within the channel thus relieving mandatory flood insurance and will create potential environmental enhancements for the watershed.

Portions of the downstream channel have been improved; however continued work on portions of the channel includes, but is not limited to: removing and hauling existing riprap lining, excavating material from the channel sides, constructing and improving maintenance roadways, and reinforcing the levee with soil-cement mixed columns in combination with sheet pile installations.

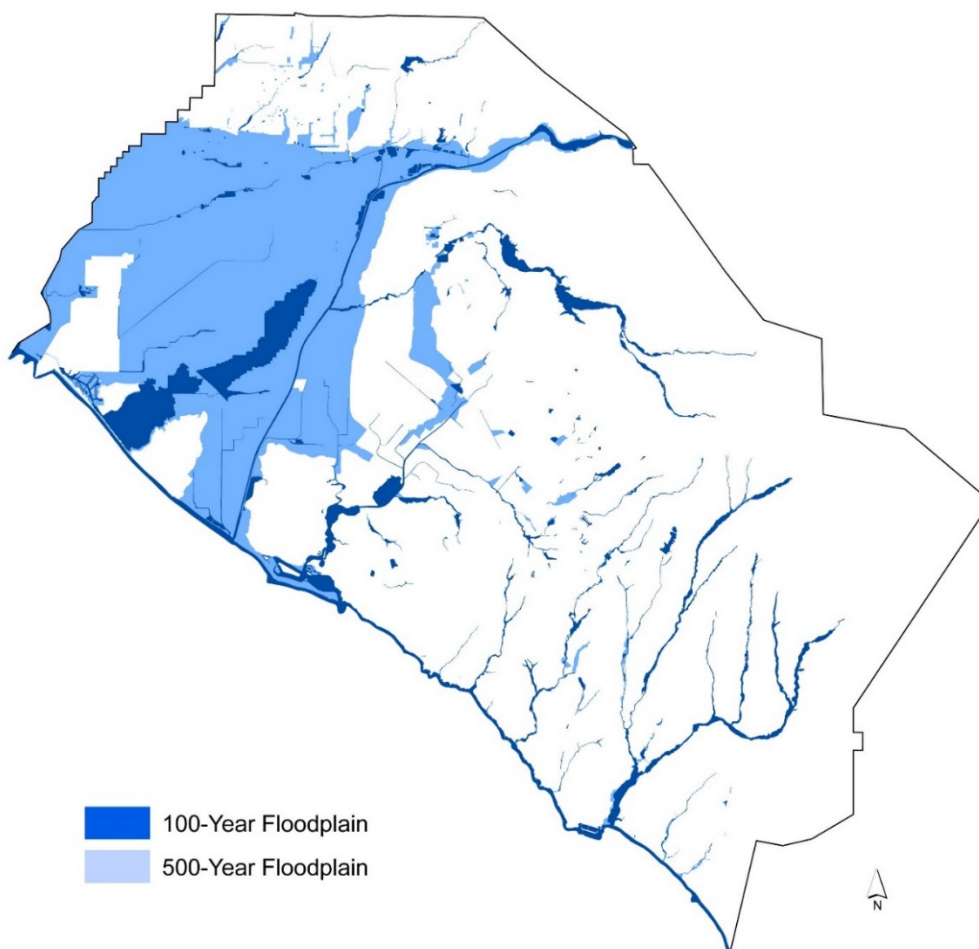
San Juan Creek and Trabuco Creek Channels over the years have sustained numerous damages caused by heavy storms, with the most recent damage occurring in January 2005 and December 2010. The damaged portions of the creek's levees were promptly repaired following the storms. However, despite these repairs, significant portions of the levees remain vulnerable to failure during major storm events while the creek's capacity remained deficient to convey the 100-year storm. OC Public Works focused its resources on devising an eight phase levee fortification program which will install steel sheet pile walls behind existing deficient channel lining. This multi-phase program will provide immediate protection against catastrophic levee failure once completed. The levee reinforcement program includes creek improvements on San Juan Creek Channel from Stonehill Drive to the I-5 Freeway and on Trabuco Creek Channel from its confluence with San Juan Creek Channel to 1,600 feet upstream of the Del Obispo Bridge. To date, four of the eight phases have been completed. The remaining segments, to be

constructed in the next few years, have been prioritized based on the District's funding allocation. Following these improvements, another phase will begin which includes additional construction needed to raise the level of protection to the desired 100-year level including improvements between Pacific Coast Highway and Stonehill Drive and remove adjacent areas out of the Federal Emergency Management Agency's (FEMA) floodplain designation.

Historic Data for Orange County

Residents reported damaging floods caused by the Santa Ana River as early as 1770. Major floods in Orange County have occurred in 1810, 1815, 1825, 1884, 1891, 1916, 1927, 1938, 1969, 1983 and 1993. The greatest flood in terms of water flow was in 1862 with an estimated flow rate of 317,000 cubic feet per second (cfs). This was three times greater than the flood of 1938 estimated at 110,000 cfs. The most damaging flood in terms of cost was the flood of 1969. The County's population had significantly increased by this time creating greater potential for loss.

Figure 13 – FEMA Q3 Flood Data for Orange County



Great Flood of 1862

The storm and flood of January 1862, called the Noachian deluge of California, were unusual in two ways: 1) the storm occurred during the very severe drought of 1856-1864 and 2) the flooding was extremely long, lasting 20 days. Under normal circumstances, major floods last no longer than a few days. The only structure left standing was a chapel called Aqua Mansa on high ground above the river. The priest rang the chapel bell and the settlers fled the rising waters. Small villages along the Santa Ana River were completely destroyed. Miraculously, there were no recorded deaths.

Great Flood of 1916

The flood on January 27, 1916 inundated a large area in Santa Ana, flooding Main Street with water 3 feet deep. The farming area, today known as City of Westminster, was also flooded. A total of six bridges, three traffic bridges and three railroad bridges washed away and four people drowned.

Great Flood of 1938

The flood of 1938 considered the most devastating of all County floods in the 20th Century, affected all of Southern California. The storm began on February 27 and lasted until March 3. In the Santa Ana Basin, 34 people died and 182,300 acres were flooded. All buildings in Anaheim were damaged or destroyed. Two major railroad bridges, seven traffic bridges, and the little town of Atwood were completely destroyed. As the Santa Ana River inundated the northwestern portion of Orange County, train service to and from Santa Ana was cancelled and communication with the outside world was essentially nonexistent. Damage exceeded \$50 million.

Great Flood of 1969

The floods of January and February were the most destructive on record in Orange County. Previous floods had greater potential for destruction, but the County was then relatively undeveloped. The intensity of the 1938 flood was greater, but of shorter duration. A drought that began in 1945 was relieved by only two wet years until the floods in 1969. An annual overdraft of 100,000 acre-feet brought the average groundwater level to 15 feet below sea level, and ocean water moved into the aquifers. Some wells along the coast began producing brackish water and had to be abandoned. <http://www.ocwd.com/html/history.htm> Rainfall was continuous from January 18-25 resulting in widespread flooding January 25-26. Orange County was declared a national disaster area on February 5. A storm on February 21-25 once again brought rain to the already saturated ground, culminating in a disastrous flood on February 25. The largest peak outflow from Santiago Reservoir since its inception in 1933 occurred in February. On February 25, the reservoir at Villa Park Dam reached its capacity. This was the first time since its construction in 1963 with a maximum outlet inflow of 11,000 cfs.

Even though the outlet conduit was discharging up to 4,000 cfs, spillway overflow occurred at 1:30 p.m. on February 25 and continued 36 hours. The maximum peak outflow from the dam reached 6,000 cfs. The safety of the dam was never threatened. However, the outflow caused serious erosion downstream in Orange and Santa Ana and in portions of parks and golf courses. Trees and debris inundated the streambed. Houses, apartments, gardens, swimming pools, and bridges eroded away. Numerous residents and volunteers, worked around the clock to remove debris, sandbag eroding embankments, cordon off danger zones, issue warnings, and make temporary repairs. U.S. Marine Corps helicopters dropped junked cars along the banks of the creek below Bristol Street in an effort to prevent further undermining of homes. A Southern Pacific Railroad bridge, water and sewer lines, a pedestrian overcrossing, and three roads washed out. Approximately 2,000 Orange and Santa Ana residents were evacuated from houses bordering Santiago Creek.

Great Flood of 1983

The presence of El Nino spawned the flood of 1983. The intense downpour concentrated in a local area and also resulted in the highest waves to crest onshore in 10 years. Meanwhile, the Santa Ana River crested at the mouth of the ocean, creating a disaster for the low-lying areas of Huntington Beach with floodwaters three to five feet deep. In addition, the pounding surf destroyed a section of the Huntington Beach Pier, resulting in a complete renovation of the pier.

Great Floods of 1993

In 1993, El Nino spawned a storm and flood. This storm was concentrated in the Laguna Canyon Channel area from Lake Forest to downtown Laguna Beach. In spite of a valiant effort to save downtown merchants by sandbagging, the stores were flooded anyway. Laguna Canyon Road was damaged extensively as well as homes and small businesses in the Laguna Canyon Channel. There were no fatalities reported.

Figure 14 – Federally Declared Flood/Storm Incidents for Orange County

Date of Declaration	Declaration Number	Incident Description
1/26/2011	1952	Winter Storms, Flooding, and Debris and Mud Flows
4/14/2005	1585	Severe Storms, Flooding, Landslides, and Mud and Debris Flows
2/4/2005	1577	Severe Storms, Flooding, Debris Flows, and Mudslides
2/9/1998	1203	Severe Winter Storms and Flooding
3/12/1995	1046	Severe Winter Storms, Flooding, Landslides, Mud Flows

1/10/1995	1044	Severe Winter Storms, Flooding, Landslides, Mud Flows
10/28/1993	1005	Fires, Mud & Landslides, Soil Erosion, Flooding
2/3/1993	979	Severe Storm, Winter Storm, Mud & Landslides, Flooding
2/25/1992	935	Snow Storm, Heavy Rain, High Winds, Flooding, Mudslide
2/5/1988	812	Severe Storms, High Tides, Flooding
2/9/1983	677	Coastal Storms, Floods, Slides, Tornadoes
2/21/1980	615	Severe Storms, Mudslides, Flooding
2/15/1978	547	Coastal Storms, Mudslides, Flooding
1/26/1969	253	Severe Storms, Flooding
2/25/1963	145	Severe Storms, Heavy Rains, Flooding
10/24/1962	138	Severe Storms, Flooding
3/6/1962	122	Floods
4/4/1958	82	Heavy Rainstorms, Flood
12/23/1955	47	Flood
2/5/1954	15	Flood and Erosion

Flooding during the 1997/1998 El Niño Storm Season affected Orange County. Extensive storm damage to private property and public infrastructure (County and cities) reached approximately \$50 million. Storm conditions caused numerous countywide mudslides, road closures, and channel erosion. Hillside erosion and mudslides forced continual clearing of County roads of fallen trees and debris. Protective measures, such as stabilizing hillside road slopes with rock or K-rail at the toe of slopes, were taken to keep the normal flow of transportation on the County's road system. County harbors, beaches, parks, and trails also sustained substantial storm damage.

High ocean waves and storm activity forced the closure of Aliso Beach Pier when it was declared unsafe to the public and as a result, eventually required demolition. The high ocean waves also severely damaged the Laguna Beach boardwalk. Flooding occurred in the city, causing injuries and two deaths as a result of water and mudflow. Lateral erosion occurred to the natural banks of Serrano Creek and Aliso Creek. Storm flows destroyed portions of San Juan Creek and Trabuco Creek levees and channel linings. The U.S. Army Corps of Engineers assumed

responsibility for the channel restoration following initial emergency response repairs made by the County. Substantial silt and sedimentation deposits at Santa Ana-Delhi and San Diego Creek Channels contributed to severe dredging problems at the Upper Newport Bay Regional Park, with costs estimated in excess of \$2 million. Major landslides in Laguna Niguel caused millions of dollars in damage. Deterioration and collapse of a culvert 25 feet beneath the asphalt forced closure of Santiago Canyon Road for three weeks.

Assistance from resources such as the Army Corps of Engineers and the Federal Highway Administration minimized the overall reimbursement from FEMA (P.L. 93-288, Stafford Act for Public Assistance). Still, the reimbursement to the County unincorporated area alone still reached approximately \$4 million.

Although the 1997/1998 floods resulted in substantial damage to Orange County, it was not unprecedented. In January 1995, a disaster was declared in the County as extremely heavy and intense rains quickly exceeded the storm runoff capacity of local drainage systems in many Orange County cities and regional Flood Control District systems. As a result, widespread flooding of homes and businesses occurred throughout these cities. There were approximately 1000 people evacuated and extensive damage sustained to both private and public property. Unincorporated areas of the county received \$12.5 million in reimbursement through Public Assistance programs.

A series of storms battered Southern California in January and February 2005. These storms were the most significant to hit Southern California since the El Niño of 1998 and caused mud slides and flooding throughout Orange County. Both state proclamations and federal declarations of disaster were made for these storms.

Orange County is in close proximity to Los Angeles, San Bernardino, Riverside, and San Diego Counties. Heavy rain affecting any one of these counties can easily affect Orange County. In addition, the towering mountains trap eastern-moving winter storms and draw out the rain. The rainwater moves rapidly down the steep slopes and across the coastal plains on its way to the ocean. Orange County averages about thirteen inches of rain a year, yet some mountain peaks in the County receive more than forty inches of precipitation annually.

Naturally, this rainfall moves rapidly downstream, often with severe consequences for anything in its path. Flood-generated debris flows roared down canyons at speeds near 40 miles per hour carrying with them walls of mud, debris, and water many feet high.

2.2.9 Hazardous Materials

Orange County continues to experience residential, employment, and economic growth. Virtually all sectors of the County's economy are users of hazardous materials that, if improperly handled, stored, transported, or disposed of, can pose health and environmental problems.

Orange County faces the potential for incidents from the stationary hazardous materials users, as well as transportation accidents, pipeline ruptures, and illegal dumping. The significance of the effects on the environment, property, or human health is dependent on the type, location, and quantity of hazardous material released. The level of exposure to hazardous materials can be understood by examining Orange County's type of businesses, commercial traffic routes, and highways.

A hazardous substance poses a threat due to its inherent characteristics. Its actual impact, however, depends on where the episode occurs and on weather, geography, population, and other site-specific conditions that influence its behavior in the environment and can vary greatly. Incidents may occur at fixed facilities where the opportunity for development of site-specific contingency plans is great. They may also occur at any place along any land, water, or air transportation route, and (in the case of vessel mishaps, aircraft accidents, agricultural chemicals and illegal dumping) may occur in unpredictable areas, relatively inaccessible by ground transportation. Further, hazardous material incidents often cause some type of transportation problem within the vicinity of the incident and may even require localized evacuation.

In Orange County, the majority of hazardous material incidents are handled prior to becoming a disaster. Hazardous material incidents require specialized technical expertise that varies depending on the materials involved and the type of incident. The resources and personnel required to react to a hazardous materials incident may involve various local, special district, state, and federal agencies.

First responders are usually fire or law enforcement services followed by HCA Environmental Health. Other local agencies may include OC Public Works, HCA Emergency Medical Services, Epidemiology, Orange County Sheriff's Department Control One (hereafter referred to as Control One), OC Waste and Recycling Department and the Orange County Agricultural Commissioner. A long list of state and federal agencies may be included as well as districts such as South Coast Air Quality Management District, Orange County Sanitation Districts, Orange County Water & Irrigation Districts and private agencies, associations and companies. Each agency is expected to provide on-scene assistance consistent with its operational capabilities, when requested.

With the amount of hazardous materials of all descriptions generated, stored, and transported through the County, access of these materials to potential terrorists is a concern. A terrorist acting alone or in a group has the potential for attaching explosive devices to the various modes of transportation used throughout the County. Such an incident will cause a major hazardous materials spill that can be timed to create the most disruption. Further, such an incident may not occur within the County geographical boundaries but in some other County when the transport of the materials begins within Orange County. Another consideration for potential terrorist activity would be in the theft of quantities of materials that could be used to develop explosive devices, “dirty bombs,” or just the simple release of the materials within highly populated areas such as sporting events, amusement parks, and shopping malls.

Hazardous Materials-Transportation

Highways and freeways are the major transportation routes in Orange County. Over 250 miles of interstate highway, including the third busiest highway transportation corridor in the country (Highway 5), and 719 miles of other major transportation routes run through Orange County. The CHP has designated these highways as hazardous materials transportation corridors.

In addition to the freeway system, Orange County’s major transportation routes include surface streets and railroads. These routes are used daily to transport hazardous materials from suppliers to users. On these routes, transportation accidents involving hazardous materials can occur. The threats posed by a transportation accident involving hazardous materials include explosions, physical contact by emergency response personnel, and exposure to the public via airborne exposure. In the late ‘70s and again in the early ‘90s large freight trains in the Cajon Pass lost their ability to slow down as they came down the grade into San Bernardino. In both instances the trains derailed resulting in hazardous materials spills and associated damage. Derailments in Orange County involving hazardous materials can result in the closure of freeways and surface streets, an extreme hazard to the public and the first responders, and evacuation of large areas.

The Federal Department of Transportation (DOT) is the primary regulatory authority for the interstate transport of hazardous materials. The DOT regulations establish criteria for safe handling procedures (e.g., packaging, marking, labeling, placarding, and routing). Criteria also exist regarding personnel qualifications and training, inspection requirements, and equipment specifications. The CHP enforces regulations related to the intrastate transport of hazardous materials and hazardous wastes.

Another major hazardous materials transportation mode in Orange County is that of underground pipelines. These pipelines predominately transport crude or refined petroleum, gasoline, and jet fuel. The major threats posed by this transportation method include

explosions, fire, and contamination of groundwater potentially used as a source of drinking water. The regulatory agency responsible for enforcement as well as inspection of pipelines transporting hazardous materials is the California State Fire Marshal's Office, Hazardous Liquid Pipeline Division. Under mandate from Title 49 of the Code of Federal Regulation, the agency is charged with compliance review of:

- Inspection and enforcement
- Pipeline failure and investigation
- Pipeline training and certification

The local municipal fire departments have emergency response authority for responding to hazardous materials incidents in Orange County.

Figure 15 - Highways and Major Arterial Network in Orange County



Hazardous Materials-Management

Underground Storage Tank Program

The Orange County Health Care Agency serves as the Certified Unified Program Agency (CUPA) for this geographic region. The CUPA is tasked by the Secretary for Environmental Protection to implement and enforce the underground storage tank codes set forth in Chapter 6.7 of the

California Health & Safety Code. The Hazardous Material Disclosure and Business Emergency Plan programs require Orange County businesses to:

- Inventory their hazardous materials,
- Develop a site map,
- Develop an emergency plan, and
- Implement a training program for employees.

OCHCA, Environmental Health Division, administers the Underground Storage Tank (UST) inspection program in most cities of Orange County, with the exception of La Habra, Fullerton, Costa Mesa Huntington Beach, Newport Beach, Fountain Valley and Orange. As the Certified Unified Program Agency (CUPA), Environmental Health is tasked by the Secretary for Environmental Protection to implement and enforce the underground storage tank codes. To this end, specialists from Environmental Health inspect underground storage tanks, monitoring equipment and compliance documents of UST systems to ensure that these systems are in compliance with the applicable laws and regulations. The comprehensive program, implemented by HCA, includes conducting regular inspections of underground tanks, oversight of new tank installations, issuance of permits, regulation of repair and closure of tanks, ensuring the mitigation of leaking underground storage tanks, pursuing enforcement action, and educating and assisting the industries and general public about the laws and regulations governing underground storage tanks.

The Hazardous Material Disclosure and Business Emergency Plan programs require businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity, report this information to the local implementing agency called the Certified Unified Program Agency (CUPA). The purpose of the programs is to prevent or minimize damage to public health and safety and the environment, from a release or threatened release of hazardous materials. These locally implemented programs also satisfy federal community right-to-know laws.

Hazardous Materials Disclosure Program

The Hazardous Materials Disclosure Program began as a direct result of two major incidents: the tragedy in Bhopal, India in December 1984, and the three-day fire at the Larry Fricker pesticide warehouse in Anaheim in June 1985. On November 5, 1985, the Board of Supervisors adopted an ordinance relating to hazardous materials disclosure (Orange County Code, Title 4, Division 3, Article 4).

Chemical Inventory: Title 42, Section 11022 of the United States Code and Chapter 6.95 of the California Health and Safety code require the reporting of hazardous materials when used or stored in certain quantities. These regulations require that businesses to complete and file a

chemical inventory to disclose hazardous materials stored, used or handled on site. This disclosure information assists emergency responders in planning for and handling emergencies which involve hazardous materials. The program objective is to safeguard lives and minimize property loss.

Business Emergency Plan (BEP): Chapter 6.95 of the California Health and Safety code also requires that businesses which use, store or handle hazardous materials file an emergency plan indicating their preparations for and actions in an emergency. The information is also shared with emergency response personnel to mitigate a release and to minimize harm or damage to human life, the environment, and property.

The information disclosed by the industrial community is stored in a computerized data base and is made available to fire and police response personnel, OCHCA, and all hazardous materials response teams in Orange County.

- Acting as a clearinghouse for information and increase public awareness of hazardous materials issues/activities.

2.2.10 Landslide and Mudslide

Landslide is a general term for a falling mass of soil or rocks; vertical movement of small pieces of soil. Mudslide (mudflow) is a flow of very wet rock and soil. The primary effects of mudslides/landslides can include:

- Abrupt depression and lateral displacement of hillside surfaces over distances of up to several hundreds of feet.
- Disruption of surface drainage.
- Blockage of flood control channels and roadways.
- Displacement or destruction of improvements such as roadways, buildings, and water wells.

Landslide Characteristics

A landslide is defined as, the movement of a mass of rock, debris or earth down a slope. Landslides are a type of 'mass wasting' which denotes any down slope movement of soil and rock under the direct influence of gravity. The term 'landslide' encompasses events such as rock falls, topples, slides, spreads, and flows. Landslides can be initiated by rainfall, earthquakes, volcanic activity, changes in groundwater, disturbance and change of a slope by man-made construction activities, or any combination of these factors. Landslides can also occur underwater, causing tidal waves and damage to coastal areas. These landslides are called submarine landslides.

The size of a landslide usually depends on the geology and the initial cause of the landslide. Landslides vary greatly in their volume of rock and soil, the length, width, and depth of the area affected, frequency of occurrence, and speed of movement. Some characteristics that determine the type of landslide are slope of the hillside, moisture content, and the nature of the underlying materials. Landslides are given different names, depending on the type of failure and their composition and characteristics.

Slides move in contact with the underlying surface. These movements include rotational slides where sliding material moves along a curved surface and translational slides where movement occurs along a flat surface. These slides are generally slow moving and can be deep. Slumps are small rotational slides that are generally shallow. Slow-moving landslides can occur on relatively gentle slopes and can cause significant property damage, but are far less likely to result in serious injuries than rapidly moving landslides.

Failure of a slope occurs when the force that is pulling the slope downward (gravity) exceeds the strength of the earth materials that compose the slope. They can move slowly, (millimeters per year) or can move quickly and disastrously, as is the case with debris-flows. Debris-flows can travel down a hillside of speeds up to 200 miles per hour (more commonly, 30 – 50 miles

per hour), depending on the slope angle, water content, and type of earth and debris in the flow. These flows are initiated by heavy, usually sustained, periods of rainfall, but sometimes can happen as a result of short bursts of concentrated rainfall in susceptible areas. Burned areas charred by wildfires are particularly susceptible to debris flows, given certain soil characteristics and slope conditions.

Debris Flow

A debris or mud flow is a river of rock, earth and other materials, including vegetation that is saturated with water. This high percentage of water gives the debris flow a very rapid rate of movement down a slope. Debris flows can attain speeds greater than 20 miles per hour, and can often move much faster. This high rate of speed makes debris flows extremely dangerous to people and property in their path.

Earth flows are plastic or liquid movements in which land mass (e.g. soil and rock) breaks up and flows during movement. Earthquakes often trigger flows. Debris flows normally occur when a landslide moves down-slope as a semi-fluid mass scouring, or partially scouring soils from the slope along its path. Flows are typically rapid moving and also tend to increase in volume as they scour out the channel. Flows often occur during heavy rainfall, can occur on gentle slopes, and can move rapidly for large distances.

Landslides are a common hazard in California. Weathering and the decomposition of geologic materials produces conditions conducive to landslides and human activity further exacerbates many landslide problems. Many landslides are difficult to mitigate, particularly in areas of large historic movement with weak underlying geologic materials. As communities continue to modify the terrain and influence natural processes, it is important to be aware of the physical properties of the underlying soils as they, along with climate, create landslide hazards. Even with proper planning, landslides will continue to threaten the safety of people, property, and infrastructure, but without proper planning, landslide hazards will be even more common and more destructive.

The increasing scarcity of buildable land, particularly in urban areas, increases the tendency to build on geologically marginal land. Additionally, hillside housing developments in Southern California are prized for the view lots that they provide.

Rock falls occur when blocks of material come loose on steep slopes. Weathering, erosion, or excavations, such as those along highways, can cause falls where the road has been cut through bedrock. They are fast moving materials free falling or bouncing down a slope. In falls, material is detached from a steep slope or cliff. The volume of material involved is generally small, but large boulders or blocks of rock can cause significant damage.

Landslides are often triggered by periods of heavy rainfall. Earthquakes, subterranean water flow and excavations may also trigger landslides. Certain geologic formations are more susceptible to landslides than others. Human activities, including locating development near steep slopes, can increase susceptibility to landslide events. Landslides on steep slopes are more dangerous because movements can be rapid.

“Although landslides are a natural geologic process, the incidence of landslides and their impacts on people can be exacerbated by human activities. Grading for road construction and development can increase slope steepness. Grading and construction can decrease the stability of a hill slope by adding weight to the top of the slope, removing support at the base of the slope, and increasing water content. Other human activities effecting landslides include: excavation, drainage and groundwater alterations, and changes in vegetation.”⁹

Wildland fires in hills covered with chaparral are often a precursor to debris flows in burned out canyons. The extreme heat of a wildfire can create a soil condition in which the earth becomes impervious to water by creating a waxy-like layer just below the ground surface. Since the water cannot be absorbed into the soil, it rapidly accumulates on slopes, often gathering loose particles of soil in to a sheet of mud and debris. Debris flows can often originate miles away from unsuspecting persons, and approach them at a high rate of speed with little warning.

Natural processes can cause landslides or re-activate historical landslide sites. The removal or undercutting of shoreline-supporting material along bodies of water by currents and waves produces countless small slides each year. Seismic tremors can trigger landslides on slopes historically known to have landslide movement. Earthquakes can also cause additional failure (lateral spreading) that can occur on gentle slopes above steep streams and riverbanks.

Locations at risk from landslides or debris flows include areas with one or more of the following conditions:

- On or close to steep hills.
- Steep road-cuts or excavations.
- Existing landslides or places of known historic landslides (such sites often have tilted power lines, trees tilted in various directions, cracks in the ground, and irregular-surfaced ground).
- Steep areas where surface runoff is channeled, such as below culverts, V-shaped valleys, canyon bottoms, and steep stream channels.
- Fan-shaped areas of sediment and boulder accumulation at the outlets of canyons.
- Canyon areas below hillside and mountains that have recently (within 1-6 years) been subjected to a wildland fire.

⁹ “Planning for Natural Hazards: The Oregon Technical Resource Guide, Department of Land Conservation and Development, (2000), Chapter 5.

Although landslides are a natural occurrence, human impacts can substantially affect the potential for landslide failures in Orange County. Proper planning and geotechnical engineering can be exercised to reduce the threat of safety of people, property, and infrastructure.

Landslides as a Threat to Orange County

Landslides are a serious geologic hazard in almost every state in America. Nationally, landslides cause 25 to 50 deaths each year. The best estimate of direct and indirect costs of landslide damage in the United States range between \$1 and \$2 billion annually as noted in Dennis Miletti's Disasters by Design: A Reassessment of Natural Hazards in the United States. As a seismically active region, California has had a significant number of locations impacted by landslides. Some landslides result in private property damage; other landslides impact transportation corridors, fuel and energy conduits, and communication facilities. They can also pose a serious threat to human life.

Historic Southern California Landslides

The following landslide accounts comprise only a fraction of the Southern California landslide history. These are provided as a sample for mitigation planning.

1978 Bluebird Canyon, Orange County

Cost, \$52.7 million (2000 dollars) 60 houses destroyed or damaged. Unusually heavy rains in March of 1978 may have contributed to initiation of the landslide. Although the 1978 slide area was approximately 3.5 acres, it is suspected to be a portion of a larger, ancient landslide.

1980 Southern California

Slides: \$1.1 billion in damage (2000 dollars). Heavy winter rainfall in 1979-80 caused damage in six Southern California counties. In 1980, the rainstorm started on February 8th. A sequence of 5 days of continuous rain and 7 inches of precipitation fell by February 14th. Slope failures were beginning to develop by February 15th and then very high-intensity rainfall occurred on February 16. As much as 8 inches of rain fell in a 6 hour period in many locations.

1983 San Clemente, California, Orange County

Cost, \$65 million in 2000 dollars on California Highway 1. Litigation at that time involved approximately \$43.7 million (2000 dollars).

1994 Northridge, California earthquake landslides

As a result of the magnitude 6.7 Northridge, California, earthquake, more than 11,000 landslides occurred over an area nearly 4,000 square miles. Most were in the Santa Susana Mountains and in mountains north of the Santa Clara River Valley. They destroyed dozens of homes, blocked roads, and damaged oilfield infrastructure. It also caused deaths from Coccidioidomycosis (Valley Fever) the spore of which was released from the soil and blown

toward the coastal populated areas. It is postulated the spore was released from the soil by the landslide activity.

March 1995 Los Angeles and Ventura Counties, Southern California

Above normal rainfall triggered damaging debris flows, deep-seated landslides, and flooding. Several deep-seated landslides were triggered by the storms, the most notable was the La Conchita landslide, which in combination with a local debris flow, destroyed or badly damaged 11 to 12 homes in the small town of La Conchita, about 12 miles west of Ventura. There also was widespread debris-flow and flood damage to homes, commercial buildings, and roads and highways in areas along the Malibu coast that had been devastated by wildfire 2 years before.

On December 23, 1997

Movement of an active landslide in the Anaheim Hills accelerated. This "Vista Summit Way" landslide damaged two to three houses and affected three city blocks.

1998 Laguna Niguel, Orange County

During the 1997/1998 El Nino Season heavy rainfall increased movement on the site of an ancient landslide in Laguna Niguel. The storms in December 1997 had accelerated its movement and in early 1998, a crumbling hillside forced the evacuation of 10 hilltop homes and more than 10 condominium units resting below. Ultimately four of the hilltop homes collapsed, falling down hillside into the void created by the slide area. The condominium complex has since been demolished and the site sits as open space as shown below.

Other 1997-1998 Landslides

On December 6, 1997, four homes were condemned and evacuated due to a mudslide and rock fall in Silverado Canyon. Floods and mudslides were reported in Costa Mesa, Irvine, Lake Forest, San Juan Capistrano, and Laguna Beach. Mudslides occurred in Black Star, Baker, and Santiago Canyons. Many road closures were reported along the Santa Ana Freeway at Laguna Freeway, Laguna Canyon Road, and Pacific Coast Highway in Newport Beach and in Huntington Beach.

On February 6, 1998

A mudslide crushed two cars in Newport Beach. On February 8, high tide and rain caused damage to shoreline properties; nine homes at a mobile home park were damaged in San Clemente. One of these houses was condemned. In Dana Point, the Holiday Inn Express was evacuated when a mudslide flowed into the underground parking structure. Cars flowed out of the building into the street with the mud. In Brea a rock and mudslide closed the Carbon Canyon Road. Other road closures occurred at Pacific Coast Highway, Laguna Canyon Road, and El Toro Road.

On February 23, 1998

The storm forced the evacuation of eight to ten residents in Holy Jim Canyon near the Orange - Riverside County line; a half-dozen other residents declined to move despite the growing slide threat. One home was endangered in Silverado Canyon. On February 24, Carbon Canyon Road was closed in Brea, after a hillside slid across half of the road at the La Vida Hot Springs Resort.

On March 3, 1998

A landslide forced the evacuation of four homes in the 300 block of Paseo de Cristobal in San Clemente, piled dirt and large boulders onto the railroad tracks and cut off rail service.

2004-2005 Anaheim Hills

Three new multi-million dollar homes along Ramsgate Drive were destroyed by this slow-moving landslide in 2004-05.

On February 15, 2005

USGS issued an advisory that landslides could continue to occur long after the winter rainfall ended: "An additional consequence of the above-normal rainfall in January in southern California is the potential for activation of deep-seated, slow-moving landslides. Rainfall is moving slowly through soil and bedrock, and over time (days to months), may result in destabilization of some hill slopes."

2005 Bluebird Canyon Landslide

In the early morning of June 1, 2005, a landslide began moving in the Bluebird Canyon area of Laguna Beach, California. No rainfall or earthquake activity occurred during or immediately before the landslide movement. This movement was almost certainly related to the extremely heavy winter rains that occurred from December through February.

2007-2008 Post-Santiago Fire and 2014-2015 Post-Silverado Fire Mudslides

After the Santiago Fire stripped the vegetation bare in the canyon communities of Orange County, a debris flow task force was convened to address the potential impact that post-fire winter storms could have on the slopes in the burn areas. There were several cases of mudslides that damaged homes in the Modjeska Canyon area.

2010 Winter Storm Mudslides:

In December 2010, a series of storms passed over Orange County in late December 2010, dropping several inches of rain and triggering a series of mudslides and debris flows in Orange County canyon and coastal areas. While not specifically associated with a fire or other event, these slides tended to occur in areas already identified as being prone to such activity.

Post Silverado Fire in 2014

Similar conditions were generated in the Silverado Canyon area of Orange County. While no major debris flows were recorded in the year following the event, the threat will remain for several more years.

2.2.11 Nuclear and Radiological

The increasing volume and variety of radioactive materials that are generated, stored, or transported in Orange County has created potential nuclear incident threats. Radioactive material is any material that emits radiation spontaneously. It may significantly contribute to or cause an increase in mortality and an increase in serious illness.

The circumstances and geographic features in the vicinity of potential incidents vary greatly. Incidents may occur at fixed facilities where there are opportunities for development of site-specific contingency plans. They may also occur at any place along a land, water, or air transportation route, and may occur in unpredictable locations which may be relatively inaccessible by ground transportation.

Among the possible causes of a nuclear incident are earthquakes, dam failures, transportation accidents, civil disturbances including terrorism, and problems within a nuclear facility. A nuclear incident may trigger one or more secondary events, including blasts, explosions, radioactive fallout, fires, power failures, dam failures, flash floods, transportation disruptions, accidents, overpass failures, building collapse, fuel shortages, food and water supply contamination, or disruption of distribution systems.

Nuclear Facility

There are two nuclear facilities in Orange County: San Onofre Nuclear Generating Station (SONGS) and the University of California Irvine. San Onofre Nuclear Generating Station is currently in decommissioning status. Both SONGS units have been permanently shut down since January 2012. Radioactive fuel has been removed from both reactors and is currently being stored on-site in spent fuel pools or dry cask storage. The UCI reactor is used for research purposes.

The County of Orange Nuclear Power Plant Emergency Plan for SONGS and its associated procedures will be developed to reflect the policies and concepts under which the County of Orange will operate during an emergency involving the spent nuclear fuel. There will be two emergency classification levels.

Unusual Event

A minor occurrence takes place which does not affect offsite jurisdictions but might have the potential to increase in intensity. These range from small fires to major non-nuclear events.

Alert

When the unusual event escalates beyond certain technical specifications, the Alert level is reached. There is still no major impact on offsite agencies, except that EOCs (including the County and OA EOC) are staffed and response personnel are put on standby.

Freeways

The major transportation routes in Orange County consist of the freeway systems. Over 250 miles of interstate highway and 719 miles of other major transportation routes run through Orange County. The California Highway Patrol has designated these highways as radioactive materials transportation corridors. The U.S. Department of Transportation has identified Interstate 5 as the third busiest highway transportation corridor in the country.

Railroads

Accidents along railroad corridors are a concern. Although small sources of radioactivity are not usually carried by train, large sources such as spent nuclear fuel are transported via railroads. Accidents involving train derailments and content exposure are rare in Orange County. A major impact would occur if a spent fuel cask were to rupture. An evacuation of up to three miles might be required, in addition to the expenditure of many thousands of dollars for clean-up.

Military Bases

The military bases in and surrounding Orange County (i.e., Seal Beach Naval Weapons Center, Los Alamitos Armed Forces Reserve Center, and Camp Pendleton) have the potential to store and transport radioactive material in the form of nuclear warheads for bombs and missiles. Although a nuclear explosion is unlikely, the potential for the spread of radioactive material from the high explosive detonator may cause contamination over a two-mile area.

Large Gamma Ray Sterilization Facilities

The County has two large gamma ray sterilization facilities. Almost six million curies of radioactive cobalt 60 are stored in pools of water behind eight-foot thick concrete walls. The general public and industrial operations would be threatened if the concrete containment cracked and the pools lost their water supply. There could be up to a six-mile evacuation as a result of the opening of the containment. No contamination from the water would result.

Industrial Users

Orange County has over 200 specific licensees who use sealed and unsealed sources of radiation. The hazards range from a small spill inside a facility to a radioactive plume of smoke from a major fire. Exposure to the smoke would cause both internal and external exposure hazards.

2.2.12 Oil Spill

In September 1987, the Pac Baroness collided with the Atlantic Wing, a Panamanian freighter approximately 14 miles west of Point Conception and released 4,000 gallons to 40,000 gallons of oil with the resulting slick covering an area 10 miles by 3 to 4 miles within 24 hours. In March 1989, the freighter Exxon Valdez spilled 26,000 barrels of oil in Prince William Sound in Alaska. In February 1990, the freighter American Trader spilled approximately 9,500 barrels of oil off Huntington Beach in Southern California. In April 2010, the Deepwater Horizon oil rig exploded in the Gulf of Mexico killing 11 people and leading to 4.9 million barrels of spilled oil. It took over three months for the wellhead to be capped and was the largest accidental marine oil spill in the history of the petroleum industry.

The potential exists for offshore oil accidents and spills to occur in Orange County due to oil and gas production, transportation of liquid bulk products by tanker, and other vessel traffic carrying petroleum products. An offshore spill can result in oil-contaminated beaches. The major potential sources of offshore spills are separated into the following categories: oil production platforms, vessel traffic along the coast, and subsea pipelines.

Multiple agencies are involved in responding to and cleaning up oil spills. These include the Coast Guard, California Department of Fish and Game, and other state and federal agencies.

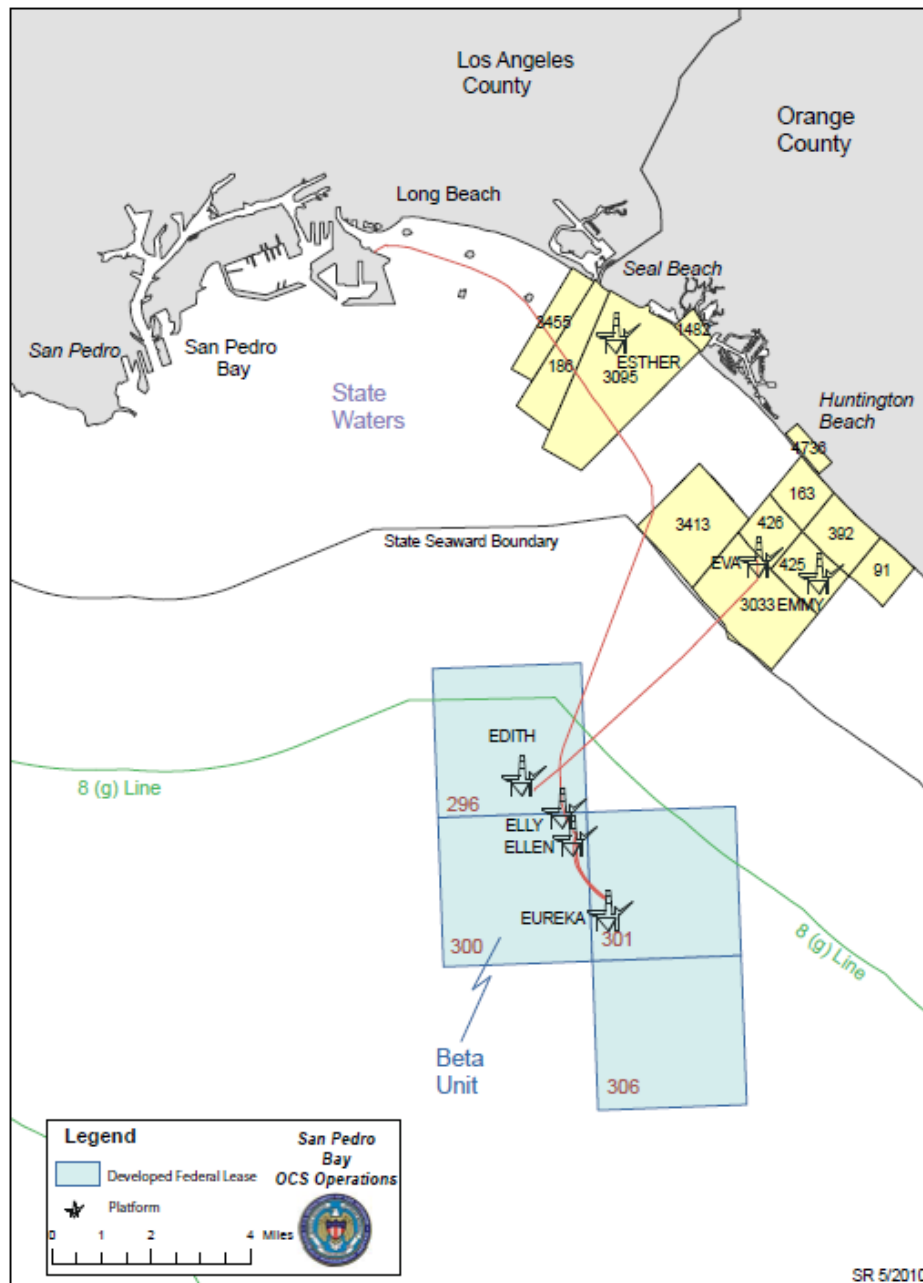
Offshore Oil Platforms

The probability of an oil spill from a platform was thought to be small, but is a very possible scenario as the Deepwater Horizon incident shows. Offshore oil spill prevention contingency plans are federally mandated requirements for all offshore oil facilities in U.S. Federal waters and administered by the Department of Interior's Bureau of Safety and Environmental Enforcement. The Outer Continental Shelf Lands Act amendments of 1978 stipulated that offshore drilling and oil spill response practices incorporate the use of Best Available and Safest Technologies (BAST).

All offshore wells are equipped with a blowout preventer that can be closed hydraulically from a remote control station in the event of a blowout. The failure of a blowout preventer is what led to the Deepwater Horizon spill. Platforms have relatively small amounts of oil (a few thousand barrels) stored on them. Historically, spills from platforms themselves only involve a few barrels. The platforms are equipped with spill response equipment to contain and cleanup any small spills. The worst case scenario is that a platform is completely destroyed (e.g., explosion, rammed by a vessel or from a significant seismic event). Blowout preventers are designed to limit the spill to oil on the platform and in the risers running from the sea floor to the platform. A failure of the blowout preventer would result in a free-flowing well with the potential for millions of barrels of oil to be released.

There are several offshore oil drilling platforms off the Orange County coast. See Figure 14 for a map of federally leased platforms from the Bureau of Ocean Energy Management, Regulation and Enforcement, <http://www.boemre.gov/omm/pacific/lease/lease.htm>.

Figure 16 - BOEM



Vessel Traffic

Alaskan tankers may each carry as much as 1.5 million barrels of oil although the average is about 675,000 barrels. Other tankers are much smaller, carrying 100,000 to 300,000 barrels. Although the probability of a tanker spill is low, it is possible. Potential causes of spills include collision, ramming, grounding, and structural failures. Other types of commercial vessels carry fuel (bunkers), which can be released in the event of an accident.

Subsea Pipelines

All of the platforms ship their oil to shore via subsea pipelines. Potential causes of pipeline spills include corrosion, mechanical defects, and ruptures caused by events such as anchor dragging or earthquakes. Additionally, subsea pipelines are potential targets for a terrorist. These pipelines are vulnerable to explosive devices which could result in fire and damage to the environment. Oil pipelines are normally equipped with various sensors and/or valves that will allow the pipeline to be shut down rapidly and automatically in the event of a rupture.

2.2.13 Power Outage and Stage III Energy Outage

Additional information can be found in the County and OA Power Outage Annex.

Since each power outage or energy shortage is unique, it is impossible to envision every event or situation which might qualify as, or lead to, an energy emergency, and thus develop detailed specific response plans for every case. Instead, this plan recognizes that an emergency response is based on successful working relationships among people. Further, this plan provides a management structure, which identifies those relationships and provides a process to leverage those relationships during a power outage event.

The Northeast blackout of 2003 was a widespread power outage that occurred throughout parts of the Northeastern and Midwestern United States and Ontario, Canada on Thursday, August 14, 2003, just before 4:10 p.m. While some power was restored by 11 p.m., many did not get power back until 8 a.m. the next day. At the time, it was the second most widespread blackout in history, after the 1999 Southern Brazil blackout. The blackout affected an estimated 10 million people in Ontario, Canada and 45 million people in eight U.S. states.

Historical Orange County Power Outages

The 2011 Southwest blackout, sometimes referred to as the Great Blackout of 2011, was a widespread power outage affecting large areas of Southern California as well as western Arizona and northern Baja California leaving nearly seven million people without power. The event occurred on Thursday, September 8, 2011, beginning at about 3:38 pm PDT as the result of 23 distinct events occurring on five separate power grids in a span of 11 minutes. Eleven hours after the outage began, power was restored to 694,000 of the affected customers, and by 4:30 am on September 9th, power was restored to all customers, although the system was described as "still fragile." All public schools in San Diego County and some in Orange County were closed on September 9th, as well as some major universities, community colleges, and the Federal court system.

The outage caused significant losses to restaurants and grocery stores, which were forced to discard quantities of spoiled food; perishable food losses at grocery stores, eating establishments and households were estimated at \$12 million to \$18 million. The outage also caused some sewage pumping stations to fail, resulting in contaminated beaches and potentially unsafe water supplies in several areas. As a precaution, in some neighborhoods, residents were told to boil their water or use bottled water for several days after the outage. It was the largest power failure in California history.

Rotating outages, also referred to as load shedding, is an intentionally-engineered electrical power outage where electricity delivery is stopped for non-overlapping periods of time over

geographical regions resulting from either insufficient generation capacity or inadequate transmission infrastructure to deliver sufficient power to the area where it is needed.

Rotating outages are a last-resort measure used by an electric company to avoid a total blackout of the power system. Rotating outages are usually in response to a situation where the demand for electricity exceeds the power supply capability of the network.

There are three stages leading to a rotating outage. In a Stage 1 emergency, only a general call for voluntary conservation is issued, while a Stage 2 emergency, results in power being temporarily cut off to certain large users, primarily industrial concerns, who have agreed to this arrangement in exchange for lower rates. When a Stage 3 power emergency is declared, electricity to one of the grids is shut off for a fixed period of time, which can range from 60 minutes to 2½ hours. If after this period of time the Stage 3 emergency still exists, power is restored to this grid but then the next grid in the sequence is shut off, and so on, until the situation is stabilized — the blackout thus "rotates" from one grid to the next.

In California, each customer's electric bill includes the number of the power grid (from 1 to 14) giving customers at least some advance notice of when their electricity might be turned off in the event of a Stage 3 emergency. The grids are set up in such a manner as to ensure that a large percentage of customers in the same neighborhood would not be blacked out concurrently, which could invite looting and other related problems. Normal electricity customers can fall within the areas reserved for emergency use (if they are near a hospital or other critical infrastructure), in which case their electric bill will indicate a power grid of 99 and they will not be affected by rotating outages.

An energy emergency could be caused by a terrorist event which disrupts multiple power generating stations at a time when other stations around the State are off line for maintenance and repair. Such an incident could include the bombing of one or more local generation stations along with the destruction of trunk lines coming into the area. The likelihood of such an occurrence is low, but not impossible. In such a scenario, the local area would be unable to generate enough electricity and the ability to bring power in from outside the area would be reduced due to the damage to trunk lines.

Extended power outages can have a disproportionate impact on people who rely on electricity to power or charge home medical and mobility equipment. Loss of power can also impact people who require refrigeration for medication or other medical supplies.

2.2.14 Terrorism

Additional information can be found in the County and OA Weapons of Mass Destruction Annex.

In the wake of the 1993 World Trade Center bombing in New York and the Oklahoma City bombing in 1995, terrorism has become a serious concern for emergency management, emergency responders, and the public at large. The September 11, 2001 attacks on the New York City's World Trade Center and the Pentagon confirmed national concerns about terrorism to a level never imagined, and requires preparation to respond to situations that go beyond the terrorist incident scenarios that are familiar. In particular, terrorism may involve Chemical, Biological, Radiological, Nuclear, or Explosive (CBRNE) weapons. Cybersecurity is an emerging area of concern in the area of terrorism.

Terrorism includes the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives. Terrorism affects us through fear, physical injuries, economic losses, psychological trauma, and erosion of faith in government. Terrorism is not an ideology; it is a strategy used by individuals or groups to achieve their political goals.

Terrorists espouse a wide range of causes. They can be for or against almost any issue, religious belief, political position, or group of people of one national origin or another. Due to the tremendous variety of causes supported by terrorists and the wide variety of potential targets, there is no place that is truly safe from terrorism. Throughout California there are nearly a limitless number of potential targets, depending on the perspective of the terrorist. Some of these targets include: abortion clinics, religious facilities, government offices, public places (such as shopping centers and entertainment venues), schools, power plants, refineries, utility infrastructures, water storage facilities, dams, private homes, prominent individuals, financial institutions, and other businesses.

Weapons of Mass Destruction (WMD) are: any destructive device as defined in section 921 of Title 18 U.S.C., an explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge of more than four ounces, missile having an explosive or incendiary charge of more than one quarter ounce, mine or device similar to the above; poison gas; any weapon involving a disaster organism; or any weapon that is designed to release radiation or radioactivity at a level dangerous to human life. WMDs are generally categorized as: Chemical, Biological, Radiological, Nuclear, or Explosive (CBRNE).

- There are a multitude of chemicals that terrorists can obtain that would incapacitate and/or kill segments of the population. Chlorine gas or ammonia could cause respiratory

difficulties and possible death; nerve agents such as Sarin will cause large number of casualties and death over a small area.

- Most any infectious biological agent has the potential for being used as a terrorist weapon. Smallpox and anthrax are examples of biological agents that could cause significant health and clean up problems. Anthrax was released in the mail in Florida and Washington, D.C. in 2001.
- Radiological events are those in which radiation is spread contaminating a fixed area, for example, a “dirty bomb.” Dirty bombs are explosive devices (non-nuclear) that spread radioactive materials as a result of the explosion of conventional explosives such as dynamite, nitro glycerin, or plastic explosives. The type of radiation released from such a device would depend on the radioactive materials used. The results of such an event would be a large number of casualties within a specific area with significant costs for cleanup.
- The nuclear in CBNRE refers to actual nuclear explosions resulting from a nuclear reaction. An example of such an event would be the detonation of a nuclear device that terrorists had obtained or developed. The results would be widespread casualties (depending on the explosive size of the device) with considerable radioactive contamination for an extended period of time.
- Other weapons to be considered are small firearms, (handguns and rifles,) and conventional or improvised explosives. These two categories of weapons are the most frequently used weapons by terrorists because of their low cost and availability. Firearms, both automatic and semi-automatic and the ammunition they utilize, are readily available to a terrorist acting alone or with others. Acquiring them through legal or illegal means is relatively quick and simple. Explosives used may be of a commercial or military grade such as dynamite or plastic explosives, or they can be a self-constructed explosive (e.g., fertilizer and fuel oil,) or chemical reaction type (e.g., dry ice and soda water.) The explosives can be delivered or put in place in a wide variety of methods. “Suicide” bombs can be carried by the terrorist person themselves or in a vehicle. There are also numerous examples of backpacks or packages filled with explosives and left in a particular location for a timed or remote demolition.
- California’s population, industrial infrastructure, economic importance, international reputation and numerous iconic features combine to make the state a potential target for both domestic and international terrorist attacks. Additionally, there are new terrorist tactics emerging within the United States of individuals who are unaffiliated with a terrorist organization but who act alone or in small groups, i.e. the San Bernardino terror attack on December 2, 2015.
- Cyber-attacks and intrusions can be used by criminals, terrorists, insiders, and hostile foreign nations to mask other attacks, shake citizens’ confidence in the government, or

disrupt delivery of essential services. As this threat continues to grow and evolve, concerns about the potentially severe consequence of an effective cyber-attack against critical infrastructure facilities and systems. Cyber threats result in the denial or disruption of essential services, including utilities, public health, finance, or law enforcement networks.

2.2.15 Tornadoes

Tornadoes are one of nature's most violent storms. In an average year, 800 tornadoes are reported across the United States, resulting in 80 deaths and over 1,500 injuries. A tornado is a violently rotating column of air extending from a thunderstorm to the ground. The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of one mile wide and 50 miles long.

Tornadoes can occur anywhere in the U.S. at any time of the year. In the southern states, peak tornado season is March through May, while peak months in the northern states are during the summer.

Historically, two tornados have hit Huntington Beach in 1978 and 1991. In 1978, a waterspout came in off the ocean and hit the Huntington-by-the-Sea Mobile Home Park located on Newland Street just off Pacific Coast Highway. Approximately 35-40 mobile coaches were severely damaged.

Historical Orange County Tornadoes

In 1991, a waterspout came in off the ocean and hit a mobile home park. The Driftwood Mobile Home Park had about 40-45 severely damaged coaches. The tornado continued into the housing tract off of Atlanta between Magnolia and Newland blowing several roofs off and causing damage to fences and home exteriors. No one was hurt as the result of the tornado.

Although large tornadoes are not common, Orange County has the highest occurrence of small to medium tornadoes per square mile in the United States according to FEMA. Between 1958 and 2011 Orange County was hit by 31 tornadoes. The vast majority of those events had Fujita Scale readings of F0, however two events reached F2 and one reached F3. No deaths and only a small number of injuries have been attributed to these events. The following figure provides information on some these events.

Figure 17 - Historic Tornado Events in Orange County (1950-2016)

Date	Deaths	Injuries	Property Damage	Fujita Scale
DEC 07, 1992	0	0	\$250,000	F1
DEC 07, 1992	0	0	\$2,500	F1
DEC 29, 1992	0	0	\$2,500	F0
JAN 17, 1993	0	1	\$5,000,000	F0
JAN 18, 1993	0	0	\$50,000	F0
FEB 08, 1993	0	0	\$50,000	F0
NOV 11, 1993	0	2	\$1,000	F0

FEB 07, 1994	0	0	\$500,000	F0
NOV 11, 1997	0	0	N/A	F1
DEC 21, 1997	0	0	\$15,000	F1
FEB 24, 1998	0	0	\$20,000	F0
FEB 24, 2001	0	0	\$50,000	F0
FEB 19, 2005	0	0	\$15,000	F0
SEPT 22, 2007	0	0	N/A	F0
JAN 19, 2010	0	0	\$500,000	F1

Reference:

<http://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=6%2CCALIFORNIA>

2.2.16 High Winds

Santa Ana winds are generally defined as warm, dry winds that blow from the east or northeast (offshore). These winds occur below the passes and canyons of the coastal ranges of Southern California and in the Los Angeles basin.

Santa Ana winds often blow with exceptional speed in the Santa Ana Canyon. Forecasters at the National Weather Service (NWS) in Oxnard and San Diego use the term "Santa Ana Winds" for winds greater than 25 knots.

The complex topography of Southern California combined with various atmospheric conditions creates numerous scenarios that may cause widespread or isolated Santa Ana events. Commonly, Santa Ana winds develop when a region of high pressure builds over the Great Basin (the high plateau east of the Sierra Mountains and west of the Rocky Mountains including most of Nevada and Utah). Clockwise circulation around the center of this high pressure area forces air downslope from the high plateau. The air warms as it descends toward the California coast at the rate of 5 degrees Fahrenheit per 1000 feet due to compressional heating. Thus, compressional heating provides the primary source of warming. The air is dry since it originated in the desert, and it dries out even more as it is heated.

Santa Ana wind conditions can result in two general disaster conditions. The most common is fire fanned by the high winds. This was the situation with The Santiago Fire, which began on Sunday, October 21, 2007. On this date, Southern California was in the midst of a "Fire Weather Watch" with strong Santa Ana winds and low relative humidity for the entire area. Critical fire weather conditions were in existence. Santa Ana winds were a major contributing factor to the fire's unpredictable behavior and rapid progression. Hot dry winds continued to fan the fire throughout the week of October 21-28. Flame heights were reported as high as 100 feet. The Santiago Fire burned 28,400 acres and caused 16 minor injuries to fire personnel.

The second form of disaster would be direct building damage as a result of the high winds. This has occurred in the past few years in many southland communities including Orange County.

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Wind speeds are typically north to east at 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana winds can have gusts greater than 60 knots over widespread areas and gusts greater than 100 knots in favored areas. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of a sea breeze. The sea breeze, which typically blows onshore daily, can moderate the Santa Ana winds during the late morning and afternoon hours. Santa Ana winds are an important forecast challenge because of the high risk of fire associated with them. Also, unusually high surf conditions on the northeast side of the Channel Islands

normally accompany a Santa Ana event. Other hazards include: wind damage to property, turbulence and low-level wind shear for aircraft, and high wind dangers for boaters.

2.2.16 Train Derailment

Additional information can be found in the County and OA Rail Emergency Response Annex.

A major train derailment occurring in a heavily populated area can result in considerable loss of life and property. As a train leaves its track, there is no longer any control as to the direction it will travel. Potential hazards could be overturned rail cars, direct impact into a building, or entering into normal street traffic.

Each of these hazards encompasses many threats, such as a hazardous materials incident, fire, severe damage to either adjacent buildings or vehicles, and loss of life of those on the train or in either adjacent buildings or vehicles and pedestrians.

Bakken oil, a lighter type of crude oil, similar to gasoline, contains higher levels of combustible gases, making it potentially more flammable than other kinds of crude oil. Bakken crude has national attention since an increase Bakken train explosions around the country prompted the federal government to write stronger regulations on rail transport, including a proposal to require sturdier tank cars for oil. The railroad companies, which fall under federal regulations, do not provide that kind of information to state and local officials about shipments of other toxic, volatile and explosive materials as it travels into Orange County.

In 2014, California received 1.2 million barrels of crude from North Dakota by rail, according to the California Energy Commission.

Currently, the Burlington Northern Santa Fe Railway mainline between Los Angeles and San Bernardino counties carries an estimated 75 daily freight trains through parts of northern Orange County, in the cities of Yorba Linda, Anaheim, Buena Park, Fullerton and Placentia, yet it is unknown to local officials regarding the contents of their trains. By 2025, this line will carry an estimated 125 daily freight trains according to the Orange County Transportation Authority.

Along the Los Angeles/San Diego Rail Corridor, which runs north and south through the county, daily freight train traffic is expected to increase to 12 trains by 2025 from six.

Bakken crude provide a challenge to first responders due to it heat, intensity and combustible rate. Statewide, more protocols are being developed on the appropriate ways to fight this new train accident hazard.

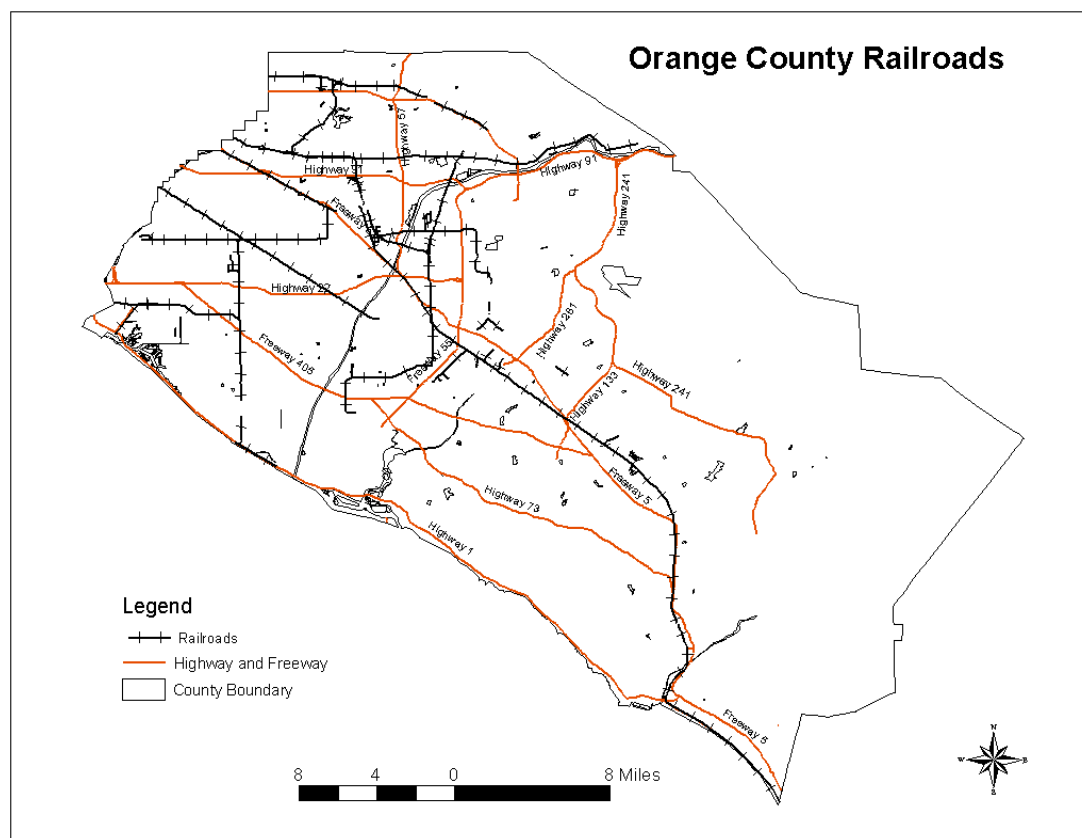
Historical Orange County Train Accidents

As commuter rail traffic increases throughout Southern California, the potential for serious train accidents increases. On Tuesday, April 23, 2002, about 8:10 a.m. Pacific daylight time, an eastbound Burlington Northern/Santa Fe Railway freight train collided head on with a standing westbound Southern California Regional Rail Authority passenger train at Control Point Atwood in Placentia, California. Emergency response agencies reported that 162 persons were

transported to local hospitals. There were two fatalities. Damage was estimated at \$4.6 million.

There are a number of ways in which trains can be derailed by terrorists to cause a significant hazardous materials spill, a significant explosion (especially if the train is carrying military ordnance), or simply disrupting normal train schedules. Though not a derailment specifically, the potential exists for terrorists to hi-jack a train (either passenger or freight) and by disregarding traffic signals on the lines, ram the hi-jacked train into a standing passenger train at a station. Such an incident would significantly disrupt daily life as described above with the incident in Placentia. Though this incident was an accident, it is an indication of the impacts that could be expected from a deliberate act of terrorism.

Figure 18 - Map of Rail Lines in Orange County



2.2.17 Tsunami

Additional information can be found in the County and OA Tsunami Annex.

A tsunami is a traveling ocean wave with an extremely long length and period generated by disturbances associated with earthquakes, volcanoes, or major sub-marine landslides. Tsunamis are a threat, not because they frequent, but because the destruction they cause can be devastating. The danger is compounded by the fact that the intensity of the wave is unpredictable and the threat is intermittent over many hours.

Warnings of impending tsunamis are generated by the USCGS (US Coast and Geodetic Survey) Seismic Sea Wave Warning System (SSWS) and the National Tsunami Warning Center. They issue seismic sea wave advisories when an earthquake of significant magnitude has occurred in an area susceptible to tsunami generation. They also issue seismic sea wave warnings when tide stations confirm the generation of a tsunami. These advisories are transmitted by NOAA Satellite to the California Office of Emergency Services Warning Point. The warnings are evaluated by the Warning Center Officer and Director of the Cal OES and, if necessary, a statewide warning is issued to the Orange County Sheriff Department along with the estimated time of arrival of the wave. The local warning point for the County of Orange is the Orange County Sheriff's Department Control One. The 24 hour personnel are responsible for notifying appropriate County departments/agencies, city warning points and the OCSD Emergency Management Division.

All of the coastal areas in Orange County are susceptible to tsunamis. A tsunami from the South Pacific or from South America could strike the County coastal areas from the south to southwest. The Channel Islands do not provide adequate protection.

Historical Orange County Tsunamis

The worst recorded tsunami to hit California was in 1812. A landslide occurred in the Santa Barbara Channel, and the resulting waves are reported to have been up to 15 feet above sea level in Ventura. Widespread damage and loss of life occurred in 1964 following the Alaskan 9.2 magnitude earthquake, which created a tsunami that affected the central coast of California and damaged the Los Angeles-Long Beach and Ventura County harbors. Tidal surges of approximately 4 feet to 5 feet hit the Huntington Beach area causing moderate damage to boats docked in the Harbor. The February 27, 2010 Chile 8.8 magnitude earthquake caused 2 foot run up in Huntington Beach, Newport Beach and Dana Point, causing minor damage to a bait barge that was severed from its moorings. The Japan 9.0 magnitude earthquake on March 11, 2011 caused a 2 foot run up in Huntington Beach and Dana Point and a 1 foot run up in Newport Beach again damages were minor with a boat pulled off its mooring and a pylon was damaged when hit by a boat. Both the Chile and Japan events occurred during low tides.

The immediate or primary effects of a tsunami are easily visualized, but the secondary effects can be unanticipated. Water systems can be contaminated, power disrupted, and transportation systems blocked or dislocated. There may be an increased occurrence of fires from broken oil and gas tanks or lines, flooding from blocked rivers, and possible damage to personal property along coastal areas. Coastal areas may be inundated, creating increased traffic from evacuating populations which may require emergency sheltering and care.

2.2.19 Urban and Wildland Fires

A variety of fire protection challenges exist within Orange County, including urban fires, wildland fires, and fires at the urban/wildland interface. This hazard analysis addresses both urban and wildland fires in Orange County.

Urban Fires

A variety of fire protection challenges exist within Orange County. Among these are high-density residential areas, large industrial complexes, high rise buildings, a horse race track, a nuclear reactor at a local university, and the sixth busiest airport in the United States. Additionally, there are numerous urbanized sections located within and directly adjacent to high hazard wildland areas.

The provision of adequate fire protection is directly affected by residential, commercial and industrial growth, all of which are proceeding rapidly in Orange County. Since 1950, manufacturing has replaced agriculture to become the County's primary industry. Industrial development has brought a corresponding increase in the home building industry. The County's rapid growth rate is expected to continue, bringing an estimated 34,000 new residents each year.

Arson can be a viable terrorist weapon used to attack a specific target or groups of targets within a specific area. A significant high rise fire could impact available fire resources throughout the County while disrupting business and thousands of lives. However, the more prevalent terrorist arson fire would be used to make a political statement like the fire at the Sport Utility Vehicle (SUV) sales lot in West Covina in 2003. This fire was set by environmentalists in protest to the sales of SUVs. The fire itself did not have a large impact on the public in the form of disrupting a way of life, but it did have a political message. Though the incident did not occur in Orange County, it is an indication that such a domestic terrorist incident can occur anywhere at any time.

Some of the most difficult fire protection problems in the urban area are:

- Multiple story, wood frame, high-density apartment developments
- Large contiguous built up areas with combustible roof covering materials
- Transportation of hazardous materials by air, rail, road, water, and pipeline
- Storage, handling and use of hazardous materials on site
- Natural disasters

The combination of building materials, population density, and natural conditions can lead to disastrous results. In April 1982, 1,500 people were left homeless when a fire associated with wooden shake rooftops and Santa Ana winds of 50 mph destroyed 525 Anaheim apartments,

three houses, and two commercial buildings. The \$50 million in property damage made this one of the most costly fires in Orange County history.

Other principal factors contributing to major fire losses are:

- Delayed detection of emergencies
- Delayed notification of the fire agency
- Response time of emergency equipment
- Street structure - private, curvilinear and dead-end
- Inadequate and unreliable water supply with poor hydrant distribution
- Inadequate code enforcement and code revisions, which lag behind fire prevention knowledge

The character of the existing built-up area and future land use determines the location of fire stations, number of companies, staffing of such companies, and future fire protection facility needs. Structural conditions also influence the quantity of water needed for fire protection (fire flow) and hydrant distribution.

Features of structural conditions that affect fire control are:

- Type of construction and use of buildings
- Area of building (ground floor area)
- Number of stories
- Type of roof covering material
- Exposures to the building

Fire prevention is the major fire department activity in urban areas; the objective is to prevent fires from starting. Once a fire starts, the objective is to minimize the damage to life and property. Urban fire prevention programs that are designed to achieve this fire prevention objective are:

- Adoption and aggressive enforcement of the most recent Uniform Fire Code
- Development of a comprehensive master plan to ensure that staffing and facilities keep pace with growth
- Plan check of new construction to ensure that all construction features meet code requirements
- Enforcement of the Hazardous Materials Disclosure Ordinance
- Active participation in Subdivision Committee and other planning activities

Wildland Fires

The most common causes of wildland fires are arson and weather related incidents. However, a potential terrorist incident involving wildfire should be considered. Terrorist incidents would fall into two general categories: diversionary (intended to cover other activity and divert

resources) and primary (the intended event to reduce availability of critical resources and disrupt normal routines).

California experiences large, destructive wildland fires almost every year, and Orange County is no exception. Wildland fires have occurred within the County, particularly in the fall, ranging from small, localized fires to disastrous fires covering thousands of acres. The most severe fire protection problem in the unincorporated areas is wildland fire during Santa Ana wind conditions. Figure 19 shows fire hazard severity zones for the County.

Reasons for control difficulty associated with wildland fires are:

- Adverse weather conditions
- Large quantities of combustible fuel
- Inaccessible terrain
- Nonexistent or very limited water supply
- Large fire frontage requiring dispersal of fire forces

For these reasons, it is usually necessary for the fire force to meet the advancing fire front in an accessible area containing a minimum amount of vegetation for fuel, and preferably located close to a water source.

The major objective of wildland fire defense planning is to prevent wildland fires from starting and, if unsuccessful, to minimize the damage to natural resources and structures. Some of the more successful programs currently in effect which contribute to the success of wildland fire prevention activities are:

- Closure of public access to land in hazardous fire areas
- Uniform Building Code prohibition of combustible roof covering materials
- Construction and maintenance of community and private fuel modification zones
- Vegetation Management Program (controlled burning)
- Weed Abatement Program
- Fire Prevention Education Programs

There are a number of natural conditions which might increase the possibility of wildland fires. Examples of such conditions are weather elements, the topography of the area, and the type and condition of wildland vegetation.

ORANGE COUNTY

VERY HIGH FIRE HAZARD SEVERITY ZONES IN LRA

As Recommended By CAL FIRE

Fire Hazard Severity Zones

- Local Jurisdiction Area
- State or Federal Jurisdiction Area
- VHFHSZ
- Non-VHFHSZ
- Incorporated Cities
- County Boundary

Government Code § 27170.06 directs the California Department of Forestry and Fire Protection (CAL FIRE) to identify areas within the State of California that are at high risk of wildfire. CAL FIRE has identified areas within Orange County that are at high risk of wildfire. These areas are designated as Very High Fire Hazard Severity Zones (VHFHSZ). The areas designated as VHFHSZ are shown in red on this map. The areas designated as Non-VHFHSZ are shown in pink on this map. The areas designated as Incorporated Cities are shown in grey on this map. The areas designated as County Boundary are shown in black on this map.

Map ID: 0303a00
 DATA SOURCES: CAL FIRE Fire Hazard Severity Zones (FHSZ) 06_1
 CAL FIRE Very High Fire Hazard Severity Zones in LRA - Orange (c30haz06_0)

August 2016

Weather

Weather conditions have many complex and important effects on fire intensity and behavior. Wind is of prime importance; as wind speed increases, the rate of fire spread also increases. Relative humidity (i.e., relative dryness of the air) also has a direct effect; the drier the air, the drier the vegetation and the more likely the vegetation will ignite and burn. Precipitation (annual total, seasonal distribution, and storm intensity) further affects the moisture content of dead and living vegetation, which influences fire ignition and behavior.

Many wildland fires have been associated with adverse weather conditions. In the 1982 Gypsum Canyon Fire, 17 homes were lost and 18,000 acres burned, leaving an estimated \$16 million in damage. The fire was difficult to contain because the Santa Ana winds were blowing at approximately 50-55 mph.

In 1993, aided by extreme fire weather conditions, devastating firestorms swept the County between October 24 and November 4. During this period, a total of 20 major fires in six Southern California counties burned out of control. Three fires burned in Orange County during this time: the Stagecoach, Laguna Beach, and Ortega fires. The Stagecoach fire burned 750 acres and destroyed 9 buildings. The Ortega fire burned 21,384 acres and destroyed 19 buildings. The Laguna Beach fire burned 14,337 acres, destroyed 441 homes and caused approximately \$528 million in damage.

In 1997, the Baker Canyon fire by Irvine Lake burned 6,317 acres of vegetation, followed by two additional fires in 1998: The Blackstar/Santiago Canyons fire destroyed 8,800 acres, and the Carbon Canyon fire burned 733 acres of brush.

In October 2007, The Santiago Fire began was a part of The California Fire Siege which included 22 fires and burned over 516,818 acres across California. Critical fire weather conditions were in existence. Santa Ana winds were a major contributing factor to the fire's unpredictable behavior and rapid progression. Hot, dry winds continued to fan the fire throughout the week of October 21-28. Flame heights were reported as high as 100 feet. The Santiago Fire burned 28,400 acres and caused 16 minor injuries to fire personnel. Individual claims for damage or destroyed property included 24 outbuildings, 23 residential structures (8 damaged/15 destroyed), and 12 vehicles estimated at \$7,358,810.

In addition to winds, structural development within or adjacent to wildland exposures represents an extreme fire protection problem due to flying embers and the predominance of combustible roof coverings.

Topography

Topography has considerable effect on wildland fire behavior and on the ability of firefighters to position and utilize their equipment to suppress wildland fires. Simply because of

topography, a fire starting in the bottom of a canyon may expand quickly to the ridge top before initial attack forces can arrive. Rough topography greatly limits road construction, road standards, and accessibility by ground equipment. Steep topography also channels airflow, creating extremely erratic winds on leeward side of the slopes and in canyons. Water supply for fire protection to structures at higher elevations is frequently dependent on pumping units. The source of power for such units is usually from overhead distribution lines, which are subject to destruction by wildland fires.

Vegetation

A key to effective fire control and the successful accommodation of fire in wildland management is the understanding of fire and its environment. Fire environment is the complex of fuel, topographic, and air mass factors that influence the inception, growth, and behavior of a fire. The topography and weather components are, for all practical purposes, beyond human control. Fuels, on the other hand, can be controlled before the outbreak of fires. In terms of future urban expansion, finding new ways to control and understand these fuels can lead to possible fire reduction.

A relatively large portion of the County is covered by natural (though modified) vegetation. Of these different vegetation types, coastal sage scrub, chaparral, and grasslands reach some degree of flammability during the dry summer months and, under certain conditions, during the winter months. For example, as chaparral gets older, twigs and branches within the plants die and are held in place. A stand of brush 10 to 20 years of age usually has enough dead material to produce rates of spread about the same as in grass fires when the fuels have dried out. In severe drought years, additional plant material may die and contribute to the fuel load. There will normally be enough dead fuel accumulated in 20 to 30 year old brush to give rates of spread about twice as fast as in a grass fire. Under moderate weather conditions that produce a spread rate of one-half foot per second in grass, a 20 to 30 year old stand of chaparral may have a rate of fire spread of about one foot per second. Fire spread in old brush (40 years or older) has been measured at eight times as faster than grass, about four feet per second. Under extreme weather conditions, the fastest fire spread in grass is 12 feet per second or about eight miles per hour.

Wildland and Urban Interface

In an effort to assist in alleviating fire dangers near urban development interface, the construction of a fuel modification zone (firebreak, fuel break or greenbelt) has been required. The continued application of this method does have drawbacks and, therefore, is not the only acceptable solution. There are the impacts on wildlife, on unique vegetation and, in some cases, to the watershed cover as deep-rooted chaparral species are replaced by shallow-rooted grasses. Fuel breaks are costly to install, require expensive maintenance to ensure their success

during a wildfire, and offer protection primarily to these structures with direct exposure to the wildland. This inequity in protection versus installation/maintenance costs represents a very important point with respect to the natural resource/urban development interface conflict. Fire prevention measures to reduce the level of risk to the structures with wildland exposure must be developed within the design of the residential development rather than in the natural resource.

Chapter Three: Concept of Operations

3.1 Phases of Emergency Management

The Unified County and OA EOP addresses the entire spectrum of contingencies, ranging from relatively minor incidents to large-scale disasters, such as an earthquake. Some emergencies will be preceded by a buildup or warning period, providing sufficient time to warn the public and implement preparedness measures designed to reduce loss of life, property damage, and effects on the environment. Other emergencies occur with little or no advanced warning, thus requiring immediate activation of the EOP and efficient and coordinated mobilization and deployment of resources. All departments of the County and OA jurisdictions must be prepared to promptly and effectively respond to any foreseeable emergency, taking all appropriate actions, including requesting and providing mutual aid.

- Prevention Phase
- Preparedness Phase
- Response Phase
- Recovery Phase
- Mitigation Phase

3.1.1 Prevention Phase

The prevention phase includes activities, tasks, programs, and systems intended to avoid or intervene in order to stop an incident from occurring. Prevention can apply both to human-caused incidents (such as terrorism, vandalism, sabotage, or human error) as well as to naturally occurring incidents.

3.1.2 Preparedness Phase

The preparedness phase involves activities that are undertaken in advance of an emergency or disaster. These activities develop County and OA capabilities for an effective response to disasters. Disaster plans are developed and revised to guide disaster response and increase available resources. Planning activities include developing hazard analyses, training and exercising response personnel, purchasing equipment and improving public information and communications systems.

3.1.3 Response Phase

The response phase includes any action taken, before, during or after an emergency situation to reduce casualties, save lives, minimize damage to property and enhance the effectiveness and speed of recovery.

3.1.4 Recovery Phase

Among jurisdictions, recovery activities will involve the restoration of services to the public and returning the affected area(s) to pre-emergency conditions. Recovery activities may be both short-term and long-term, ranging from restoration of essential utilities such as water and power, to mitigation measures designed to prevent future occurrences of a given threat.

3.1.5 Mitigation Phase

Mitigation efforts occur both before and after emergencies or disasters. Post-disaster mitigation is actually part of the recovery process. This includes eliminating or reducing the impact of hazards that exist within the jurisdiction. Pre-disaster mitigation is vital to improving community resiliency before a disaster causes loss of life, damage to property and adversely affects the environment.

3.2 Sequence of Events during Disasters and Emergencies

There are two sequences of events that typically associated with disasters and emergencies. The first involves the response sequence, and is generally described as the activities to save lives, protect property and preserve the environment. This sequence describes deployment of response teams, activation of emergency management organizations and coordination among the various levels of government. The second sequence involves emergency proclamations, this sequence outlines the steps to gain expanded emergency authorities needed to respond to the problem. It also provides the steps for requesting state and federal disaster assistance.

3.2.1 Before the Event

Routine monitoring for alerts, advisories, watches and warnings

Local emergency management and response officials monitor events and the environment to identify threats that may affect their jurisdiction and increase awareness level of the emergency organization and the community when a threat is approaching or imminent.

Increased readiness

Sufficient warning provides the opportunity for response organizations to increase readiness, which are actions designed to increase a jurisdictions or agency's ability to effectively respond on the emergency occurs, this includes:

- Briefing local officials
- Reviewing plans and procedures
- Preparing and disseminating information to the community
- Testing systems such as communication and warning systems
- Updating resource lists

- Precautionary activation of the Emergency Operations Center(s)

Pre-Impact: When an event is foreseen as highly likely, action is taken to save lives and protect property. During this phase, warning systems are activated, resources are mobilized and evacuations may be initiated.

3.2.2 Immediate Impact

During this phase, emphasis is placed on saving lives, control of the situation and minimizing the effects of the event.

Alert and Notification

Response agencies are alerted about an incident by the public through the 9-1-1 system, the California State Warning Center, National Weather Service, another agency or other method. First responders are then notified of the incident.

Resource Mobilization

Response agencies activate personnel and mobilize to support the incident response. As the event escalates and expands, additional resources are activated and mobilized to support the response. Activation and mobilization continue for the duration of the event as additional resources are needed to support the response. This includes resources from within the affected jurisdiction, or when resources are exhausted, from unaffected jurisdictions.

Incident Response

Immediate response is accomplished within the affected area by local jurisdictions. First responders arrive at the incident and function within their established field level plans and procedures. The responding agencies will manage all incidents in accordance with ICS organizational structures, doctrine and procedures.

Establishing Incident Command

Incident Command is established to direct, order and control resources. Initial actions are coordinated through the on scene Incident Commander (IC). The IC develops an initial Incident Action Plan (IAP), which sets priorities for the incident, assigns resources and includes a common communications plan. If multiple jurisdictions or agencies are involved, the first responders will establish a Unified Incident Command Post (ICP) to facilitate multi-jurisdictional and multi-agency policy decisions. The IC may implement an Area Command to oversee multiple incidents that are handled by separate ICS organizations or to oversee the management of very large or evolving incidents.

Local EOC Activation

Local jurisdictions activate their EOC based on the on the magnitude or need for more coordinated management of the emergency. When activated, local EOCs help form a common operating picture of the incident by collecting, analyzing and disseminating emergency information. The local EOC can also improve the effectiveness of the response by reducing the amount of external coordination of resources by the IC by providing a single point of contact to support multi-agency coordination. When activated the local EOC notifies the OA.

Operational Area EOC Activation

If one or more local EOCs are activated, or if the event requires resources outside of the affected jurisdictions, the OA EOC activates. The OA EOC may activate if a Local Emergency is proclaimed by the affected jurisdiction. If the OA EOC activates, then coordination of resource requests from the affected jurisdiction takes place, if resources are not available with the OA, forwards the resource request to Cal OES REOC and mutual aid coordinators.

Regional Emergency Operations Center (REOC) Activation

Whenever an OA EOC is activated, the Cal OES Regional Administrator will activate the REOC and notifies Cal OES Headquarters. The REOC will coordinate resource requests from the affected OA, if resource requests are not available within the affected region, resource requests are forwarded to the SOC for coordination.

State Operations Center (SOC) Activation: the SOC is activated when the REOC activates in order to:

- Process resource requests between the affected regions, unaffected regions and state agencies.
- Process requests for federal assistance and coordinate with Federal Incident Management Assistance Teams when established.
- Coordinate interstate resource requests as part of the Emergency Management Assistance Compact (EMAC).

FEMA Regional Response Coordination Center (RRCC)

Activation: the FEMA RRCC activates to provide federal support for activities responding to federally declared disaster response and recovery.

3.2.3 Sustained Operations

As the event situation continues, further emergency assistance is provided to victims of the disaster and efforts are made to reduce the likelihood of secondary damage.

3.2.4 Transition to Recovery

As the initial and sustained operational priorities are met, emergency management officials consider the recovery phase needs. Short-term recovery activities include returning vital life-support systems to minimum operating standards. Long-term activity is designed to return to normal activities. Recovery planning should include reviews of ways to avert or mitigate future emergencies. During the recovery phase, damage is assessed, local assistance centers and disaster recovery centers are opened and hazard mitigation surveys are performed. Additional information can be found in the County and Operational Area Recovery Annex.

3.3 Direction, Control and Coordination

3.3.1 EOC Purpose

The County and OA EOC is the communication and coordination center for the County and OA Emergency Response Organization, providing a central point for coordinating operational, administrative, and support needs of the County and OA jurisdictions. It also assists in coordination and communication between Mutual Aid Coordinators and Cal OES during county-wide and state-wide emergency response and recovery operations. The County and OA EOC can be used to gather and process information to and from the county, cities, schools and special districts, business and industry, volunteer organizations, individuals and state and federal government agencies. It has the ability to function as a virtual County and OA EOC so that the County and OA jurisdictions may communicate between EOCs without co-location. In addition, the County and OA EOC may become responsible for managing the tactical operations of regional resources designed to more efficiently use the pooled resources of the County and OA jurisdictions or external resources to benefit the OA as a whole.

3.3.2 County of Orange Role and Responsibilities

The County of Orange, per County Board of Supervisors Resolution, is overseen by the County of Orange Emergency Management Council, the county's Disaster Council. During disasters, the County of Orange has the responsibility to direct and coordinate emergency operations at two levels, the field response and local government levels. At the field level, all response departments and agencies will use the Incident Command System (ICS) to standardize the emergency response and report emergency related information to the County emergency management organization located in the EOC.

The County of Orange EOC manages, for the County's jurisdiction, the overall response to major disasters and coordinates interdepartmental activity, implements local policies and determines the mission and priorities and provides direction and the authority to act. The County's EOC engages in long-range planning and coordination with outside agencies and organizations. The County also is the source of information for dissemination to the public, and provides support

for cost recovery efforts for the County by tracking and reporting the personnel, supplies, and equipment used by its various departments.

- Coordinating information, resources and priorities amongst departments within the jurisdictional boundaries.

3.3.3 Operational Area Role and Responsibilities

The California Emergency Services Act requires the Operational Area (with the County designated as the lead agency) to support OA jurisdictions, or local governments, in identifying and coordinating resources and in communicating with regional and state authorities. During disasters, OA jurisdictions are required to coordinate emergency operations with the OA and, in some instances, other local governments.

The OA is overseen by the Orange County Operational Executive Area Executive Board, which consists of members from the Board of Supervisors, Orange County Sheriff-Coroner Department, City Manager's Association & League of Cities, Health Care Agency, Department of Education, Independent Special Districts, OC Public Works, City Engineers' and Public Works Director's Association, Orange County Fire Authority, Fire Chief's Association, and Police Chiefs' and Sheriff Association. The Orange County OA:

- Shares information amongst OA jurisdictions and with California Office of Emergency Services (Cal OES) Southern Regional Emergency Operations Center (REOC).
- Assists OA jurisdictions in obtaining appropriate resources and personnel to support their operations.
- Serves as the OA-level mutual aid coordination point for OA jurisdictions seeking resource support from within or outside the Orange County Operational Area.
- Serves as the OA jurisdictions' link to state government authorities and resources;
- Identifies and coordinates with resources outside the mutual aid system for the benefit of OA jurisdictions.
- Identifies the best strategy for sharing, acquiring, and/or distributing resources and personnel in the OA based on its overall perspective of the needs of all involved OA jurisdictions.
- Deploys or coordinates regional resources to serve all OA jurisdictions when a single collective approach to certain operations is more efficient than individual efforts spread amongst OA jurisdictions.
- Identifies opportunities to improve the efficient use of response resources and personnel amongst OA jurisdictions.

Requests that the OA are unable to meet are passed to the Cal OES Southern REOC or appropriate mutual aid regional coordinator. California is divided into 6 mutual aid regions. The Orange County OA is in Region I, which includes Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo Counties. The Region I REOC is located in Los Alamitos, CA. Mutual Aid Regions I and VI make up the Southern Cal OES Administrative Region, which is managed through the Los Alamitos REOC.

3.3.4 EOC Activation

Activation of the County and OA EOC is required by SEMS, Title 19 California Code of Regulations Section 2409 (f), under the following conditions:

- On Request - A local government within the OA has activated its EOC and requested activation of the County and OA EOC to support its emergency operations. Jurisdiction(s) determine that additional response resources beyond that which would normally be covered by mutual aid are required and assistance from the OA may be necessary.
- Two City Local Emergency - Two or more cities within the OA have proclaimed a Local Emergency.
- County and City Local Emergency - The County and one or more cities have proclaimed a Local Emergency.
- Request for Governor's Proclamation - A city, city and County, or County has requested a Governor's proclamation of a State of Emergency, as defined in Government Code 8558(b).
- State of Emergency - A State of Emergency is proclaimed by the Governor of the State for the County or two or more cities within the OA.
- Request for Outside Resources - The OA is requesting resources from outside its boundaries, except those resources used in normal day-to-day operations which are obtained through existing agreements providing for the exchange or furnishing of certain types of facilities and services on a reimbursable, exchange, or other basis as provided for under the Master Mutual Aid Agreement.
- Request for OA Resources - The OA has received resource requests from outside its boundaries, except those resources used in normal day-to-day operations which are obtained through existing agreements providing for the exchange or furnishing of certain types of facilities and services on a reimbursable, exchange, or other basis as provided for under the Master Mutual Aid Agreement.

The DES and OAC, alternate or successor, will declare the County and OA EOC operational when adequate personnel have arrived to facilitate decisions.

3.3.5 Determining the Need to Activate

- When an emergency occurs, the County and all OA jurisdictions will analyze the situation and can request activation of the County and OA EOC, if appropriate.
- Designated emergency response in the field (Fire, Law Enforcement, Health Care, Public Works, etc.) will respond to emergencies, assess damage, and provide status reports to their jurisdiction according to internal operating procedures. The County and OA

jurisdictions compile the information and provide it to the County and OA EOC. The County and OA EOC will compile that information and provide it to Cal OES.

- The County and OA Emergency Manager monitor's situation reports from the County, OA jurisdictions, National Weather Service and the State, as well as radio frequencies and media reports.
- Control One will notify the County and OA Emergency Manager of situation reports which may warrant a county or county-wide emergency coordination, including any natural or technological emergency or disaster occurring in Orange County, or from State information sources (major fire, flood, storm, earthquake, hazardous materials release, large scale civil disturbance, etc.) in which:
 - Evacuation and/or sheltering of residents is required
 - Coordination of several County departments and/or OA jurisdictions in response to the emergency is necessary
 - Local resources may be overwhelmed and a proclamation of Local Emergency may be warranted
- The County and OA Emergency Manager contacts the designated DES and OAC and:
 - Briefs him or her on the current situation and resource status in the County and OA;
 - Determines if the current County and/or OA response is adequate; and
 - Assesses the need to notify and mobilize additional critical personnel and/or activate the County and OA EOC.

3.3.6 Levels of EOC Activation

The extent to which the County and OA EOC is activated and when the designated DES and OAC assumes responsibility for the County and OA EOC depends on the type of emergency situation, its potential for escalation, its geographic extent, and other factors. The level of County and OA EOC activation is determined by the designated DES and OAC and County and OA Emergency Manager in consultation with the affected jurisdiction(s). Once the County and OA EOC is activated, the County and OA Emergency Manager becomes the County and OA EOC Manager. In consultation with the designated DES and OAC, the County and OA EOC Manager determines an appropriate level of activation for the EOC. The activation levels and their associated staffing¹⁰ are identified below:

Duty Officer Status

The County and OA EOC is not activated however, the designated Duty Officer coordinates situation status and/or information from the County, OA, National Weather Service or State to the appropriate entities. This is similar to day to day operations.

Level 3 (Type III) Activation – Low Level Activation

1. Designated DES and OAC
2. County and OA EOC Manager

¹⁰ Minimum staffing may vary with the actual situation.

3. OC Sheriff Department, Emergency Management Division Staff (as appropriate)

Level 2 (Type II) Activation – Moderate Level Activation

1. Designated DES and OAC
2. County and OA EOC Manager
3. OC Sheriff Department, Emergency Management Division Staff
4. Public Information Officer
5. Sections, Branches, Units and Groups, as required
6. Support pool staffing (Hotline, Messenger, Situation Analysis Support Staff, etc.), as required
7. Specialists as required

Level 1 (Type I) Activation – High Level Activation

1. All County and OA EOC positions as required by the event/situation

3.3.7 Deactivation of the County and OA EOC

The designated DES and OAC has the authority to determine when it is appropriate to deactivate the EOC.

The duration of an EOC activation is often dependent on the severity of the emergency situation. For pre-planned events or smaller incidents with few recovery concerns the activation might be limited to days or even hours. In major catastrophic situations the EOC may be activated for months and potentially a year or longer as operations shift from response to supporting long-term recovery of the community.

Following smaller incidents, deactivation of the EOC will typically take place after on-scene incident management activities have ceased, when it is determined that on-scene personnel have the incident fully contained and there is limited or no possibility of escalation, or when the incident has become small and specific enough that a single DOC can manage the incident alone. In either case, the DES and OAC, in consultation with the Policy Group, will determine the appropriate time to deactivate the EOC.

Once the decision has been made to deactivate the EOC, reducing EOC activities will occur in a phased process. Depending on the magnitude of the incident and the associated response, this phased process may be implemented over months, days, hours, or even minutes. The precise timing of each phase will be determined by the DES and OAC. The five phases are as follows:

Operations Section

The Operations Section will typically be the first to deactivate. The specifics of demobilization will be determined by the Operations Section Chief and Branch Directors in accordance with the Demobilization Plan developed by the Planning and Intelligence Section, Demobilization Unit.

Logistics Section

The Logistics Section will support the Operations Section's deactivation. It will begin closing down facilities and reclaiming or disposing of resources that were used to support emergency workers (e.g., feeding locations, lodging, sanitation, etc.). It will also assist in accounting for resources, determining their status, returning or disposing of response resources, and reporting status, costs, and losses to the Finance and Administration Section.

Planning and Intelligence Section

Following the deactivation of the Operation Section and Logistics Section without incident, the Planning and Intelligence Section will cease operations. The Planning and Intelligence Section remains active while the Operations and Logistics Sections deactivate in case complications with field demobilization or resource management arise that might need to be addressed strategically. In addition, the Planning and Intelligence Section, Demobilization Unit is responsible for developing the demobilization plan that is being used by the Operations and Logistics Sections. Should questions arise or revised strategies be needed, the Planning and Intelligence Section will be available during this critical time.

Finance and Administration Section

The Finance and Administration Section is next to the last functional element to cease operations because it is responsible for gathering all documentation related to the incident, identifying all associated costs (including demobilization costs), and leading cost recovery efforts. It may sometimes take considerable time to ensure all appropriate documentation is gathered from the other sections and to validate costs. Furthermore, complete accountability for the operation cannot be determined until all other sections have fully deactivated.

Management Section

The DES and OAC is accountable for all emergency management activities occurring in the EOC from start to finish. Therefore, the Management Section is the last to deactivate. At any time throughout the deactivation process, the DES and OAC may choose to dismiss elements of the Management Section. The DES and OAC will typically receive a debriefing from the Section Chiefs as they cease operations. Once the last Section Chief has provided his or her debrief and the DES and OAC is confident that operations are terminated and all things are accounted for, then official operational deactivation may result.

As individuals are released from the EOC, they will perform the following activities in accordance with the SEMS Generic Demobilization Phase Checklist:

- Close out logs when authorized by the appropriate Section Chief.
- Complete all required forms, reports, and other documentation. Submit all forms and logs to the Planning and Intelligence Section, Documentation Unit, prior to departure.
- Notify other appropriate organizations of the deactivation.
- Ensure any open actions not yet completed will be handled after deactivation.
- Be prepared to provide input to the after-action report.

Following an EOC activation and prior to deactivation, the Emergency Management Division will be responsible for restoring the County and OA EOC to a state of readiness. This may include:

- Ensure Logistics Section has coordinated the following:
 - cleaning services
 - Servicing equipment and/or coordinating repairs
 - Restocking EOC supplies.
 - Reorganizing and rearranging furniture or other resources
- Producing fact sheets or public information for use by OC Sheriff's Department, Emergency Communications Bureau (Dispatch Center).
- Ensure PIO has updated of County of Orange website, Twitter and other social media accounts.

3.4 Organization and Assignment of Responsibilities

The emergency response of government agencies in California is an extension of day-to-day operations. Emergency operations rely on the normal authority and responsibilities of government, plus police powers that may be invoked by executive authority under specified conditions. Governments at all levels must work together effectively, along with the private sector, business and industry, community based organizations, and volunteers, to meet the challenges posed by a disaster. SEMS and NIMS are the systems required for managing response to multi-agency and multi-jurisdiction emergencies in California as described in the next section. SEMS and NIMS help unify all elements of California's emergency management organization into a single integrated system.

The five SEMS and NIMS organization levels, together with the private sector, are collectively referred to as the California Emergency Organization. This organization represents all resources available within the State which may be applied in disaster response and recovery phases. The system operates from established EOCs at all levels of government, as well as in many businesses and industries. The goal is to support emergency activities to protect life, property, and the environment.

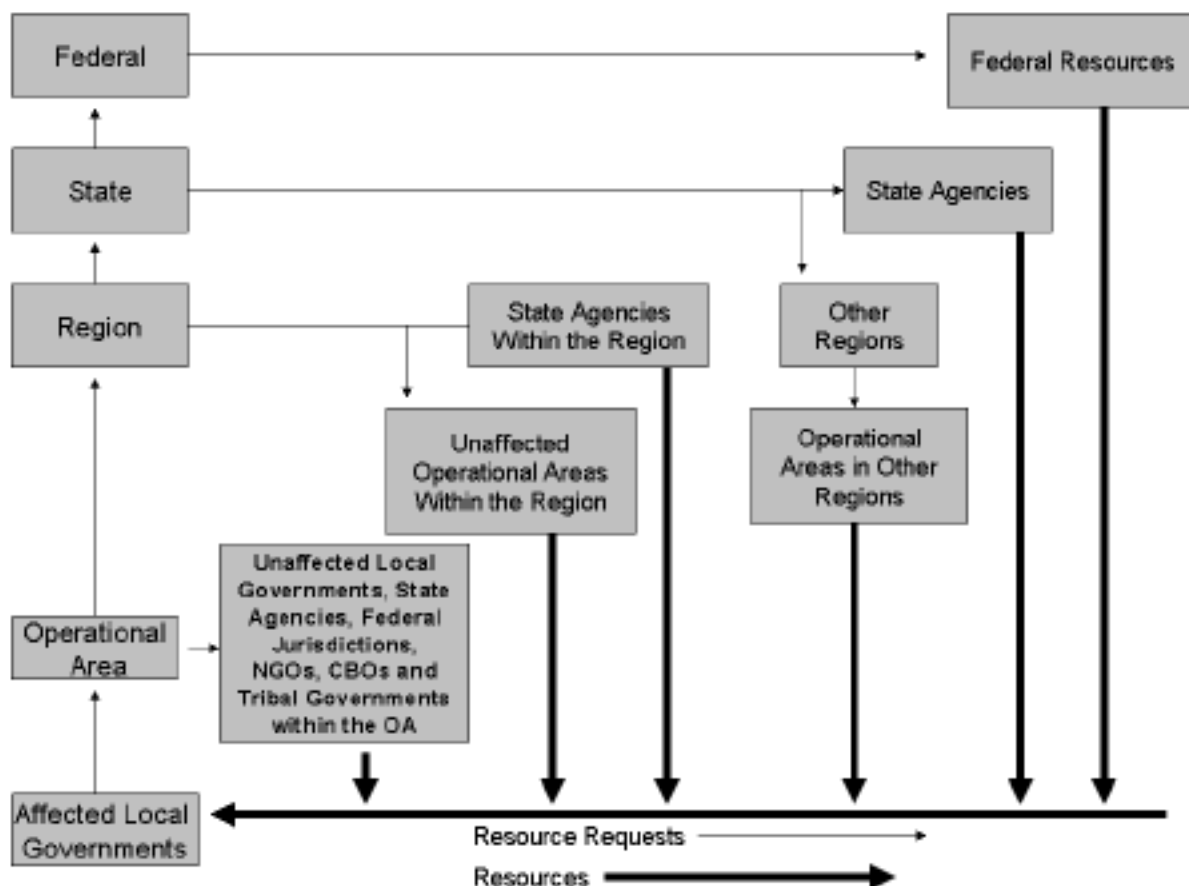
Emergency mutual aid response and recovery activities are generally conducted at the request and under the direction of the affected local government. Some emergency responses are led by designated state agencies. In some cases, there may be joint response that requires a Unified Command between state and local jurisdictions (e.g., hazardous material, nuclear power plant, and terrorism emergencies).

Resource requests for response and recovery originate at the lowest level of government and are progressively forwarded to the next level until filled. For example, if an OA is unable to

provide the necessary requested assistance, it may contact the Cal OES Region at the REOC and forward the request. During complex emergencies involving multiple jurisdictions and agencies, coordination of resources can be achieved through the use of liaison officers, agency representatives, and unified command.

When support requirements cannot be met with state resources, the State may request assistance from those federal agencies having statutory authority to provide assistance in the absence of a Presidential Declaration. The State may also request a Presidential Declaration of an Emergency or Major Disaster under the provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93288 as amended.

Figure 20 -Resource Request, and Supply Paths for the OA



3.4.3 Emergency Organizational Levels

When fully activated, the Standardized Emergency Management System (SEMS), consists of five levels: field response, local government, Operational Area, Cal OES Mutual Aid Regions, and state government. For the OA, those levels are assigned as follows:

Field	Field Command
Local Government	Emergency Operations Center
Operational Area	Orange County OA EOC
Region	Cal OES Southern Region EOC (REOC)
State	Cal OES State Operations Center (SOC)

Field Response Level

The field response level is where emergency response personnel and resources, under the command of an appropriate authority, carry out tactical decisions and activities in direct response to an incident or threat. SEMS and NIMS regulations require the use of the ICS at the field response level. The ICS field functions to be used for emergency management include Command, Operations, Planning and Intelligence, Logistics, and Finance and Administration.

Local Government Level

Local governments include counties, cities, school districts, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities within their jurisdiction and amongst their field responders. Local governments are required to use SEMS and NIMS when their EOC is activated or a local emergency is proclaimed in order to be eligible for recovery funding of response-related personnel costs. In SEMS and NIMS, the local government emergency management organization and its relationship to the field response level may vary depending upon factors related to geographical size, population, function, and complexity. Local jurisdictions are responsible for the overall direction of personnel and equipment provided for emergency operations through mutual aid (Government Code Section 8618). Local governmental levels shall provide the following functions: Management, Operations, Planning and Intelligence, Logistics, and Finance and Administration. Additional details relative to the organization and responsibilities of the SEMS and NIMS elements in the County EOC are provided in EOC Concept of Operations, as well as the position checklists.

Operational Area Level

Section 8605 of the California Emergency Services Act designates each county area as an Operational Area (OA). California is comprised of 58 OAs, one for each geographic county. The OA is the intermediate level of the state's emergency services organization, and consists of the county government, local (city) governments and special districts, located within the county area. During a State of Emergency, a State of War Emergency, or a Local Emergency, OA's are used to coordinate resources, develop priorities, disseminate information, and serve as a coordination and communication link to the State Mutual Aid System. As of December 1, 1996, per SB 1841, the utilization of the OA during emergencies is mandatory for local governments who wish to receive financial reimbursement for related response costs. Signatories to the Orange County OA Agreement consist of cities, school districts, special districts and the County of Orange. The OA is responsible for:

- Coordinating information, resources and priorities amongst local governments within the OA.
- Coordinating information, resources and priorities between the regional level and the local government level.
- Using multi-agency and inter-agency coordination to facilitate decisions for overall OA level emergency response activities.

SEMS regulations specify that the county board of supervisors is responsible for the establishment of an OA. The Orange County Sheriff-Coroner Department is the lead agency for the Orange County OA. All local governments cooperate in organizing an effective operational area, but the OA's authority and responsibility are not affected by the nonparticipation of any local government.

If the County and OA EOC is activated, an Operational Area Coordinator (OAC) will be appointed depending on the type of hazard and will have the overall responsibility for coordinating resources on behalf of OA jurisdictions and supporting emergency operations within the county, as directed in the Orange County Operational Area Agreement.

Regional Level

The Regional Level manages and coordinates information and resources among OAs within the mutual aid region and also between the OA and the State Level. The Regional Level also coordinates overall state agency support for emergency response activities within the region. California is divided into three Cal OES Administrative Regions-Inland, Coastal and Southern, which are further divided into six mutual aid regions. The Regional Level operations out of the Regional Emergency Operations Center (REOC).

Figure 21 - Cal OES Administrative Regions



State Level

The State Level prioritizes tasks and coordinates state resources in response to the requests from the Regional Level and coordinates between the Regional Level and State Level. The State Level also serves as the coordination and communication link between the state and the federal emergency response system. The State Level coordinates with the Federal Level when federal assistance is requested.

Federal Level

At the Federal Level the National Response Framework identifies the methods and means for federal resources to provide support to the state and local government.

3.4.4 Emergency Organization Functions and Concepts

SEMS and NIMS require five functions: Management, Operations, Planning and Intelligence, Logistics, and Finance and Administration. The term command is used in the field and management is used in multiagency coordination centers (e.g., EOCs). These functions are the basis for structuring the Orange County Operational Area EOC organization:

Management	Responsible for the overall emergency policy and coordination through the joint efforts of governmental agencies and private organizations. Dissemination of information and protective actions to the public.
Operations	Responsible for coordinating and supporting tactical operations of the emergency response at the field level.
Planning and Intelligence	Responsible for collecting, evaluating and documenting information, resources, developing the EOC Incident Action Plan, Situation Summary Reports, and After-Action Reports in coordination with other EOC functions.
Logistics	Responsible for obtaining and providing services, personnel, equipment, supplies, materials, facilities and volunteer coordination.
Finance and Administration	Responsible for all financial activities and other administrative aspects.

Organization Flexibility and Modular Organization

The five essential SEMS and NIMS functions are established as “sections” within the County and OA EOC. All other functions will be organized as branches, groups, or units within sections. The

activated functions and their relationship to one another will depend upon the size and nature of the incident. Only those functional elements required to meet current objectives will be activated. Those functions that are needed but not staffed will be the responsibility of the next higher element in the organization.

Management of Personnel - Unity of Command and Span of Control

Each activated function will have only one person in charge of it (Unity of Command), but a supervisor may be in charge of more than one functional element. Every individual will have only one supervisor to eliminate any potential for conflicts or confusion among supervisors, and each supervisor will be responsible for no more than seven persons or functions, with the ideal span of control being three to seven.

The County and OA EOC Section Chiefs for Operations, Planning and Intelligence, Logistics, and Finance and Administration constitute the EOC General Staff. The General Staff are responsible for:

- Overseeing the internal functioning of their section.
- Interacting with each other, the DES and OAC, County and OA EOC Manager, and other entities within the County and OA EOC to ensure the effective functioning of the EOC organization.

Unified Command and Area Command Concepts

Unified Command (UC) is an ICS application used when more than one agency has incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the UC, often the senior person from agencies or disciplines participating in the UC, to establish a common set of objectives and strategies and a single Incident Action Plan (IAP) (e.g., EOC, Field, etc.). This is accomplished without losing or abdicating agency authority, autonomy, responsibility, or accountability. This occurs most frequently at the field level, in large-scale events, that involve more than one jurisdiction.

An Area Command is an organization established to oversee the management of multiple incidents that are each being handled by an ICS organization, or to oversee the management of large or multiple incidents to which several Incident Management Teams have been assigned. The Area Command has the responsibility to set overall strategy and priorities, allocate critical resources according to priorities, ensure incidents are properly managed, and ensure objectives are met and strategies followed. Area Command becomes Unified Area Command when the multiple incidents under the control of the Area Command are multi-jurisdictional. Area Commands are typically established at EOCs or some location other than an incident command post.

The County and OA EOC could become a Unified Command depending on the situation and the types of disciplines requiring involvement in the coordination of response activities. Typically the EOC does not serve as an Area Command; however, it is an option based on the flexible nature of ICS and the given situation. County of Orange may also be integrated into a UC or Area Command established in another jurisdiction during an incident in which it is involved in.

Multi-Agency and Organizational Level Coordination

An integral part of SEMS and NIMS is the use of multi and inter-agency coordination. Within the context of SEMS and NIMS, this involves prioritizing and assigning resources, handling competing demands, and maximizing resources amongst numerous response organizations, disciplines, and levels.

3.5 Mutual Aid

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure adequate resources, facilities, and other support are provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. The basis for the system is the California Disaster and Civil Defense Master Mutual Aid Agreement and is provided for in the California Emergency Services Act. This Agreement was developed in 1950 and has been adopted by the state, all 58 counties and most incorporated cities in the State of California. The Master Mutual Aid Agreement creates a formal structure wherein each jurisdiction retains control of its own facilities, personnel and resources, but may also receive or render assistance to other jurisdictions within the state. State government is obligated to provide available resources to assist local jurisdictions in emergencies.

3.5.1 California Mutual Aid System

A statewide mutual aid system, operating within the framework of the California Master Mutual Aid Agreement, allows for the progressive mobilization of resources to and from emergency response agencies, local governments, Operational Areas, regions, and the state with the intent to provide requesting agencies with adequate resources.

The statewide mutual aid system includes several discipline-specific mutual aid systems, such as fire and rescue, law, medical, emergency management, water and waste water and public works. These systems work through local government, operational areas, regional, and state levels consistent with the SEMS and NIMS. Mutual aid may also be obtained from other states. Interstate mutual aid may be obtained through direct state-to-state contacts pursuant to interstate agreements and compacts, or may be coordinated through federal agencies.

California mutual aid regions are established under the Emergency Services Act by the Governor.

3.5.2 Mutual Aid Coordinators

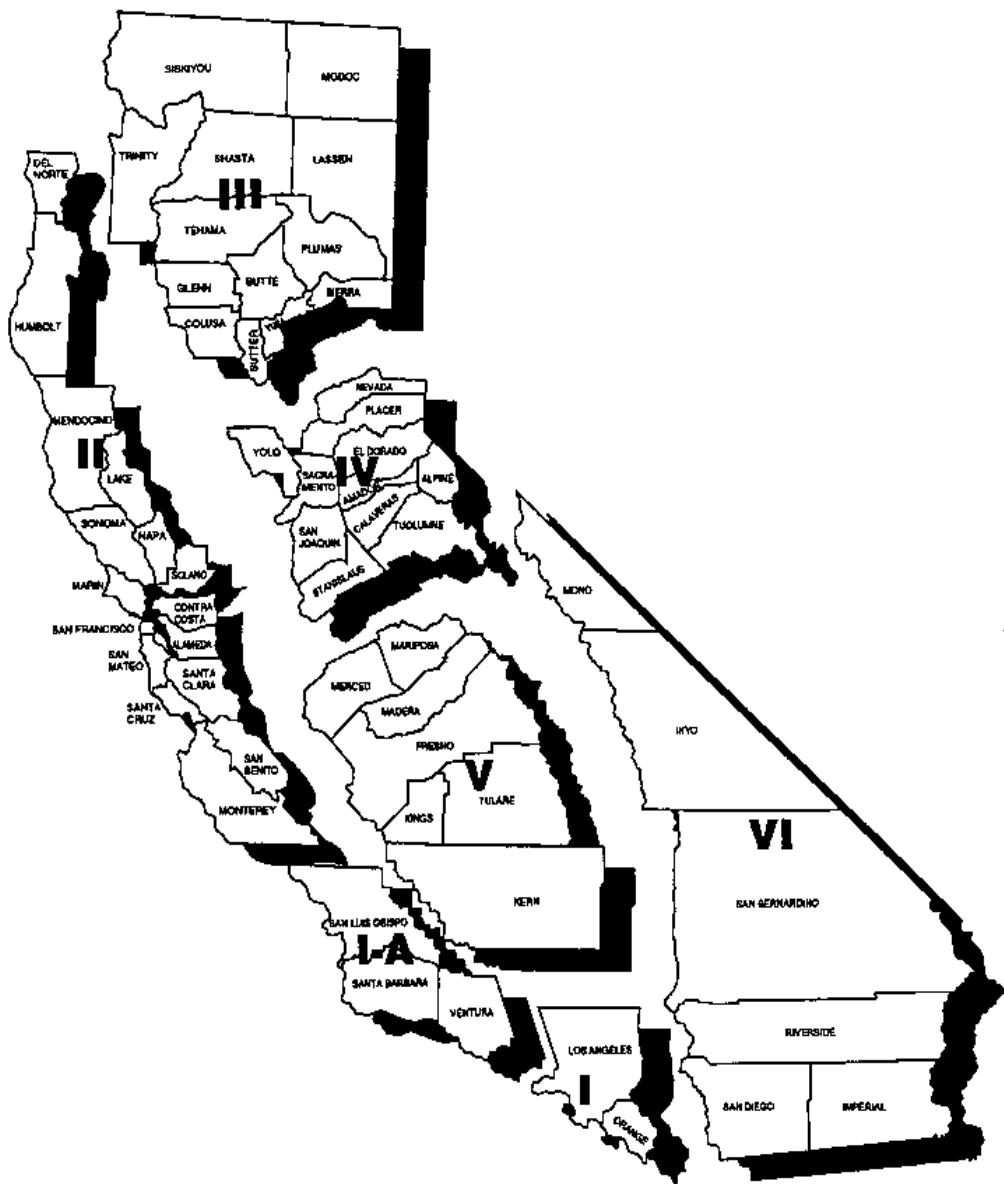
To facilitate mutual aid, discipline-specific mutual aid systems work through designated mutual aid coordinators at the local, Operational Area, regional, and state levels. The basic role of a mutual aid coordinator is to receive mutual aid requests, coordinate the provision of resources from within the coordinator's geographic area of responsibility, and pass on unfilled requests to the next level.

Mutual aid requests that do not fall into one of the discipline-specific mutual aid systems are handled through the emergency services mutual aid system by emergency management staff at the local government, Operational Area, regional and state levels.

Mutual aid coordinators may function from an Emergency Operations Center (EOC), their normal departmental location or other locations depending on the circumstances. Some incidents require mutual aid but do not necessitate activation of the affected local government or County and OA EOC because of the incident's limited impacts. In such cases, mutual aid coordinators typically handle requests from their normal work location. When EOCs are activated, all activated, discipline-specific mutual aid systems should establish coordination and communications with the EOCs as follows:

- When the County and OA EOC is activated, the mutual aid system representatives will be at the County and OA EOC to facilitate coordination and information flow.
- When Cal OES or regional EOC (REOC) is activated, regional mutual aid coordinators should have representatives in the REOC unless it is mutually agreed that effective coordination can be accomplished through telecommunications.
- State agencies may be requested to send representatives to the REOC to assist Cal OES regional staff in handling mutual aid requests for disciplines or functions that do not have designated mutual aid coordinators.
- When the State Operations Center (SOC) is activated, state agencies with mutual aid coordination responsibilities will be requested to send representatives to the SOC.

Figure 22 - Law Enforcement and Coroner Mutual Aid Regions



[illegible]

When there are not enough resources within the Orange County to respond effectively to an emergency, the Mutual Aid Coordinators will be responsible for coordinating the securing of resources through the OA. Such coordination and acquisition of resources does not require an activation of the County and OA EOC. When resources are required from outside of the Orange County the Mutual Aid Coordinators will provide relevant information and submit requests for support to the Cal OES REOC. In larger scale incidents, Mutual Aid Coordinators will work from the County and OA EOC when mutual aid channels are active.

Resource requests submitted to the OA from the County and those passed from the OA to the Southern REOC should specify, at a minimum:

- Number and type of personnel needed.
- Type and amount of equipment needed.
- Reporting time and location.
- Authority to whom resources should report.
- Estimated duration of operations.
- Access routes.
- Risks and hazards.

Mutual aid assistance may be provided under one or more of the following authorities:

- California Master Mutual Aid Agreement.
- California Fire and Rescue Emergency Mutual Aid Plan.
- California Law Enforcement Mutual Aid Plan.
- California Coroners' Mutual Aid Plan.
- California Emergency Management Mutual Aid (EMMA) Plan.
- California Medical Mutual Aid Plan.
- Statewide Public Works Mutual Aid Agreement.
- Emergency Management Assistance Compact (EMAC).
- Transit Mutual Assistance Compact (TransMac).
- Orange County Operational Area Agreement.
- Water Emergency Response Organization of Orange County (WEROC).
- California Water/Wastewater Agency Response Network (Cal WARN).
- Robert T. Stafford Disaster Relief and Emergency Assistance Act.

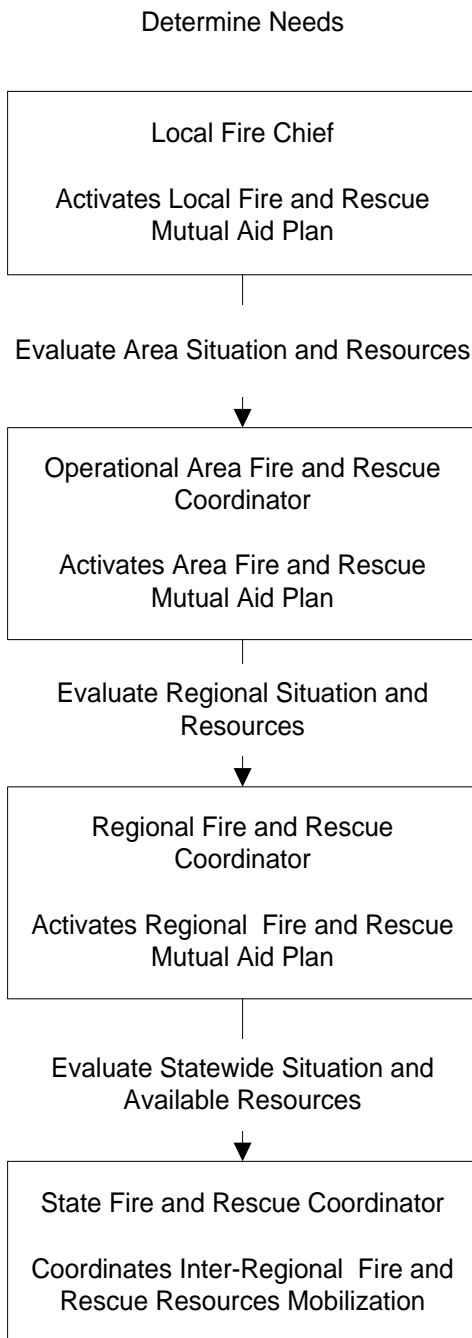
3.5.4 Orange County Mutual Aid Structure

Fire and Rescue Mutual Aid

The Orange County Fire Authority (OCFA) coordinates the Fire and Rescue Mutual Aid System for the County and OA. The Fire and Rescue Mutual Aid Coordinator is responsible for organizing and coordinating with other fire and rescue agencies within the OA for resources to support the County and OA. If the Fire and Rescue Mutual Aid Coordinator is unable to mobilize appropriate resources from within the Operational Area, then the Regional Fire and Rescue Coordinator and the Southern REOC, will be contacted.

Fire and Rescue Mutual Aid air support will be coordinated through normal fire mutual aid channels. Additional air support assets can be requested through the Law Enforcement Mutual Aid Coordinator. Sheriff's Department and Anaheim Police Department helicopters may be used for aerial reconnaissance and water drops.

Figure 24 – Channels for Requesting Fire and Rescue Mutual Aid Resources



Law Enforcement and Coroner Mutual Aid

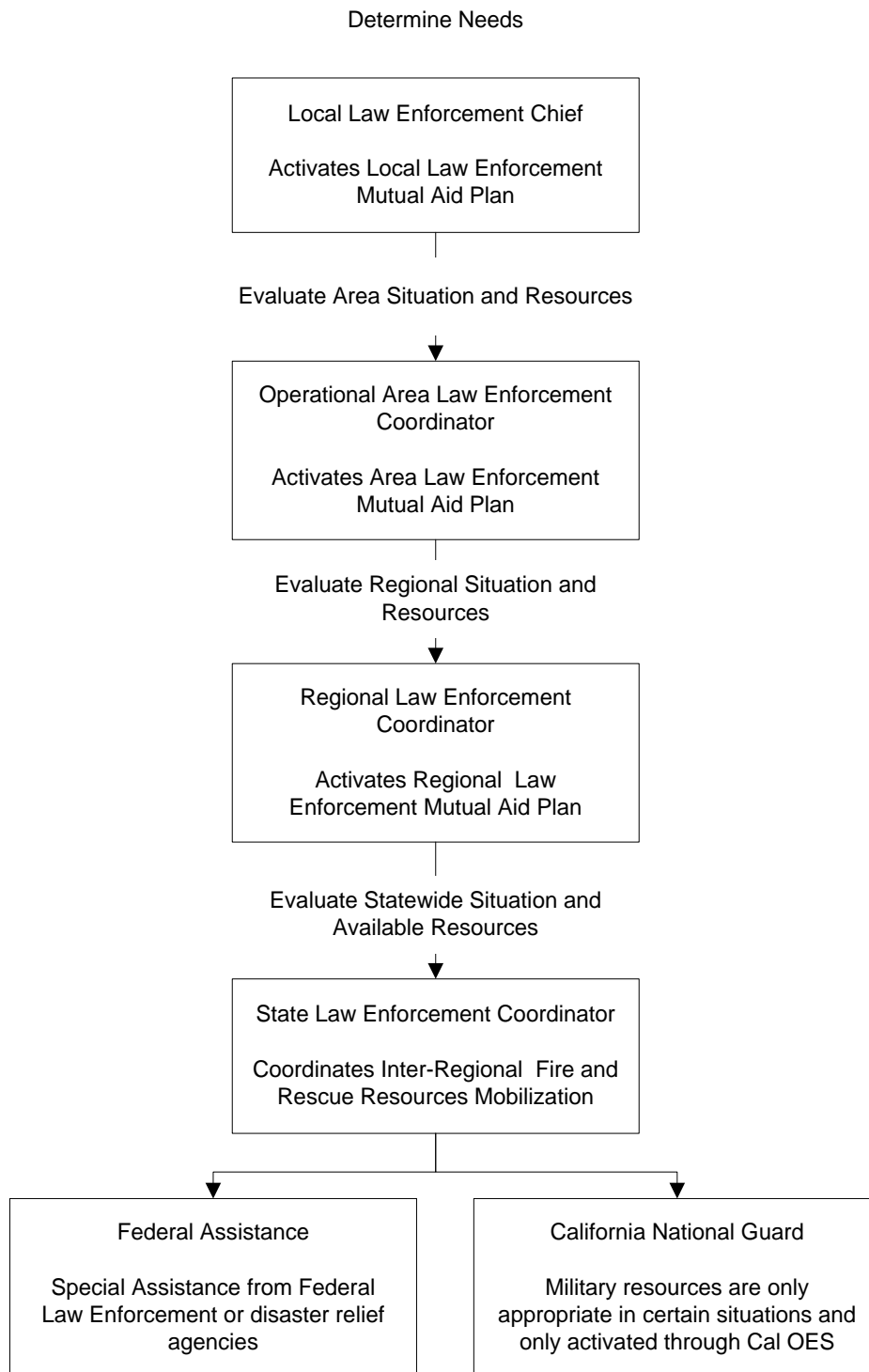
The Orange County Sheriff-Coroner Department coordinates the Law Enforcement and Coroner Mutual Aid System for the County and OA and serves as the Operational Area Coordinator. The Law Enforcement and Coroner Mutual Aid Coordinator is responsible for organizing and coordinating with other law enforcement agencies within the OA for resources to support the

OA. If the Law Enforcement and Coroners Mutual Aid Coordinator is unable to gather appropriate resources from within the OA, then the Regional Law Enforcement and Coroner Coordinator and the Southern REOC, will be contacted.

The Law Enforcement Mutual Aid system is further boosted by Section 830.1 of the Penal Code, which states that whenever a State of Emergency exists within a region or area, the following personnel within the region or area, or who may be assigned to duty therein, have full peace officer powers and duties:

- All members of the California Highway Patrol.
- All deputies of the Department of Fish and Game who have been appointed to enforce the provisions of the Fish and Game Code.
- The State Forester and the staff of the Department of Forestry who are designated by the State Forester as having the powers of peace officers.
- Peace officers who are state employees within the provisions of Section 830.5 of the Penal Code

Figure 25 – Channels for Requesting Law Enforcement and Coroner Mutual Aid Resources



Public Works Mutual Aid

OC Public Works coordinates the Public Works Mutual Aid System for the County and OA and serves as the Operational Area Coordinator. The Public Works Mutual Aid Coordinator is responsible for organizing and coordinating with other public works resources and agencies in the OA for resources to support the OA. If the Public Works Mutual Aid Coordinator is unable to mobilize appropriate resources from within the OA, then the Regional Public Works Coordinator at the Southern REOC will be contacted.

The Public Works Mutual Aid Coordinator also coordinates with the Water Emergency Response Organization of Orange County (WEROC). WEROC plays a critical role in managing the OA regional water supply system during an emergency. WEROC was organized on the basis that each water agency would be responsible for implementing its own preparedness plan to meet specific emergency needs within its service area. WEROC acts as a facilitator in expediting requests for and offers available personnel, equipment, and materials between water agencies. WEROC assists in maintaining contact with the OA and other key entities. The Public Works Mutual Aid Coordinator and WEROC representatives must coordinate closely when both are activated.

Medical Mutual Aid

The Orange County Health Care Agency coordinates the Medical Mutual Aid System for the County and OA and serves as the Medical and Health Operational Area Coordinator (MHOAC). The MHOAC is responsible for organizing and coordinating with other health and medical resources and agencies within the OA for resources to support the OA. If the MHOAC is unable to obtain appropriate resources from within the OA, then the Regional Medical and Health Coordinator at the Southern REOC will be contacted.

California Emergency Management Mutual Aid (EMMA)

The purpose of Emergency Management Mutual Aid (EMMA) is to provide emergency management personnel and technical specialists from unaffected areas to support local jurisdictions, OA and regional emergency operations impacted by a disaster. EMMA is a system, which includes organization, information and forms to coordinate the formal request, reception, assignment, training and demobilization of assigned personnel.

Emergency Management Assistance Compact (EMAC)

California is a member of the interstate Emergency Management Assistance Compact (EMAC), a congressionally ratified organization that provides from, structure and procedures for rendering emergency assistance between states. After a state of emergency declaration, California can request and receive reimbursable assistance through the EMAC from other member states quickly and efficiently without issues of liability. The Secretary of Cal OES and the states EMAC

Coordinator are responsible for facilitating request for assistance pursuant to EMAC. Additional information on EMAC can be accessed at <http://www.emacweb.org>.

Collaborating Organizations Active in Disaster-Orange County (COAD-OC)

COAD-OC is an organization in Orange County that focuses on coordinating private sector, nonprofit and community based organizations and government agencies in order to support response and recovery coordination of volunteer and material resources, and to assist with the long-term recovery by identifying emerging and unmet needs of the community.

COAD-OC is the official Voluntary Organizations Active in Disaster (VOAD) for Orange County and is a member of Southern California VOAD, a State Chapter of National VOAD. National VOAD was formed in 1970 and is the forum where organizations share knowledge and resources throughout the disaster cycle, preparation, response and recovery to help disaster survivors and their communities. In addition to being part of a national standard, following a disaster, COAD-OC can request resources or other support from Southern California VOAD when requested and in coordination with the Orange County Operational Area Emergency Operations Center.

Water and Wastewater

The Water Emergency Response Organization of Orange County (WEROC) is a mutual aid agreement between 35 water and wastewater utilities within Orange County; including city departments, special districts and one private entity. The purpose of WEROC is to share information and resources amongst the water utilities to ensure a coordinated response amongst systems that are operationally connected and utilize similar resources. The WEROC Mutual Aid Coordinator (OA WEROC Liaison) is responsible for organizing and coordinating with the water utilities in the OA for resources to support the response. If the WEROC Mutual Aid Coordinator is unable to mobilize appropriate resources from within the Operational Area, then the Cal WARN Region 1 Representative and the Southern REOC will be contacted.

The California Water and Wastewater Agency Response Network (CalWARN) is a state-wide mutual aid program recognized by the Cal OES. Cal WARN currently has 325 water and wastewater utilities as signatories throughout the State of California. Cal WARN is divided by the Cal OES mutual aid areas and is coordinated through the Water Sector Unit Leader at each Cal OES Regional EOC. CalWARN has committed to coordinating information and resources for all water and wastewater utilities, regardless of a signed agreement, to ensure the coordination of resources essential to life safety and health.

3.6 Emergency Proclamations

Emergency proclamations expand the emergency powers and authorities of the state and its political subdivisions. They also provide a mechanism for unaffected jurisdictions to provide

resources and assistance to the affected jurisdictions. Although emergency proclamations facilitate the flow of resources and support to the affected jurisdictions and local government, they are not a prerequisite for rendering mutual aid and assistance under existing agreements.

Definition of Local Emergency

The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city, caused by such conditions as fire, flood, storm, epidemic, civil unrest, drought, severe energy shortage, plant or animal infestation or disease, earthquake or other conditions, other than conditions resulting from a labor controversy, which are or are likely to be beyond the control of services, personnel, equipment and facilities of that political subdivision and require the combined forces of other political subdivisions to combat (California Government Code, section 8558 (c)).

The California Emergency Services Act provides for three types of emergency proclamations in California:

- Local Emergency
- State of Emergency
- State of War Emergency

Local Emergency Proclamation

A local governing body or designee may proclaim a Local Emergency if there is extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city where the declaring entity is overwhelmed and unable to abate an existing or potential emergency and requires resources from other unaffected political subdivisions and jurisdictions.

Issued by (Government Code section 8630 (a)):

- Governing body of a city, county or city and county or
- An official designated by ordinance adopted by that governing body.

Purpose (Government Code sections 8625 and 8634):

- Authorizes the promulgation of orders and regulations necessary to protect life and property (e.g., special purchasing or emergency contracting).
- Power to conduct and perform emergency response activities under emergency conditions with broadened immunities from legal liability for performance or failure of performance.
- Describes the circumstances that exist that may support the need for issuance of a State of Emergency Proclamation and/or Executive Order.

- Supports request for a Director's Concurrence, Governor's Proclamation of a State of Emergency, Executive Order, California Disaster Assistance Act (CDAA) funding, and/or a Presidential Declaration of Emergency or Major Disaster.

Deadlines:

- Issuance: Within 10 days after the actual occurrence of a disaster if assistance will be requested through CDAA (Government Code section 8685.2).
- Ratification: If issued by official designated by ordinance, just be ratified by governing body within 7 days (Government Code section 8630 (b)).
- Renewal: Reviewed at least once every 30 days by the governing body until terminated (Government Code section 8630 (c)).
- Termination: At the earliest possible date that conditions warrant (Government Code 8630 (d)).

When a local government requests a Gubernatorial State of Emergency Proclamation, Directors Concurrence and/or CDAA funding, the local government will need to provide information describing local response efforts and identify the specific type and extent of state emergency assistance needed, including regulatory waivers necessary to facilitate the protection of life and property during response efforts.

Each political subdivision within the OA will retain the powers and responsibilities as granted by law to proclaim an emergency in its jurisdiction according to procedures set forth by the jurisdiction. The County Board of Supervisors will retain the powers and responsibilities as prescribed by County Ordinance No. 3915, Section 3-1-6, to proclaim an emergency for the County of Orange and for the County geographic area.

Notifications Process (consistent with Standardized Emergency Management System (Government Code section 8607))

- Local governments should notify the OA and provide a copy of the local emergency proclamation as soon as possible.
- OA shall notify Cal OES Region and provide a copy of the proclamation as soon as possible.
- Cal OES Region will ensure notification to the Cal OES Director and Deputy Directors and shall be the primary contact between the Cal OES Director, OA and local jurisdiction for updates on any requests for assistance.
- Cal OES Director will respond in writing to the local government concerning the status of any request for assistance included within the local proclamation or accompanying letter.

Request for Cal OES Secretary's Concurrence

Local governments can request cost reimbursement from the state for certain disaster-related expenditures under the California Disaster Assistance Act (CDAA) following the proclamation of a Local Emergency. Cal OES must receive the request from local government within 10 days after the actual occurrence of a disaster and include the Initial Damage Estimate (IDE) and a request from the City Mayor or Administrative Officer or County Board of Supervisors.

Request for the Governor to Proclaim a State of Emergency

When emergency conditions exceed, or have the potential to exceed, local resources and capabilities, local government may request state assistance under the California Emergency Services Act (ESA). Cal OES must receive the request from local government within 10 days after the actual occurrence of a disaster and include the Initial Damage Estimate (IDE) and a request from the City Mayor or Administrative Officer or County Board of Supervisors.

Initial Damage Estimate

The request for a Governor's Proclamation of Emergency should include a copy of the local proclamation document and an Initial Damage Estimate (IDE) that estimates the severity and extent of the damage caused by the emergency. An IDE may not be required for sudden emergencies with widespread impacts, emergencies of significant magnitude, or during fast moving emergencies where immediate response assistance is necessary.

Analysis of Request

The request and the IDE are reviewed by the Cal OES Region and a recommendation is made to the Governor through the Secretary of Cal OES.

Proclamation of a State of Emergency

The Governor proclaims a State of Emergency based on the formal request from the local governing body and the recommendation of Cal OES. If conditions and time warrant, the Governor drafts and signs a formal State of Emergency Proclamation. The Governor has expanded emergency powers during a proclaimed State of Emergency. The Governor:

- Has the right to exercise police power, as deemed necessary, vested in the State Constitution and the laws of California within the designated area.
- Is vested with the power to use and commandeer public and private property and personnel, to ensure all resources within California are available and dedicated to the emergency when requested.
- Can direct all state agencies to utilize and employ personnel, equipment and facilities for the performance of any and all activities designed to prevent or alleviate actual and threatened damage due to the emergency and can direct them to provide supplemental

services and equipment to political subdivisions to restore any services in order to provide for the health and safety of the residents of the affected area.

Governor's Proclamation Without a Local Request

A request from the local governing body is not always necessary for the Governor to proclaim a State of Emergency. The Governor can proclaim a State of Emergency if the safety of persons and property in California are threatened by conditions of extreme peril or if the emergency conditions are beyond the emergency response capacity and capabilities of the local authorities.

Proclamation of a State of War Emergency

In addition to a State of Emergency, the Governor can proclaim a State of War Emergency whenever California or the nation is attacked by an enemy of the United States, or upon receipt by California of a warning from the federal government indicating that such an enemy attack is probable or imminent. The powers of the Governor granted under a State of War Emergency are commensurate with those granted under a State of Emergency.

State Request for a Presidential Declaration

When it is clear that State capabilities will be exceeded, the Governor can request Federal assistance, including assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act). The Stafford Act authorizes the President to provide financial and other assistance to State and local governments, certain private nonprofit organizations, and individuals to support response, recovery, and mitigation efforts following Presidential emergency or major disaster declarations.

Preliminary Damage Assessment

Upon submission of the request, FEMA coordinates with the state to conduct a Preliminary Damage Assessment (PDA) and determine if the incident is of sufficient severity to require federal assistance under the Stafford Act. This process could take a few days to a week depending on the magnitude of the incident. FEMA uses the results of the PDA to determine if the situation is beyond the combined capabilities of the state and local resources and to verify the need for supplemental federal assistance. The PDA also identifies any unmet needs that may require immediate attention. Similar to the IDE, the PDA may not be required if immediate response assistance is necessary.

Federal Analysis of the State's Request

The FEMA Administrator assesses the situation and the request and makes a recommendation to the President through the Department of Homeland Security on a course of action. The decision to approve the request is based on such factors as the amount and type of damage, the potential needs of the affected jurisdiction and the state, availability of state and local

government resources, the extent and type of insurance in effect, recent disaster history and the state's hazard mitigation history.

Federal Declarations without a Preliminary Damage Assessment

If the incident is so severe that the damage is overwhelming and immediately apparent, the President may declare a major disaster immediately without waiting for the PDA process described above.

Declaration of Emergency or Major Disaster

The President of the United States can declare an Emergency or Major Disaster under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 USC §5121 et seq.), thereby providing federal government resources to support the states' response and recovery activities. While Presidential Declarations under the Stafford Act release federal resources and funding to support response and recovery, federal agencies may also provide assistance under other authorities or agreements that do not require a Presidential Declaration.

3.7 Continuity of Government

A major disaster could result in the death or injury of key government officials, the partial or complete destruction of established seats of government, and loss of public and private records essential to the continued operations of both government and industry. To help preserve law and order and to continue and restore local services, it is essential that units of local governments continue to function during or following such situations. The California Government Code, the State Constitution and the California Emergency Services Act provide legal authority for the continuity and preservation of state and local government in the event incumbents are unable to serve. Within the context of this document, the concept of Continuity of Government is comprised of three elements: 1) Standby Officers for the Governing Body; 2) Alternate Seat of Government; and 3) Preservation of Vital Records. Since Orange County and its Board of Supervisors are responsible for the establishment and performance of the Operational Area, this section describes continuity considerations for the County. The County Executive Office Information Technology Division (CEO/IT) coordinates with county departments for continuity of operations and business continuity plans.

3.7.1 Alternate Facilities

The County and OA EOC facility meets the objectives required for managing a disaster response including meeting the requirements of the Americans with Disabilities Act. Also located in the facility is the Sheriff's Department Communications Division that maintains communications systems throughout the County and the Emergency Communications Bureau serves as the OC Sheriff's Department Dispatch Center.

The primary County EOC is located at 2644 Santiago Canyon Road, Silverado, CA 92676-9719. It is 14.8 ground miles from the County Civic Center located in Santa Ana.

The alternate EOC location has three options, the use of another local government EOC, such as a City EOC in Orange County, the use of a mobile command vehicle, or the Department Operations Center (DOC) of another local government agency. The Orange County and OA Alternate EOC Standard Operating Procedures includes more details.

3.7.2 Succession

Sections 8635 through 8644 of the California Government Code provide the following directives related to succession:

Orange County Line of Succession

In the event of vacancies during a Local Emergency, State of Emergency or a State of War Emergency, the Orange County Board of Supervisors will be reconstituted in accordance with the provisions of Government Code Sections 8635-8644. Section 3-1-4(a) of the Orange County Code designates the lines of succession for the Board of Supervisors. In the absence of the Chair of the Board of Supervisors, the Vice-Chair of the Board shall serve in the capacity as Chair. When both the Chair and Vice-Chair are absent, the next Supervisor, in ascending order of district number (commencing with the First Supervisorial District), shall serve in the capacity of the Chair of the Board. In the event the entire Board of Supervisors is unable to serve in their designated capacity, the full line of succession through County Departments shall be in accordance with Board of Supervisors' resolution 12-036, dated April 17, 2012.

3.8 County and OA EOC Organization and Responsibilities

This section describes the organization of the County and OA EOC and includes clear descriptions of each position role and responsibility, as well as the identification of those organizations and individuals responsible for staffing each position or serving as a successor or alternate.

The requirement to use SEMS, NIMS and ICS includes fulfilling the management and coordination role of local government, and providing for the five essential functions: Management, Operations, Planning and Intelligence, Logistics and Finance and Administration. In an emergency situation requiring activation of the EOC during an emergency requiring response by more than one agency (whether or not the EOC is activated), or in cases where a Local Emergency, State of Emergency, or State of War Emergency is proclaimed, the relationships described in this section will apply.

It is important to note that the organizational structure described in this section describes the County and Operational Area's ultimate capability and full staffing of all potential EOC

positions. The Incident Command System is flexible, modular by nature, it will be rare that every position and organizational element identified in this section will be active simultaneously. The incident will define which elements need to be staffed. In addition, it may be discovered that one element of the organization can manage the responsibilities of those elements under it. For example, the Finance and Administration Section Chief may be able to handle the responsibilities of the Claims and Compensation and Time and Cost Units. In that case, the supporting Units will not be staffed, but the Finance and Administration Section Chief will have responsibility for performing the functions of those Units, as necessary. If the organization is not fully expanded, then supervisory positions are responsible for performing the functions of the un-staffed Units, Groups, Branches, or Sections (as applicable) they oversee.

Note: Positions referenced under the *Assignment of Primary Responsibility* and *Position Successors* headings represent the individual position titles provided to each person by their department. Position titles (e.g., supervisor, leader, director, etc.) in those sections have no relation to ICS and no implications on the EOC organizational structure.

Figure 26 –County and Operational Area EOC Organization Chart

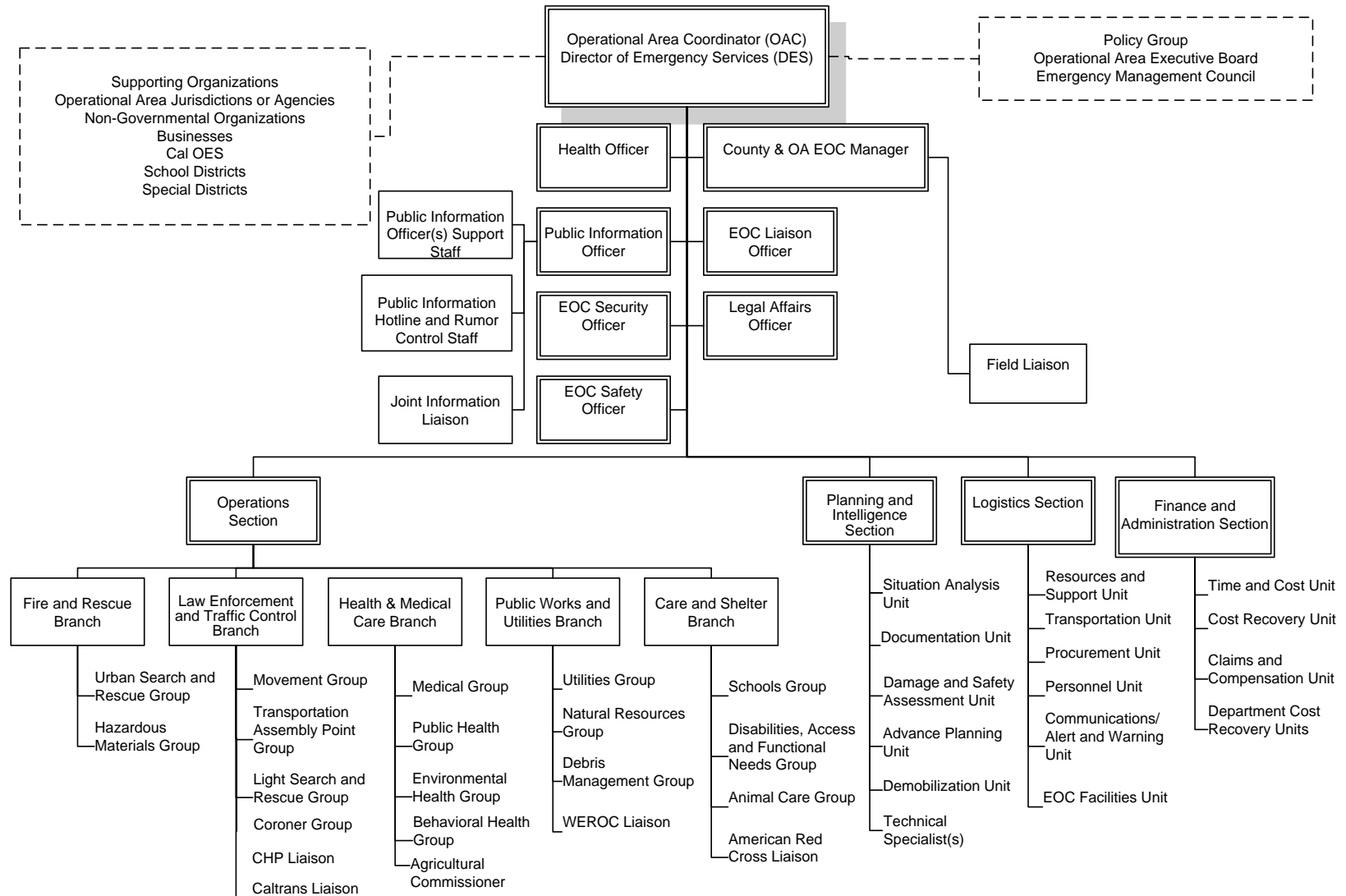


Figure 27 – Operational Area EOC Assignment of Responsibilities Matrix

C=Contingent Upon the Hazard for DES, OAC and Section Chief Staffing P=Primary Responsibility S=Support Responsibility	Management Section												
	DES and OAC	Policy Group	County and OA EOC Manager	County Field Liaison	Public Health Officer	EOC Liaison Officer	Legal Affairs Officer	Public Information Officer	Public Information Officers Support Staff	PIO Support-Social Media	Public Information Hotline & Rumor Control Support	EOC Safety Officer	EOC Security Officer
Assessor									S				
Auditor-Controller									S				
Board of Supervisors		P							S				
CEO	C	P						C	S	S		C	
Child Support Services									S				
Clerk of the Board									S				
Clerk/Recorder									S				
County Counsel							P		S				
Department of Education		P							S				
District Attorney									S				
Health Care Agency	C	P			P			C	S	S			
John Wayne Airport		P							S				
OC Community Resources		P							S				
OC Fire Authority	C	P						C	S	S			
OC Public Works	C	P						C	S	S			
OC Transportation Authority		P							S				
OC Waste & Recycling		P							S				
Probation		P							S				
Public Defender									S				
Registrar of Voters									S				
Sheriff/Emergency Management Division			P	P		P			S	P			
Sheriff-Coroner	C	P						C	S	S			P
Social Services Agency		P							S				
Superior Court of California, Orange County									S				
Treasurer/Tax-Collector									S				
American Red Cross									S	S			
WEROC									S				
COAD-OC									S				

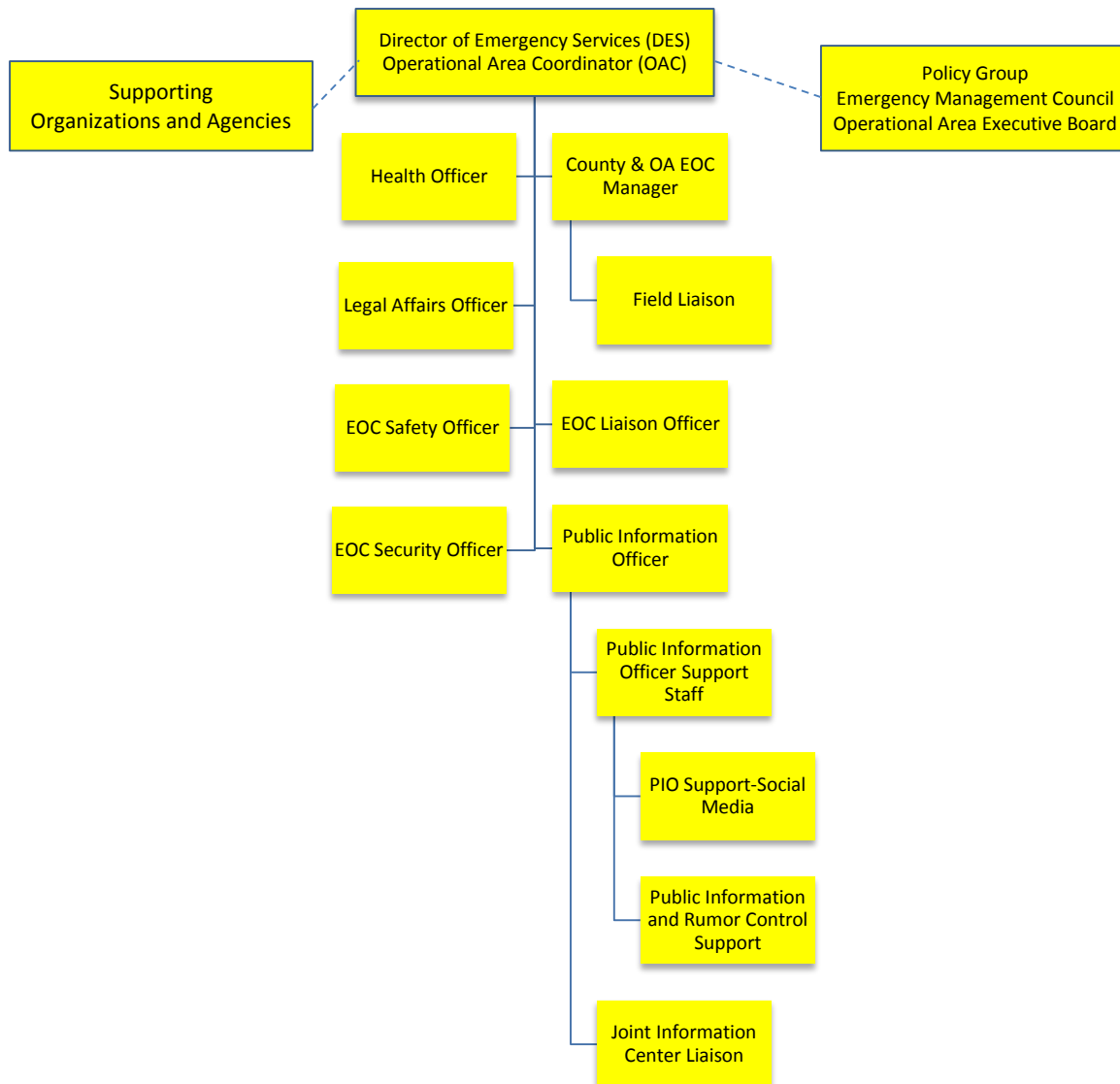
C=Contingent Upon the Hazard for DES, OAC and Section Chief Staffing P=Primary Responsibility S=Support Responsibility	Planning and Intelligence Section										Finance & Administration Section					
	Planning and Intelligence Chief	Situation Analysis Unit	Situation Analysis Support Staff (SASS)	SASS-GIS	SASS-Resource Status & Tracking	Documentation Unit (EOC and Offsite)	Messengers	Damage and Safety Assessment Unit	Demobilization Unit	Advanced Planning Unit	Finance and Administration Chief	Time and Cost Unit	Cost Recovery Unit	EOC Cost Recovery Group	Claims and Compensation Unit	Department Cost Recovery (offsite)
Assessor			S		S	S	S	S							S	P
Auditor-Controller			S		S	S	S	S				P	P		S	P
Board of Supervisors						S		S							S	P
CEO	C					S		S			P				P	P
Child Support Services			S		S	S	S	S							S	P
Clerk of the Board			S		S	S	S	S							S	P
Clerk/Recorder			S		S	S	S	S							S	P
County Counsel						S		S							S	P
Department of Education						S		S							S	P
District Attorney			S		S	S	S	S							S	P
Health Care Agency	C	C	S		S	S	S	S	C	C					S	P
John Wayne Airport						S		S							S	P
OC Community Resources			S		S	S	S	S							S	P
OC Fire Authority	C	C				S		S	C	C					S	P
OC Public Works	C	C	S	S	S	S	S	P	C	C					S	P
OC Transportation Authority						S		S							S	P
OC Waste & Recycling			S		S	S	S	S							S	P
Probation			S		S	S	S	S							S	P
Public Defender			S		S	S	S	S							S	P
Registrar of Voters			S		S	S	S	S							S	P
Sheriff/Emergency Management Division			S		S	S	S	S						P	S	P
Sheriff-Coroner	C	C	S	S	S	S	S	S	C	C					S	P
Social Services Agency			S		S	S	S	S							S	P
Superior Court of California, Orange County			S		S	S	S	S							S	P
Treasurer/Tax-Collector			S		S	S	S	S							S	P
American Red Cross		S				S		S							S	S
WEROC		S				S		S							S	S
COAD-OC		S				S		S							S	S

C=Contingent Upon the Hazard for DES and Section Chief Staffing S=Support Responsibility P=Primary Responsibility	Operations Section													
	WEROC Liaison	Natural Resources Group	Debris Management Group	Utilities Group	Public Works and Utilities Branch	Coroner Group	Transportation Assembly Point Group	Light Search and Rescue Group	Movement Group	Law Enforcement and Traffic Control Branch	Hazardous Materials Group	Urban Search and Rescue Group	Fire and Rescue Branch	Operations Chief
Assessor														
Auditor-Controller														
Board of Supervisors														
CEO														
Child Support Services														
Clerk of the Board														
Clerk/Recorder														
County Counsel														
Department of Education														
District Attorney														
Health Care Agency	C													
John Wayne Airport														
OC Community Resources			P											
OC Fire Authority	C	P	P	P										
OC Public Works	C									P	P	P	S	
OC Transportation Authority														
OC Waste & Recycling			S											
Probation														
Public Defender														
Registrar of Voters														
Sheriff/Emergency Management Division														
Sheriff-Coroner	C				P	P	P	P	P					
Social Services Agency														
Superior Court of California, Orange County														
Treasurer/Tax-Collector														
American Red Cross														
WEROC														P
COAD-OC														

C=Contingent Upon the Hazard for DES and Section Chief Staffing S=Support Responsibility P=Primary Responsibility	Operations Section (continued)									
	Medical and Health Care Branch	Medical Group	Public Health Group	Environmental Health Group	Behavioral Health	Agricultural Commissioner	Care and Shelter Branch	Schools Group	Animal Care Group	Disabilities and Access and Functional Needs Group
Assessor										
Auditor-Controller										
Board of Supervisors										
CEO										
Child Support Services										
Clerk of the Board										
Clerk/Recorder										
County Counsel										
Department of Education								P		
District Attorney										
Health Care Agency	P	P	P	P	P					
John Wayne Airport										
OC Community Resources									P	P
OC Fire Authority										
OC Public Works						P				
OC Transportation Authority										
OC Waste & Recycling										
Probation										
Public Defender										
Registrar of Voters										
Sheriff/Emergency Management Division										
Sheriff-Coroner										
Social Services Agency							P			P
Superior Court of California, Orange County										
Treasurer/Tax-Collector										
American Red Cross										P
WEROC						P				
COAD-OC										S

C=Contingent Upon the Hazard for DES and Section Chief Staffing S=Support Responsibility P=Primary Responsibility	Logistics Section										
	EOC Facilities Unit	Communications/Alert and Warning Unit	Volunteer Coordination Group	COAD-OC Liaison	EOC Registration	Personnel Unit	Transportation Group	Transportation Unit	Procurement Unit	Resources and Support Unit	Logistics Chief
Assessor											
Auditor-Controller											
Board of Supervisors											
CEO	S								P	P	P
Child Support Services											
Clerk of the Board											
Clerk/Recorder											
County Counsel											
Department of Education											
District Attorney											
Health Care Agency											
John Wayne Airport											
OC Community Resources											
OC Fire Authority											
OC Public Works							P				
OC Transportation Authority					P						
OC Waste & Recycling											
Probation											
Public Defender											
Registrar of Voters											
Sheriff/Emergency Management Division	S		P		P						
Sheriff-Coroner	P	P			S						
Social Services Agency											
Superior Court of California, Orange County											
Treasurer/Tax-Collector											
American Red Cross			S								
WEROC											
COAD-OC			S	P							

3.8.1 Management Section



In the County and OA EOC, the management staff consists of the Director of Emergency Services (DES) and/or an Operational Area Coordinator (OAC), the Policy Group, Legal Affairs Officer, Public Information Officer, Health Officer, County and OA EOC Manager and other supporting management staff positions. The management staff element is provided through staff positions and groups that are specifically designated, report directly to the DES and/or OAC, and are assigned responsibility for key activities within the County and OA.

3.8.1.1 Director of Emergency Services (DES) and Operational Area Coordinator (OAC)

Table 3-DES and OAC Designation

Hazard	DES	OAC	Hazard	DES	OAC
Act of war	OC Sheriff	OC Sheriff	Flood	County Executive Officer	OC Public Works
Aviation incident	OC Fire Authority	OC Fire Authority	Hazardous materials	OC Fire Authority	OC Fire Authority
Civil disturbance	OC Sheriff	OC Sheriff	Oil spill	County Executive Officer	OC Public Works
Dam and reservoir failure	County Executive Officer	OC Public Works	Mass care and shelter	County Executive Officer	Social Services Agency
Disaster recovery	County Executive Officer	County Executive Officer	Mass casualty	OC Fire Authority	OC Fire Authority
Debris flow/landslide	County Executive Officer	OC Public Works	Mass evacuation	OC Sheriff	OC Sheriff
Drought	County Executive Officer	County Executive Officer	Rail incident	OC Fire Authority	OC Fire Authority
Earthquake	OC Sheriff	OC Sheriff	San Onofre Nuclear Generating Station (SONGS)	OC Sheriff	OC Sheriff
Energy crisis and power outages	OC Sheriff	OC Sheriff	Severe weather (storms/high winds)	County Executive Officer	OC Public Works
Epidemic or Disease outbreak	County Executive Officer	OC Health Care Agency	Terrorism	OC Sheriff	OC Sheriff
Excessive Heat	County Executive Officer	OC Health Care Agency	Threat to animals and/or livestock	County Executive Officer	OC Health Care Agency
Fire (urban and wildland)	OC Fire Authority	OC Fire Authority	Tsunami	OC Sheriff	OC Sheriff

Director of Emergency Services (DES)

Per County of Orange Board of Supervisors Resolution, the designated DES will direct the county's emergency organization during times of an emergency, which impact the unincorporated areas of the county.

Powers and duties of the DES:

- Direction and control: Serve as a key decision maker in the county's emergency organization providing direction and control.
- County representative: Represent the County in all dealings with the public or private agencies on matters pertaining to emergencies.
- Appoint a Public Information Officer to coordinate the dissemination of all emergency information, press releases, and public statements, to prevent conflicting information, misinformation, and the initiation of rumors, as appropriate to the type of emergency confronting the County of Orange.
- Briefs the County Board of Supervisors and elected officials or their representatives on the status of the emergency.

Operational Area Coordinator (OAC)

Per the Orange County Operational Area Agreement, when the emergency impacts Operational Area (OA) jurisdictions the designated OAC is responsible for ensuring direction, coordination and communication of policy decisions, resource needs and priorities between OA jurisdictions and the State throughout the emergency.

Powers and duties of the OAC:

- Direction and Coordination: Serve as key decision maker, in the County and OA Emergency Operations Center providing direction and coordination necessary to accomplish the purposes of the Operational Area Agreement and responsibilities of the Operational Area Lead as specified in Title 19 California Code of Regulations Section 2409 (e).
- Operational Area Representative: Represent the Operational Area in all dealings with the public or private agencies on matters pertaining to emergencies.
- Emergency Public Information: Appoint a Public Information Officer to coordinate the dissemination of all emergency information, press releases, and public statements, to prevent conflicting information, misinformation, and the initiation of rumors, as appropriate to the type of emergency confronting the Operational Area.
- Emergency Proclamations: Each OA jurisdiction shall retain the powers and responsibilities granted by law to proclaim an emergency in its jurisdiction, according to procedures set forth by the jurisdiction. The County Board of Supervisors shall retain the powers and responsibilities granted by law to proclaim an emergency in the County geographic area, according to procedures set forth in County Ordinance No. 3915 Section 3-1-6 of the Codified Ordinances of the County of Orange and County Board of Supervisors Resolution.

DES and OAC as a Unified Command

When an emergency occurs in one or more OA jurisdictions and the unincorporated areas of the county, the designated DES and designated OAC, shall establish a unified command to

collaborate and share responsibility in the coordination of resources and communication at the County and OA EOC.

Responsibilities of the Director of Emergency Services and Operational Area Coordinator

- Authorizes the activation of the County and OA EOC.
- Serve as the key decision-maker in the County and OA EOC by providing the direction and coordination necessary to accomplish the objectives specified in the County Code of Ordinances and the OA Agreement and the responsibilities assigned to the OA Lead as specified in Title 19 California Code of Regulations Section 2409.
- Requests that the County Board of Supervisors proclaim the existence or threatened existence of a Local Emergency in the County if necessary.
- Establishes the appropriate level of organization and staffing necessary to support operations and continuously monitor the effectiveness of that organization.
- Appoints a Public Information Officer (PIO) to coordinate the dissemination of all emergency information.
- Approves all press releases.
- Designates Operation Section Chief and Planning and Intelligence Section Chief.
- Ensures that multi-agency and inter-agency coordination is accomplished effectively within the EOC.
- In conjunction with the Policy Group, Section Chiefs, sets priorities for emergency response efforts and ensures all organizational action are accomplished as established.
- Maintains information on the status of resources, services, and operations.
- Ensures collection of, evaluation, and dissemination of damage assessments and other essential information.
- Provides status and other reports to Cal OES.
- Represents the County and/or OA in all dealings with public or private agencies on matters pertaining to emergencies.
- With assistance provided by the EOC staff:
 - Utilizes and operates communications and warning systems currently available to the County and Operational Area EOC.
 - Provides information, instructions and guidance to the public.
 - Ensures whole community response planning is being implemented.
 - Maintains information on the status of resources, services and operations.
 - Ensures the collection, evaluation and dissemination of damage assessment and other essential information.

- Provides status and other situational report to County departments, Cal OES and Operational Area jurisdictions.

Alternates to the DES and/or OAC

Each incumbent of a position designated to act as the DES and OAC shall annually designate, in writing by name and in order of succession, a minimum of three alternates. In the event that neither the designated DES and/or OAC nor either of the designated alternates is available to serve in the capacity of DES and/or OAC, the following lines of succession shall be used to ensure continuity of County and/or Operational Area operations during times of emergency:

- DES and OAC: Sheriff-Coroner and a minimum of three designated alternates
- DES and OAC: Director, Orange County Fire Authority and a minimum of three designated alternates
- DES: County Executive Officer and a minimum of three alternates
- OAC: Public Works Mutual Aid Coordinator and a minimum of three designated alternates.
- OAC: Health and Medical Mutual Aid Coordinator and a minimum of three designated alternates.

DES and/or OAC responsibilities may be transferred each time a representative with assigned or designated authority arrives or at the discretion of the Policy Group. Due to the changing circumstances and requirements of emergencies, especially in transition from the response to and recovery from an emergency, the Policy Group may appoint successor DES and/or OAC (s) to succeed the previous DES and/or OAC.

3.8.1.2 Policy Group

Assignment of Primary Responsibility

The Policy Group consists of representatives of organizations with direct (functional) emergency response responsibilities. Their function is to establish response policies for the County and OA and to establish priorities for the allocation of resources. The Policy Group is composed of the following members:

County of Orange Emergency Management Council

- A member of the Orange County Board of Supervisors
- A representative from the County Executive Office
- A representative from Orange County Health Care Agency
- A representative from John Wayne Airport
- A representative from OC Community Resources
- A representative from OC Public Works
- A representative from OC Waste and Recycling
- A representative from Orange County Fire Authority
- A representative from Orange County Transportation Authority

- A representative from Probation Department
- A representative from Sheriff-Coroner Department
- A representative from Social Services Agency
- Other representatives as determined by the DES and OAC depending upon the situation/event and the involvement of other organizations

The Policy Group may also be expanded to include key representatives from the OA Executive Board.

Orange County Operational Area Executive Board

- A member of the Orange County Board of Supervisors
- A representative from the Orange County City Engineers' and Public Works Directors Association
- The Orange County Fire and Rescue Mutual Aid Coordinator
- A representative from the Orange County Fire Chiefs' Association
- The Orange County Sheriff-Coroner Law Enforcement Mutual Aid Coordinator
- A representative from Independent Special Districts of Orange County
- A representative from the Orange County Health Care Agency Health Care Mutual Aid Coordinator
- A representative from the Orange County Police Chiefs' and Sheriff Association
- A representative selected jointly from the Orange County City Manager's Association and the League of Cities
- A representative selected jointly from the Orange County Superintendent of Schools, Community Colleges and School Districts
- A representative from the OC Public Works Public Works Mutual Aid Coordinator

Responsibilities of the Policy Group

- Establishes basic policies which govern the manner and means in which the County and OA will respond to an actual and/or perceived disaster.
- Provides support to the DES and OAC.
- Acts as an advisor and furnishes the DES and OAC with critical data to view the incident from different perspectives.
- Assists in making executive decisions based on policies of the Board of Supervisors.
- Assists the DES and/or OAC in the development of rules, regulations, proclamations, and orders.
- Convenes multi/interagency coordination groups as appropriate.
- County Board of Supervisor representatives may assist by providing a political liaison for the County and OA, especially where issues of resource prioritization and usage are involved.

Position Alternates and Successors

Organizations with assigned positions on the Policy Group are responsible for developing protocols for position succession within their organizations.

3.8.1.3 County and Operational Area EOC Manager

Assignment of Primary Responsibility

The Orange County Sheriff's Department, Emergency Management Division Director serves as the County and Operational Area Emergency Manager. The County and OA Emergency Manager is the 24 hour point of contact for the County, Operational Area, State, Federal entities and agencies, and Mutual Aid Coordinators. The County and OA Emergency Manager ensures the physical readiness, set-up and coordinates with the DES and OAC for the activation and staffing levels of the County and OA EOC. The County and OA Emergency Manager develops and maintains all plans and procedures pertaining to emergency response and recovery involving the County and OA EOC. Upon activation of the County and OA EOC, the County and OA Emergency Manager becomes the County and OA EOC Manager.

Responsibility of the County and OA EOC Manager

- Ensures physical set-up for and staffing of support staff in the County and OA EOC.
- Serves as the 24-hour contact for the County and OA, including that for the State, OA jurisdictions, and Mutual Aid Coordinators.
- Acts as advisor to the DES and OAC, Policy Group, Management, and General Staff regarding emergency management issues, legislation, and previous (historical) actions.
- Develops and maintains all plans and procedures pertaining to emergency response and recovery involving the County and OA.
- Handles requests from other agencies for sending liaison personnel to other EOCs.
- Oversees and coordinates with County and OA Field Liaisons deployed amongst OA jurisdictions.
- Directs and coordinates EOC support staff and EOC personnel.

Position Alternates and Successors

The Orange County Sheriff's Department, Emergency Management Division has protocols in place for the position of the County and OA EOC Manager succession.

3.8.1.4 Legal Affairs Officer

Assignment of Primary Responsibilities

County of Orange, County Counsel

Responsibilities

- Advises the DES and OAC, Board of Supervisors, and the Policy Group on legal implications of emergency actions.

- Drafts local emergency proclamations.
- Drafts requests for a Governor's Proclamation of a State of Emergency.
- Advises on legal implications prior to and during response and recovery operations.
- Maintains advice given by Legal Affairs Officer with respect to the incident.
- Commences legal proceedings as needed.

Position Alternates and Successors

The successors to the Legal Affairs Officer will be designated by County Counsel. County Counsel is responsible for developing protocols for position succession within their organization.

3.8.1.5 Field Liaison

Assignment of Primary Responsibility

Orange County Sheriff's Department, Emergency Management Division, Senior Emergency Management Program Coordinator

Responsibilities

- Provides and relays information between County departments, OA Jurisdictions and Incident Command Post (ICP) and the County and OA EOC in relation to policy matters, priorities, and jurisdiction-specific information.
- Communicates the status of activities at the assigned location to the County and OA EOC.
- Monitors activities at the assigned location for potential conflicts of strategy or information, discrepancies, or other concerns.

3.8.1.6 Public Information Officer

Assignment of Primary Responsibility

Since the DES and OAC is determined by the type of incident, the Public Information Officer will also be determined by the type of incident and designated by the DES.

Responsibilities

- Establishes contact and coordinates with the Field PIO, affected OA jurisdiction PIOs, Cal OES and other jurisdictions.
- Evaluates the incident and public information immediate needs, including EOC PIO support.
- Evaluates and determines activation of the Joint Information Center (JIC), structure and personnel needs.
- Leads the operation of the Joint Information System (JIS) and JIC, maintains contact in order to coordinate information gathering and dissemination.
- Develops, coordinates and distributes emergency public information and warnings to the public, media in a timely manner.
- Ensures all public information releases are distributed to 2-1-1 Orange County.
- Establishes with the DES and OAC if there are any limits on information release.

- Obtains approval for media releases and public messaging from DES and OAC.
- Establishes contact with pre-identified community partners which serve the non-English speaking, and people with disabilities and those with access and/or functional needs to allow them to initiate their communications protocols.
- Establishes contact with the media and begins releasing lifesaving and health preservation instructions.
- Provides information on what is being done to respond to the emergency.
- In accordance with the JIS Annex, develops and distributes strategies and protocols for interviews, briefings and photo opportunities, including considerations for people with disabilities and those with access and/or functional needs.
- Monitors media reporting for accuracy.
- Monitor and respond to approved social media sites and accounts.
- Responds to media inquiries.
- Ensures all EOC staff is kept apprised of public information releases.
- Serves as the arbitrator on all public information related issues when conflicts or discrepancies arise.
- Analyzes other sources of emergency information.
- Coordinates dignitary services for observers, visitors, dignitaries, and experts not involved in assisting in the emergency response (e.g., tours of damaged areas, County and OA EOC briefings, meetings with decision makers and functional coordinators, etc.).
- Coordinates with the Logistics Section for logistical issues regarding dignitary services.
- Coordinates with the Law Enforcement and Traffic Control Branch and the Health Care Branch regarding security, and health and safety issues for dignitaries.
- Coordinates with the DES and OAC and Policy Group regarding dignitary protocols.
- Coordinates the interaction of dignitaries with the media in accordance with the overall public information strategy and protocols.

Position Alternates and Successors

The successors to the Public Information Officer will be designated by the department with primary responsibility for serving as DES and OAC during the emergency. If the lead agency or department is unable to staff the position, that responsibility will fall to a trained individual within one of the other DES and OAC-eligible departments (Orange County Sheriff's Department, Orange County Fire Authority, OC Public Works, or Health Care Agency).

3.8.1.7 Public Information Officer (PIO) Support

Assignment of Primary Responsibility

The Public Information Officer(s) Support Staff will be requested from County departments and OA jurisdictions that are least affected to support the PIO at the County and OA EOC and JIC, as needed. In addition, PIOs from affected external organizations may be integrated as Support PIOs into the OA's JIC during emergencies. For example, PIOs from major businesses or non-

governmental agencies affected by the incident may be asked to participate in the OA JIC at this level. The Support PIOs may share many of the same responsibilities as the PIO as assigned.

Responsibilities

- Coordinates and disseminates all information to the public for County and OA EOC operations.
- Supervises the Public Information Hotline and Rumor Control Supervisor and support staff at the County and OA EOC.
- Provides the media and public with the County and OA official information being released.
- Ensures the PIO, DES and OAC, members of the Policy Group, and County and OA EOC staff are kept apprised of emergency public information issues concerning the emergency.
- Coordinates the drafting, approval and dissemination of Emergency Alert System (EAS) messages and official press releases for the Orange County.
- Obtains approval for media releases and messaging from PIO.
- Ensures dissemination on all EAS messages, press releases and AlertOC notifications with the Communications/Alert and Warning Unit Leader.
- Maintains contact with the County departments, OA jurisdictions, Department Operation Centers (DOCs), Incident Command Post (ICP) and Joint Information Center (JIC) in order to coordinate information gathering and dissemination.
- Establishes contact with pre-identified community partners which serve the non-English speaking, and people with disabilities and those with access and/or functional needs to allow them to initiate their communications protocols.
- Establishes contact with media, and begins releasing lifesaving and health preservation instructions.
- In accordance with this JIS Annex, develops and implements a public information plan for media releases, development of briefings, dignitary coordination and coordination of public information with County departments, OA jurisdictions, ICP, and people with disabilities and those with access and/or functional needs.
- Uses fax, internet or EOC-to-EOC radio to coordinate and communicate public information with the County departments and OA jurisdictions.
- Analyzes other sources of emergency information.
- Responds to media inquiries.
- Monitor and respond to approved social media sites and accounts.
- Ensures all public information releases are distributed to 2-1-1 Orange County.
- Ensures Public Information Hotline and Rumor Control staff are tracking rumors and trends.
- Ensures Public Information Hotline and Rumor Control Supervisor tracks calls received and provide reports on a regular basis.

3.8.1.8 Public Information Officer Support-Social Media

Assignment of Primary Responsibility

The Public Information Officer(s) Support – Social Media will be requested from County departments and OA jurisdictions that are least affected to support the PIO at the County and OA EOC and JIC, as needed. The PIO Support-Social Media is assigned by the Public Information

Officer, this position should be knowledgeable of web site design software, Internet protocols, social media policies, web site accessibility (Section 508 of the Rehabilitation Act of 1973).

Responsibilities

- Monitor and respond to approved social media sites and accounts.
- Maintain and update incident website and incident social media accounts:
 - Twitter: @OrangeCountyEOC.
 - Facebook: Orange County, California-Emergency Operations Center.
 - Other County websites and social media accounts, as directed.
- Maintain an incident blog, if applicable.
- Ensure approval of all items prior to posting on incident website.
- Ensure all items posted to the incident website are Section 508 compliant.
- Coordinate with web support personnel for all agencies represented, to ensure website meets individual agency requirements.
- Coordinate media and community distribution lists.
- Determine newspaper, radio, television and internet outlets to monitor.
- Monitor blogs and social networking sites.
- Gather perceptions from the media, public and other stakeholders about the progress of the response efforts.
- Identify potential detrimental rumors and provide the PIO with effective ways to deal with them.
- Monitor media for use of text crawls and sign language interpreters, social networking sites.

3.8.1.9 Public Information Hotline and Rumor Control Supervisor

Assignment of Primary Responsibility

The Public Information Hotline Supervisor will be an employee from Orange County Sheriff's Department, Emergency Communications Bureau, Radio Dispatcher, if available. When this option is not available, it will be staffed by a County employee or OA jurisdiction with past training and experience.

Responsibilities

- Ensures all information disseminated to the public is authorized for release by the PIO or PIO support staff.
- Serves as the liaison between the hotline staff, PIO Support Staff and PIO.
- Coordinates with the Orange County 2-1-1 services to ensure the objectives, messages, and approach for hotline and rumor control management are the same and integrated amongst both entities.
- Monitors media reporting for accuracy; reports any discrepancies to PIO.
- Tracks calls received and provide the PIO with hourly statistical reports.
- Tracks rumors and trends received three times or more by hotline staff. Information is then provided to the PIO.

3.8.1.10 Public Information Hotline and Rumor Control Support Staff

Assignment of Primary Responsibility

The Public Information Hotline and Rumor Control Support Staff will be identified and assigned at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the Public Information Hotline and Rumor Control will be provided by County departments and OA jurisdictions.

Responsibilities

- Serves as an appropriate alternative to the emergency 9-1-1 system for non-life-threatening circumstances and redirects emergency calls that come to the hotline.
- Provides information to the public related to the emergency including, but not limited to:
 - Evacuation routes
 - Shelter locations
 - Transportation logistics
 - Protective actions to follow
 - People with disabilities and those with access and/or functional needs information
 - Road closures or impairments
 - Geographical boundaries of known disaster areas
 - General safety and disaster information
 - Referral and telephone numbers of agencies that can provide additional public assistance
- Receives emergency calls or inquiries, collects information, and forwards information to the appropriate Branch or Unit to handle.
- Tracks the number of calls received and what type of call.
- Identifies and tracks common questions and rumor trends heard from callers.
- Clarifies rumors and inaccuracies presented by callers.
- Directs calls from the media to the PIO Support Staff and/or PIO.

3.8.1.11 Health Officer

Assignment of Primary Responsibilities

The Health Officer must be a physician employed by Orange County Health Care Agency who has been appropriately deputized.

Responsibilities

- Determines and initiates appropriate public health-related protective actions upon recommendation from County departments, OA jurisdictions, California Department of Public Health (CDPH) and or other criteria.
- Directs programs deemed necessary for public and emergency worker health and safety in consultation with Cal OES and appropriate state and federal agencies.

- Coordinates with the OA jurisdictions, OC Public Works, Water Emergency Response of Orange County (WEROC) and HCA regarding the protection, purification, and distribution of potable water and consumable food.
- Proclaims a Health Emergency, if necessary, in the event of a health emergency in the County and/or OA.

3.8.1.12 EOC Liaison Officer

Assignment of Primary Responsibility

Orange County Sheriff’s Department, Emergency Management Division, Senior Emergency Management Program Coordinator.

Responsibilities

Acts as a point of contact for the following types of agencies and external organizations:

Cities	OC Health Care Agency
American Red Cross	Businesses
Operational Area(s)	Cal OES
Non-Governmental Organizations/COAD-OC	
FEMA	School Districts
Others	

- Establishes and maintains contact with impacted jurisdictions.
- Functions as a central point of contact for incoming agency representatives, provides workspace, and arranges for support as necessary.
- Ensures all developed guidelines, directives, EOC Incident Action Plans, and appropriate situation information is disseminated to agency or external representatives.
- Coordinates with Planning and Intelligence, Situation Analysis Unit on any information received from external agencies.
- Works with the EOC Sections to ensure up-to-date information is posted to WebEOC® and other information sharing boards or systems.

Position Alternates and Successors

First Alternate: Agency Representative from non-impacted jurisdiction in Orange County.

3.8.1.13 EOC Safety Officer

Assignment of Primary Responsibility

CEO, Office of Risk Management

Responsibilities

- Ensures all EOC personnel follow and demonstrate appropriate safety precautions during an emergency.

- Ensures all facilities used in support of EOC operations have healthy and safe operating conditions and meet the Americans with Disabilities Act (ADA) requirements.
- Reviews the EOC Incident Action Plan for safety implications and provides safety messages to the Planning and Intelligence Section for inclusion in the EOC Incident Action Plan.
- Exercises emergency authority to stop any activity deemed unsafe or to prevent unsafe acts.
- Develops on-site safety plans.
- Identifies and mitigates safety hazards and situations of potential County liability within the EOC.
- Investigates accidents that have occurred within the EOC sites or facilities supporting EOC operations.

Position Alternates and Successors

The successors to the EOC Safety Officer will be designated by the Office of Risk Management. Office of Risk Management is responsible for developing protocols for position succession within their organizations.

3.8.1.14 EOC Security Officer

Assignment of Primary Responsibilities

Orange County Sheriff's Department, Sergeant or Deputy Sheriff II

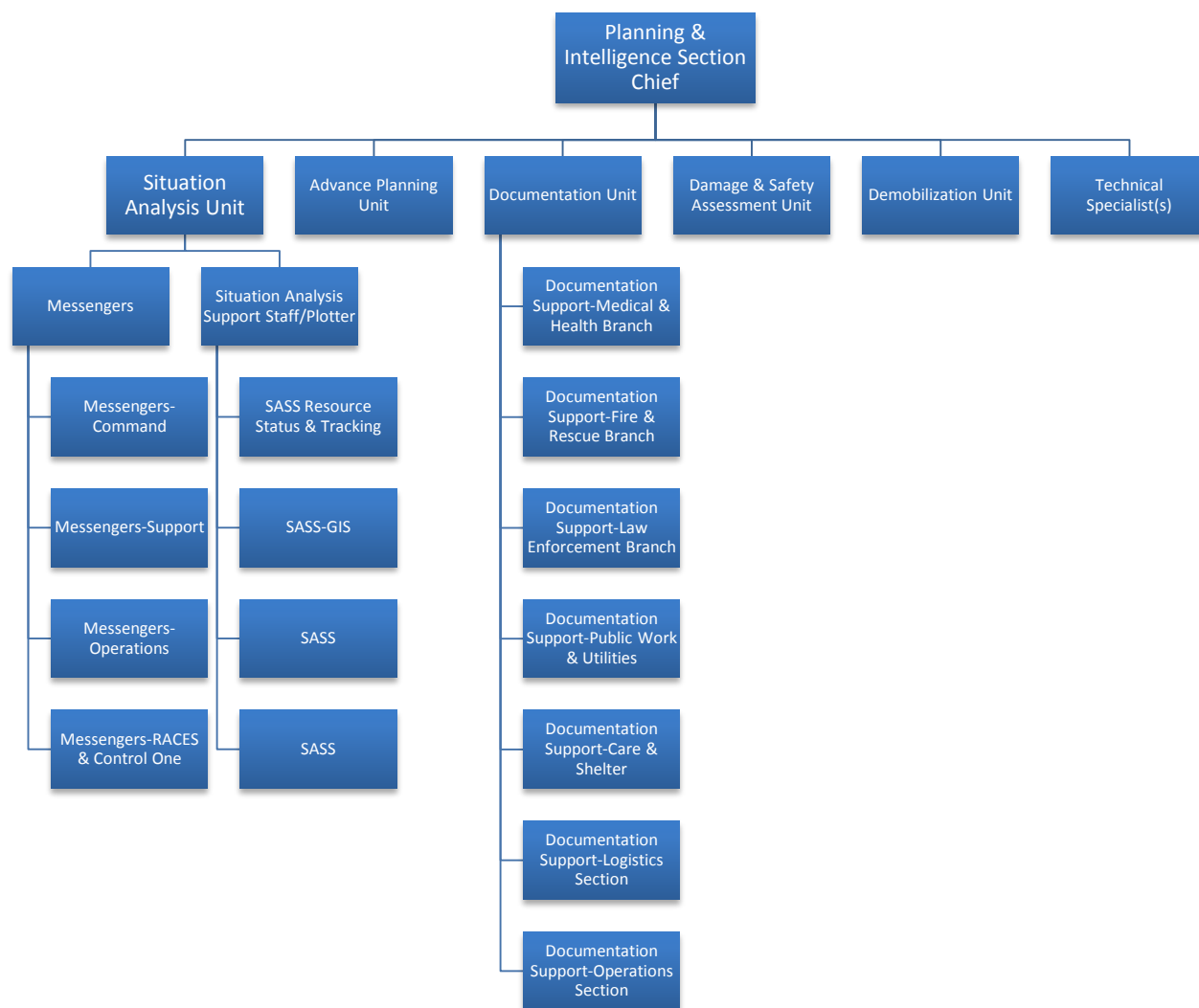
Responsibilities

- Provides twenty-four hour security for EOC facilities.
- Controls personnel access to facilities in accordance with policies established by the DES and OAC or County and Operational Area EOC Manager.
- Provides advice and guidance to the DES and OAC on EOC security matters.
- Coordinates with the EOC Facility Unit to ensure parking and vehicle access is conducive to EOC operations.

Position Alternates and Successors

The successors to the EOC Security Officer will be designated by the Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organizations.

3.8.2 Planning and Intelligence Section



The Planning and Intelligence Section is responsible for collecting, evaluating, and disseminating situational information pertaining to the incident. This section maintains information and intelligence on the current and forecasted situations, gathers and disseminates information and intelligence critical to the incident. In addition, personnel prepare and develop the EOC Action Plans (EAP), situational status reports and incident maps. This Section is headed by a Planning and Intelligence Section Chief and is divided into several smaller units, depending upon the needs of the incident. Situation Analysis, Documentation, and Damage Assessment are examples of the kinds of units that may be formed within this section. Technical Specialists in this section help ensure real time information is factored into strategy development and if necessary, pass warnings to County departments and agencies, jurisdictions and organizations,

within the OA. The Planning and Intelligence staff positions and units pre-identified for the County EOC are:

- Planning and Intelligence Section Chief
- Situational Analysis Unit Leader
 - Situation Analysis Unit Assistant(s)
 - Situation Analysis Support Staff Supervisor
 - Situation Analysis Support Staff/Plotter
 - Situation Analysis Support Staff-GIS
 - Messenger Supervisor
 - Messengers
- Documentation Unit Leader
 - Documentation Support Staff-Operations Section
 - Documentation Support Staff-Public Works and Utilities Branch
 - Documentation Support Staff-Medical and Health Care Branch
 - Documentation Support Staff-Fire and Rescue Branch
 - Documentation Support Staff-Law Enforcement and Traffic Control Branch
 - Documentation Support Staff-Care and Shelter Branch
 - Documentation Support Staff-Logistics Section
- Advance Planning Unit Leader
- Damage and Safety Assessment Unit Leader
- Demobilization Unit Leader
- Technical Specialist(s)

3.8.2.1 Planning and Intelligence Section Chief

Assignment of Primary Responsibility

The EOC Planning and Intelligence Section Chief should be from the same discipline and agency as the DES or OAC. The Planning and Intelligence Section Chief will be determined by the type of incident.

Responsibilities

- Ensures the Planning and Intelligence function is performed consistent with SEMS and NIMS guidelines, including:
 - Collecting, analyzing all data regarding the status and operations of the Operational Area.
 - Preparing periodic situation reports.
 - Initiating and documenting the EOC's Action Plan and After-Action Report.
 - Advance planning for future operational periods and recovery operations.
 - Planning for demobilization.
- Provides Geographic Information Services (GIS) and other technical support services to the various organizational elements within the EOC.

- Establishes the appropriate level of organization within the Section, and continuously monitors the effectiveness of that organization.
- Coordinates with counterpart Planning and Intelligence Section Chief and active OA EOCs to ensure the OA priorities and strategies comply with County and OA needs.
- Reports to the DES and OAC on all matters pertaining to Section activities.
- Tracks the incident and provides information to the DES and OAC, Policy Group on the overall effectiveness of the policies established.
- Briefs the EOC and response agencies on the situation and status of the incident and resources.
- Collects and maintains event documents for all activities and a master log of events.
- Collects and reports damage assessment information.
- Coordinates directly with Section Chiefs in the EOC on the ICP to gather situational and operational status of the incident.
- Facilitates meetings with the other section chiefs and key EOC positions in accordance with the Planning "P."
- Provides briefings to general staff as well as situation information from management meetings.
- Oversees the activation of appropriate Technical Specialists for the response.

Position Alternates and Successors

The successors to the Planning and Intelligence Section Chief will be designated by the department that has primary responsibility for serving as the DES or OAC during the emergency situation underway. Organizations assigned with this position are responsible for developing protocols for position succession within their organization.

3.8.2.2 Situation Analysis Unit Leader

Assignment of Primary Responsibility

The DES or OAC and Situation Analysis Unit leader should be from the same discipline agency. Since the DES and OAC is determined by the type of incident, the Situation Analysis Unit Leader will also be determined by the type of incident.

Responsibilities

- Directs the collection, collation, organization and display of incident situational information.
- Monitors and assesses situation and operational information.
- Ensures situational awareness and a common operating picture is maintained amongst all EOC stakeholders.
- Evaluates information and assists in the development of EOC Action Plans.
- Notifies the Planning and Intelligence Section Chief of important information, unusual events, information discrepancies, etc. that need to be brought to the attention of the DES and OAC, County and OA EOC Manager, and Policy Group and Section Chiefs.

- Coordinates closely with counterpart Situation Analysis Units or Planning and Intelligence Sections within the County and OA to ensure the collection of information for a complete and accurate common operational picture.
- Coordinates information for use in the Preliminary Damage Assessment (PDA).
- Maintains charts, display boards, and records of situation information, coordinates the information to be displayed or plotted, such as:
 - Personnel status information.
 - Relevant maps.
 - Records of situation information.
 - Current location and status of incidents and resources.
- Coordinates the relevant event incident situational and status information in WebEOC®.
- Coordinates the situational and status information into Cal OES web portal CalEOC.
- Prepares situation summaries and meeting minutes from briefings.
- Prepares maps and gathers and disseminates information and intelligence for use in the EAP.
- Supervises Situation Analysis Support Staff/Plotter and GIS personnel responsible for displaying information in the Command, Operations and Support Center within the County and OA EOC.
- Maintains a master list of all resources committed to incident operations.
- Identifies resources needs from information received from others to meet short-term needs.
- Determines actions that may be necessary to access resources not immediately available.
- Identifies emerging trends and anticipates emerging needs.

Position Alternates and Successors

The successors to the Situation Analysis Unit Leader will be designated by the department with primary responsibility for serving as the DES and OAC during the emergency situation underway. Organizations assigned with this position are responsible for developing protocols for positions succession within their organization.

3.8.2.3 Situation Analysis Unit Assistant(s)

Assignment of Primary Responsibility

The DES or OAC and Situation Analysis Unit Assistant will be from the same discipline agency. Since the DES and OAC is determined by the type of incident, the Situation Analysis Unit Assistant will also be determined by the type of incident.

Responsibilities

- Supports the collection, collation, organization and display of incident situational information.
- Monitors and assesses situation and operational information.
- Ensures situational awareness and a common operating picture is maintained amongst all EOC stakeholders.

- Evaluates information and assists in the development of EOC Action Plans.
- Notifies the Situation Analysis Unit Leader of important information, unusual events, information discrepancies, etc. that need to be brought to the attention of the Planning and Intelligence Section Chief, DES and OAC, County and OA EOC Manager, and Policy Group and Section Chiefs.
- Coordinates closely with counterpart Situation Analysis Units or Planning and Intelligence Sections within the County and OA to ensure the collection of information for a complete and accurate common operational picture.
- Coordinates information for use in the Preliminary Damage Assessment (PDA).
- Maintains charts, display boards, and records of situation information, coordinates the information to be displayed or plotted, such as:
 - Personnel status information.
 - Relevant maps.
 - Records of situation information.
 - Current location and status of incidents and resources.
- Coordinates the relevant event incident situational and status information in WebEOC®.
- Coordinates the situational and status information into Cal OES web portal CalEOC.
- Prepares situation summaries and meeting minutes from briefings.
- Prepares maps and gathers and disseminates information and intelligence for use in the EOC IAP.
- Maintains a master list of all resources committed to incident operations.
- Identifies resources needs from information received from others to meet short-term needs.
- Determines actions that may be necessary to access resources not immediately available.
- Identifies emerging trends and anticipates emerging needs.

Position Alternates and Successors

The successors to the Situation Analysis Unit Assistant will be designated by the department with primary responsibility for serving as the DES and OAC during the emergency situation underway. Organizations assigned with this position are responsible for developing protocols for positions succession within their organization.

3.8.2.4 Situation Analysis Support Staff (SASS)/Plotter Supervisor

Assignment of Primary Responsibility

The Situation Analysis Support Supervisor will be identified and appointed by the Situation Analysis Unit Leader at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the SASS/Plotter Supervisor will be provided by County departments or OA jurisdictions.

Responsibilities

- Assigns staff to ensure status displays (projection displays) are maintained and monitored in Operations, Command and Support Centers.

- Assigns staff to monitor specific situational status information in WebEOC.
- Ensures situational status information is gathered and displayed.
- Monitors, updates, collects, processes, and organizes ongoing situation information.
- Notifies the Situation Analysis Unit Leader of important information, unusual events, information discrepancies, etc. that need to be brought to the attention of the Planning and Intelligence Section Chief, County and OA EOC Manager, DES and OAC, Policy Group, and other Section Chiefs.
- Coordinates with County department, OA jurisdictions, DOCs, ICP Situation Analysis Units or Planning Sections to ensure the collection of information for a complete and accurate common operational picture.
- Coordinates information and reporting systems including the Initial Damage Estimates (IDE).
- Coordinates with Documentation Unit to ensure relevant event summaries and status sections are being documented in hard copy.
- Gathers and maintain charts, display maps, and records of situation information.
- Assists in developing projections and forecasts of future events related to the incident.
- Gathers and disseminate information and intelligence for use in the EOC IAP.
- Assists in the identification of resources immediately available and accessible to meet short-term needs.
- Assists in the identification of resources that can be expected to be or become available during mid- and long-term response.
- Maintain a master list of all resources committed to incident operations.
- Identifies resources immediately available and accessible to meet short-term needs.
- Identifies resources that can be expected to be or become available during mid- and long-term response.
- Tracks resources committed and available.
- Establishes a resource status display within the EOC.
- Supports the Operations Section Chief to ensure that incident resources being tracked in the EOC are accounted for.
- Works closely with the Demobilization Unit Leader and assists with development of demobilization plan.
- Assists in the identification of emerging trends and anticipates emerging needs.

3.8.2.5 Situation Analysis Support Staff (SASS)/Plotter

Assignment of Primary Responsibility

The SASS/Plotter support staff will be identified and assigned at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the SASS/Plotter support staff will be provided by the County departments or OA jurisdictions.

Responsibilities

- Collects, processes, organizes and updates ongoing situational information.
- Notifies the Situation Analysis Support Supervisor of important information, unusual events, and information discrepancies.

- Coordinates with OA jurisdictions, County departments DOCs, ICP Situation Analysis Units or Planning Sections, private sector, non-governmental agencies to ensure the collection of a complete and accurate common operational picture.
- Gathers and maintains charts, display maps, and records of situation information.
- Ensures the relevant event summaries and situation status information are documented in WebEOC®.
- Assists in the developing projections and forecasts of future events related to the incident.
- Prepares maps, gathers and disseminates information and intelligence for use in the EOC IAP.
- Assists in the identification of resources immediately available and accessible to meet short-term needs.
- Assists in the identification of resources that can be expected to be or become available during mid- and long-term response.
- Assists in the identification of emerging trends and anticipates emerging needs.

3.8.2.6 Situational Analysis Support Staff-Resource Status and Tracking

Assignment of Primary Responsibility

The SASS-Resource Status and Tracking support staff will be identified and assigned at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the SASS-Resource Status and Tracking support staff will be provided by the County departments or OA jurisdictions.

Responsibilities

- Coordinates with the Logistics Section, Resource and Support Unit to track incident resources ordered, available and deployed:
 - personnel
 - services
 - supplies
- Processes resource status change information, including location of resources.
- Coordinates with Logistics Section, Resource and Support Unit in maintaining a real-time inventory control database for all donated goods.

3.8.2.7 Situational Analysis Support Staff-GIS

Assignment of Primary Responsibility

The SASS-GIS support staff will be identified and assigned at the time of the incident based on the availability of staff with applicable GIS experience, expertise, and capability. Staffing for the SASS-GIS support staff will be provided by the County departments or OA jurisdictions.

Responsibilities

- Prepares maps and gathers and disseminates information and intelligence for use in the EOC Action Plan.

- Gathers and maintains charts, display maps, and records of situation information.
- Collects, processes, organizes and updates ongoing situational information for use in maps and other spatial products.
- Develops and maintains spatial datasets related to the incident
- Validate and use information recorded in WebEOC to produce maps and other decision-making tools for EOC Operations and Management Sections
- Notifies the Situation Analysis Support Supervisor of important information, unusual events, and information discrepancies.
- Coordinates with OA jurisdictions, County departments DOCs, ICP Situation Analysis Units or Planning Sections, private sector, non-governmental agencies to ensure the collection of a complete and accurate common operational picture.
- Assists in the developing projections and forecasts of future events related to the incident.

3.8.2.8 Messenger Supervisor

Assignment of Primary Responsibility

The Messenger Supervisor will be identified and appointed by the Situation Analysis Unit Leader at the time of the incident based on the availability of staff with applicable experience, expertise and capability. Staffing for the Messenger Supervisor will be provided by County departments or OA jurisdictions.

Responsibilities

- Ensures accurate and coordinated flow of incident information within the County and OA EOC.
- Assists with reproduction of charts, display maps, and records of situation information.
- Manages messengers assigned in the command, operations, and support centers by providing guidance and answering questions.
- Ensures accuracy and completeness of message forms utilized for communication within the County and OA EOC.
- Ensures the timely delivery of time sensitive information such as an Emergency Alert Systems release message, AlertOC, siren activation or responder safety messages.

3.8.2.9 Messenger

Assignment of Primary Responsibility

The Messenger support staff will be identified and assigned at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the Messenger support staff will be provided by County departments or OA jurisdictions.

Responsibilities

- Ensures accurate and coordinated flow of incident information within County and OA EOC.
- Assist with photocopying and facsimile support.
- Assists with reproduction of charts, display map, and records of situation information.

- Reviews messages for completeness, use of acronyms, or missing information.
- Delivers time sensitive information such as an Emergency Alert Systems release message, AlertOC, siren activation or responder safety messages to the appropriate personnel.

3.8.2.10 Documentation Unit Leader

Assignment of Primary Responsibility

The Documentation Unit Leader will be identified at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the Documentation Unit Leader will be provided by County departments or OA jurisdictions.

Responsibilities

- Coordinates with the Planning and Intelligence Section Chief and Situation Analysis Unit Leader to assist in the development of the EOC Action Plan (EAP), maintains the files, records that are developed as part of the overall EAP and planning function.
- Ensures Documentation Support Staff have been assigned to Sections and/or Branches, as appropriate.
- Supervises Documentation Support Staff assigned to Sections and Branches
- Maintains accurate and complete incident files, including a complete record of the major steps taken to resolve the incident.
- Monitors, maintains and updates situational information in WebEOC®.
- Files, maintains, and stores incident files for legal, analytical, and historical purposes.
- Assists in financial recovery and maintains official records and reports.
- Inputs situational information and mission tracking through the Cal OES web portal also known as CalEOC.

3.8.2.11 Documentation Support Staff

Assignment of Primary Responsibility

The Documentation support staff will be identified at the time of the incident based on the availability of staff with applicable experience, expertise, and capability. Staffing for the Documentation support staff will be provided by County department or OA jurisdictions.

Responsibilities

- Maintains an accurate and complete activity log for the Section, Branch, Unit or Group assigned to. The activity log is a complete record of the major steps taken to resolve the incident.
- Maintains all files and paperwork for the Section, Branch, Unit or Group support staff is assigned to.
- Assists Sections, Branches and Units in completing Status Reports.
- Participates in the development of the EOC Action Plan (EAP) and maintains the files and records that are utilized as part of the overall EAP and planning function.
- Monitors, maintains and updates situational information in WebEOC® for the assigned Section, Branch, Unit or Group.

- Records all actions taken and decisions made within the Section, Branch, Unit or Group and properly secures all documents for future filings and legal actions.
- Coordinates with Documentation Unit Leader with messages, and incident activities, to ensure complete documentation is maintained.
- Provides situational and mission tracking information for input by the Documentation Unit Leader through the Cal OES web portal also known as CalEOC.

3.8.2.12 Damage and Safety Assessment Unit Leader

Assignment of Primary Responsibility

OC Public Works

Responsibilities

- Collects and documents safety assessments (evaluation of structures to determine whether or not they can continue to be occupied) from County departments and OA jurisdictions.
- Collects and documents damage assessments (process of determining how badly a facility or structure has been damaged and provides an estimate of what it will cost to repair) from County departments and OA jurisdictions.
 - This information documents the impacts of the disaster and is used for obtaining public disaster assistance and individual assistance from the State and/or Federal government.
- Assists in evaluating damages to County departments, county unincorporated areas and OA jurisdictions.
- Provides damage and safety assessment reports to the Finance and Administration Section and Situation Analysis Unit Leader for tracking of overall costs and situation status reports.
- Assists in the determination of whether a Local Emergency should be proclaimed and whether a Gubernatorial Proclamation and/or Presidential Declaration is requested.
- Assists in identifying the extent of assistance needed from State and Federal agencies, to expedite disaster assistance.
- Coordinates with the Situation Analysis Unit to estimate property losses to be included in the Initial Damage Estimate.
- Coordinates with the assessment of impacts to damaged facilities and their ability to function (e.g., impact on customers), and the cost to repair or replace it.

Position Alternates and Successors

The successor to the Damage Assessment Unit Leader will be designated by the OC Public Works. OC Public Works is responsible for developing protocols for position succession within their organizations.

3.8.2.13 Advance Planning Unit Leader

Assignment of Primary Responsibility

The DES or OAC and Advance Planning Unit Leader will be from the same discipline agency. Since the DES and OAC is determined by the type of incident, the Situation Analysis Unit Assistant will also be determined by the type of incident.

Responsibilities

- Identified issues and requirements related to future time periods, normally 36 to 72 hours or longer.
- Prepares reports and briefings as necessary for use in strategy and planning meetings.
- Monitors action-planning activities to determine the shift in operational objectives from response to recovery.
- Begins identifying considerations and developing strategies to support a transition to recovery.
- Coordinates with the Demobilization Unit Leader.

Position Alternates and Successors

The successors to the Advance Planning Unit Leader will be designated by the department that has primary responsibility for serving as the DES or OAC during the emergency situation underway. Organizations assigned with this position are responsible for developing protocols for position succession within their organizations.

3.8.2.14 Demobilization Unit Leader

Assignment of Primary Responsibility

The DES or OAC and Demobilization Unit Leader will be from the same discipline agency. Since the DES and OAC is determined by the type of incident, the Situation Analysis Unit Assistant will also be determined by the type of incident.

Responsibilities

- Prepares the demobilization plan for the County and OA EOC to ensure an orderly, safe, and cost-effective release of personnel and equipment.
- Supports counterpart Demobilization Units within active County departments and OA jurisdictions in developing strategies for demobilization.
- Provides input to the Planning and Intelligence Section Chief on timeline for demobilization as outlined in the demobilization plan.

Position Alternates and Successors

The successors to the Demobilization Unit Leader will be designated by the department that has primary responsibility for serving as DES or OAC during the emergency situation underway.

Organizations assigned with this position are responsible for developing protocols for position succession within their organizations.

3.8.2.15 Technical Specialist (s)

Assignment of Primary Responsibility

Designated by functional capability and responsibility.

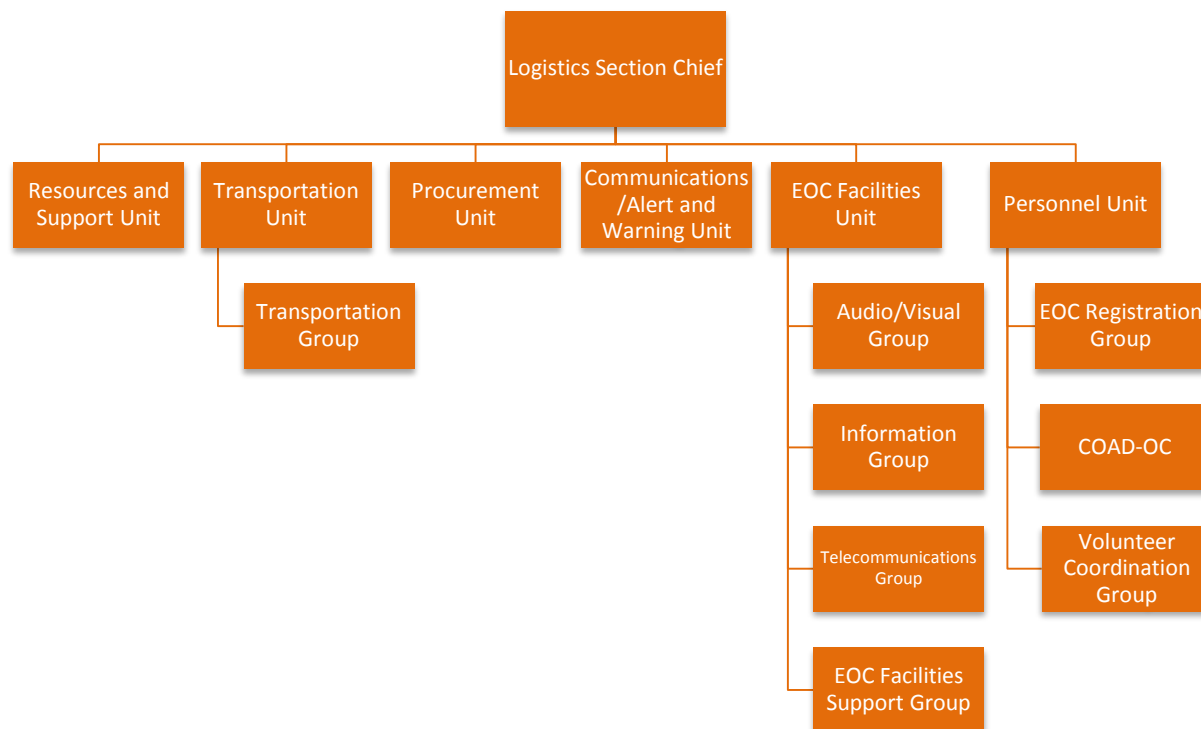
Responsibilities

Technical Specialists are advisors with special skills and are activated only when needed. Specialists may serve anywhere within the organization, including the Management Section. No minimum qualifications are prescribed, as technical specialists normally perform the same duties during an incident that they perform in their everyday jobs, and they are typically specially certified in their fields or professions.

Technical specialists assigned to the Planning and Intelligence Section may report directly the Section Chief, may report to any function in an existing unit, or may form a separate unit within the Planning and Intelligence Section, depending on the requirements of the incident and the needs of the organization. Technical specialists may also be assigned to other parts of the organization (e.g., to the Operations Section to assist with tactical matters or to the Finance and Administration Section to assist with fiscal matters). Generally, if the expertise is needed for only a short period and normally involves only one individual, that individual should be assigned to the Situation Analysis Unit. If the expertise will be required on a long-term basis and may require several personnel, it is advisable to establish a separate Technical Specialist Unit in the Planning and Intelligence Section.

- Provides technical expertise, i.e., terrorism and cyber-security specialist, to the Planning and Intelligence Section and others as required.
- Provides support specific to a field or function not addressed elsewhere or by any other discipline in the EOC.

3.8.3 Logistics Section



The Logistics Section function is responsible for providing facilities, services, transportation, personnel, equipment, food service, communications and other materials to the County and OA EOC operation to ensure that its role as a coordination point can continue without interruption. In addition, the Logistics Section will support the resource needs of any regional resource mobilized and directed by the County and OA EOC Operations Section. This may include ordering resources through appropriate procurement authorities, distribution resources, and monitoring and managing resources in support of County and OA EOC objectives. The Logistics staff positions and units pre-identified for the County and OA EOC are:

- Logistics Section Chief
- Resources and Support Unit Leader
- Procurement Unit Leader
- Communications/Alert and Warning Unit Leader
- Personnel Unit Leader
 - EOC Registration Group
 - Volunteer Coordination Group
 - COAD-OC Liaison

- Transportation Unit Leader
 - Transportation Group
- EOC Facilities Unit Leader
 - Audio and Visual Group
 - Information Technology Group
 - Telecommunications Group
 - EOC Facility Support Group

3.8.3.1 Logistics Chief

The Logistics Section Chief manages all Logistics Section activities in support of the EOC and field activities and implements the EAP. The Logistics Section Chief may have one or more assistants. Assistants will be qualified to a similar level as the Logistics Section Chief. The Logistics Section Chief should be designated for each operational period and will have direct involvement in the preparation of the EOC IAP for the period of responsibility.

Assignment of Primary Responsibility

The Logistics Section Chief will be from the County Executive Office, Purchasing Unit Administrative Manager II or Administrative Manager I.

Responsibilities

- Provides situational and resource status information to Section Chiefs and Management.
- Generates the Emergency Purchase Order that will be used on all contracts and purchases.
- Provides logistical support for EOC, field and shelter operations, such as:
 - Personnel, except for Law and Fire
 - Food and water
 - Facilities
 - Services and supplies
 - Transportation
 - Fuel
 - Communications
 - Donated goods
 - Volunteer coordination
- Coordinates and tracks all incident resources procured by the logistics section.
- Implements management decisions with respect to priorities and EOC Action Plan.
- Monitors incident activities and recommends course of action, as necessary.
- Coordinates directly with Section Chiefs in the EOC, ICP to gather situational and resource status of the incident.

Position Alternates and Successors

The successors to the Logistics Section Chief will be designated by the County Executive Office. The County Executive Office is responsible for developing protocols for position succession within their organization.

3.8.3.2 Resource and Support Unit Leader

Assignment of Primary Responsibility

County Executive Office, Purchasing Unit, Buyer II or Buyer I

Responsibilities

- Supports the incident by acquiring and coordinating resources as needed.
- Coordinates and tracks incident resources and works with the Planning and Intelligence Section, Situation Analysis Support Staff (SASS)-Resource Status and Tracking for tracking of personnel, services and supplies.
- Identifies the best strategy for sharing, acquiring, and distributing response resources and personnel.
- Provides resources, technical support and maintenance to the County and OA EOC as necessary.
- Receive, store and deploy delivered supplies to the County and OA EOC.
- Assists in determining facility requirements for the incident.
- Supports the acquisition and distribution of food for incident responders.
- Supports the Care and Shelter Branch in supplying food, water and supplies to incident victims at shelters or reception centers.
- Coordinates with Medical and Health Care Branch to address food security and safety concerns.
- Coordinates with the Public Information Officer to ensure donation needs, information on the availability of donated goods and pertinent information on donations are provided to the public.
- Assists with the establishment of a central reception area for donated goods, for inventorying and redistribution.
- Coordinates with Planning and Intelligence Section, SASS-Resource Status and Tracking in maintaining a real-time inventory control database for all donated goods
- Coordinates security with Law Enforcement and Traffic Control Branch for donated goods.
- Assesses the condition of and returns donated goods to their original owners when applicable.
- Coordinates directly with Branches, Units and Groups in the EOC, ICP and with representatives at Department Operations Center (if activated), for resource and personnel status and deficiencies.

Position Alternates and Successors

The successors to the Resource and Support Unit Leader will be designated by the County Executive Office. The County Executive Office is responsible for developing protocols for position succession within their organization.

3.8.3.3 Procurement Unit Leader

Assignment of Primary Responsibility

County Executive Office, Purchasing Unit, Buyer II or Buyer I

Responsibilities

- Administers all financial matters pertaining to vendor contracts.
- Coordinates with County departments and Operational Area jurisdiction to identify sources for equipment.
- Prepares and signs equipment rental agreements, and processes all administrative requirements associated with equipment rental and supply contracts.
- Purchases necessary equipment, materials and supplies in support of the County and OA EOC and field operations.
- Maintains resource listings of vendors.
- Coordinates delivery of supplies and materials to designated sites.

Position Alternates and Successors

The successors to the Procurement Unit Leader will be designated by the County Executive Office. The County Executive Office is responsible for developing protocols for position succession within their organization.

3.8.3.4 Communications and Alert and Warning Unit Leader

Assignment of Primary Responsibility

Orange County Sheriff's Department, Communications and Technology Division, Emergency Communications Unit

Responsibilities

- Develops the Communications Plan to ensure effective use of the communications equipment and facilities assigned to the incident.
- Identifies the best strategy for sharing, acquiring and distributing EOC radio, data and telephone needs.
- Monitors all communication systems to ensure they are operational.
- Coordinates the installation of communication equipment utilized to support the incident.
- Implements procedures for the distribution and recovery of communication equipment assigned to incident personnel and locations.
- Coordinates the maintenance and repair of communications equipment at the County and OA EOC and in the field.
- Activates the Emergency Alert System (EAS) when directed by the DES and OAC.
- Coordinates telephone, radio and data communications support for the field response, ICP, Department Operations Center, shelters, etc.

Position Alternates and Successors

The successors to the Communications and Alert and Warning Unit Leader will be designated by the Orange County Sheriff's Department, Communications and Technology Division, Emergency Communications Unit. The Orange County Sheriff's Department, Communications and Technology Division, Emergency Communications Unit is responsible for developing protocols for position succession within their organization.

3.8.3.5 Personnel Unit Leader

Assignment of Primary Responsibility

County Executive Office, Human Resources Services

Responsibilities

- Supports the incident by staffing, coordinating and providing County and OA EOC personnel related operations.
- Ensure the EOC Registration Group position is staffed.
 - Ensure all EOC responders have picture identification, sign in, and direct them to the appropriate position or supervisor.
 - Ensure all responders sign out at end of their shift.
 - Ensure shift change registration is ready for next shift.
- Provide status report of filled and unfilled EOC positions to the County and OA EOC Manager and Planning and Intelligence Section Chief.
- Utilize the EOC Registration Group for the call out of additional personnel.
- Coordinate with the Security Officer on any issues related to EOC security.
- Contact the Public Information Officer to report and request disposition of any media visitors or dignitaries.
- Coordinate with Transportation Unit Leader for transportation support for EOC responders, if offsite parking has been implemented.
- Identifies the best strategy for sharing, acquiring and distributing County and OA EOC personnel.
- Manages personnel issues and addresses personnel policies during emergency situations.
- Activates the Volunteer Coordination Group and Collaborative Organizations Active in Disasters (COAD-OC) liaison as required.
- Coordinates with COAD-OC Sector Leadership and COAD-OC members to determine needs and capabilities of the COAD-OC.
- Coordinates the Volunteer Coordination Group on requests for spontaneous volunteers and coordination with OneOC.
- Coordinates use of County personnel by implementing the California's Disaster Service Worker authorities.
- Coordinates the activation of Community Emergency Response Team (CERT) Mutual Aid Program (CMAP) through the Operation Area, if required.
- Ensures the general welfare and safety of all volunteers utilized.

- Addresses volunteer issues during incident.
- Documents and maintains records on volunteer requests, assignments and generates reports for distribution Planning and Intelligence Section Chief.
- Documents and maintains records of personnel utilized for the incident, generates reports for distribution to Management and Section Chiefs.

Position Alternates and Successors

The successors to the Personnel Unit Leader will be designated by the County of Orange Human Resources Department. The County of Orange Human Resources Department is responsible for developing protocols for position succession within their organization.

3.8.3.6 EOC Registration Group

Assignment of Primary Responsibility

Orange County Sheriff's Department

Responsibilities

- Ensure all EOC responders have picture identification, sign in, and direct them to the appropriate position or supervisor.
- Ensure all responders sign out at end of their shift.
- Ensure shift change registration is ready for next shift.
- Provide copies of each shifts sign in sheets to the Personnel Unit Leader.
- Provide status report of any unfilled positions to the Personnel Unit Leader or EOC Manager if the Personnel Unit Leader is not activated.
- Assist with the Personnel Unit Leader for the call out of additional personnel.
- Coordinate with the Security Officer on any issues related to EOC security.
- Contact the PIO to report and request disposition of any media visitors or dignitaries.
- Coordinate with Transportation Group Supervisor for transportation support for EOC responders, if offsite parking has been implemented.

3.8.3.7 COAD-OC Liaison

Assignment of Primary Responsibilities

COAD-OC Leadership Council

Responsibilities

- Identifies the best strategy for sharing, acquiring and distributing COAD-OC resources and personnel.
- Supports the incident by coordinating and providing services and resources during a proclaimed emergency.
- Supports the County and OA EOC with addressing any reported unmet needs in the community.

- Coordinates with COAD-OC Sector Leadership and COAD-OC members to determine needs and capabilities of the COAD-OC.
- Coordinates with Personnel Unit Leader for use of County personnel by implementing the California's Disaster Service Worker authorities.
- Coordinates the Volunteer Coordination Group on requests for spontaneous volunteers and coordination with OneOC.
- Supports and provides information to the Planning and Intelligence Section for inclusion in situation status reports and the EAP.
- Documents and maintains records of costs for volunteer personnel and resources utilized for the incident, generates reports for distribution to Management and Section Chiefs.

Position Alternates and Successors

The successors to the COAD-OC Liaison will be designated by the COAD Chair. The COAD-OC Leadership Council is responsible for development of protocols for position succession within their organization.

3.8.3.8 Volunteer Coordination Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Emergency Management Division

Responsibilities

- Implements the CMAP Mutual Aid Plan as required.
- Supports the incident by coordinating affiliated and spontaneous volunteers.
- Coordinates with OneOC on events where an Emergency Volunteer Center is established.
- Ensures officially requested volunteers fill out the appropriate Disaster Service Worker Volunteer Program paperwork, and is administered the Disaster Service Worker Oath under the Disaster Service Worker Volunteer Program authority.
 - Establish and maintain documentation of DSW paperwork, utilized.
 - Track and document volunteer services utilized.
- Ensures the general welfare and safety of all volunteers utilized. Reports any volunteer injuries to the Personnel Unit Leader and Finance & Administration, Claims and Compensation Unit.
- Addresses volunteer issues during incident.
- Documents and maintains records on volunteer requests, assignments and generates reports for distribution to Personnel Unit Leader and Planning and Intelligence Section Chief.

Position Alternates and Successors

The successors to the Volunteer Unit Leader will be provided by other OA jurisdictions with volunteer coordination responsibilities such as

3.8.3.9 Transportation Unit Leader

Assignment of Primary Responsibility

OC Public Works

Responsibilities

- Identifies the best strategy for sharing, acquiring and distributing transportation equipment and related personnel.
- Coordinates with the Orange County Transportation Authority (OCTA), school districts and other agencies to ensure adequate vehicles are available, including para-transit vehicles for movement of impacted population.
- Establishes a pool of vehicles for use by County and OA EOC staff as needed.
- Coordinates with Medical and Health Care Branch to ensure vehicles are available to assist in the transportation of impacted population to and from medical facilities as needed.
- Ensure auxiliary transportation methods for supporting people with disabilities and those with access and/or functional needs.
- Coordinates with the Care and Shelter Branch for transportation support.
- Coordinates the maintenance and repairs of response vehicles and mobile ground support equipment.
- Records usage time for all ground equipment, including contract equipment.
- Coordinates fuel for all response vehicles.

Position Alternates and Successors:

The successors to the Transportation Unit Leader will be designated by OC Public Works. OC Public Works is responsible for developing protocols for position succession within their organization.

3.8.3.10 Transportation Group

Assignment of Primary Responsibility

Orange County Transportation Authority (OCTA)

Responsibilities

- Ensures mass transit and para-transit vehicles are available to assist in the transportation of impacted population.
- Coordinates transportation support from outside agencies, including school districts and other mass transit agencies.
- Coordinates the implementation of transportation operations within OCTA.
- Coordinates and maintenance and repairs of agency vehicles used to support the incident.
- Coordinates transportation methods to support people with disabilities and those with access and/or functional needs.
- Coordinates with Transportation Unit Leader for fuel support of deployed vehicles.

Position Alternates and Successors

The successors to the Transportation Group Supervisor will be designated by Orange County Transportation Authority. Orange County Transportation Authority is responsible for developing protocols for position succession within their organization.

3.8.3.11 EOC Facilities Unit Leader

Assignment of Primary Responsibility

Orange County Sheriff's Department

Responsibilities

- Coordinates facility maintenance and security services at the County and OA EOC.
- Coordinates the setup of necessary support areas, including areas for food and water service, sleeping, sanitation, showering, etc. within the County and OA EOC.
- Ensures all voice and data communications, audio and visual equipment in the County and OA EOC is functional, and coordinates technical support, as required.
- Ensures the County and OA EOC remains functional by coordinating all facility support needs.
- In coordination with Resources and Support Unit obtains additional facilities, including but not limited to:
 - Alternate EOC
 - Joint Information Center
 - Local Assistance Centers

Position Alternates and Successors

The successors to the EOC Facilities Unit Leader will be designated by the Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organization.

3.8.3.12 Audio and Visual Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Communications and Technology Division

Responsibilities

- Provides technical support for operation of audio and visual systems utilized by the County and OA EOC.
- Coordinates the repairs and maintenance of the audio and visual equipment utilized by the County and OA EOC.

Position Alternates and Successors

The successors to the Audio and Visual Group will be designated by the Orange County Sheriff's Department, Communications and Technology Division. The Orange County Sheriff's

Department, Communication and Technology Division is responsible for developing protocols for position succession within their organization.

3.8.3.13 Telecommunications Group

Assignment of Primary Responsibility

County Executive Office, Telephone Services Division

Responsibilities

- Provides technical support for the operation of telecommunications systems utilized by the County and OA EOC.
- Coordinates with the EOC Facility Unit Leader with telecommunications operations, in the establishment of additional facilities.
- Coordinates the installation, repair of and maintenance of telecommunication equipment utilized by the County and OA EOC.

Position Alternates and Successors

The successors to the Telecommunications Group will be designated by the CEO, Telephone Services Division. The CEO, Telephone Division is responsible for developing protocols for position succession within their organization.

3.8.3.14 Information Technology Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Support Services Division, Information Technology Bureau

Responsibilities

- Provides technical support for the operation of information technology and delivery systems utilized by the County and OA EOC.
- Coordinates the installation, repair of and maintenance of information technology systems and equipment utilized by the County and OA EOC.
- Coordinates with the EOC Facility Unit Leader with IT support operations, in the establishment of additional facilities.

Position Alternates and Successors

The successors to the Information Technology Group will be designated by the Orange County Sheriff's Department, Support Services Division, Information Technology Bureau. The Orange County Sheriff's Department, Support Services Division, Information Technology Bureau is responsible for developing protocols for position succession within their organization.

3.8.3.15 EOC Facility Support Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Research and Development Division, Facilities Operations

Responsibilities

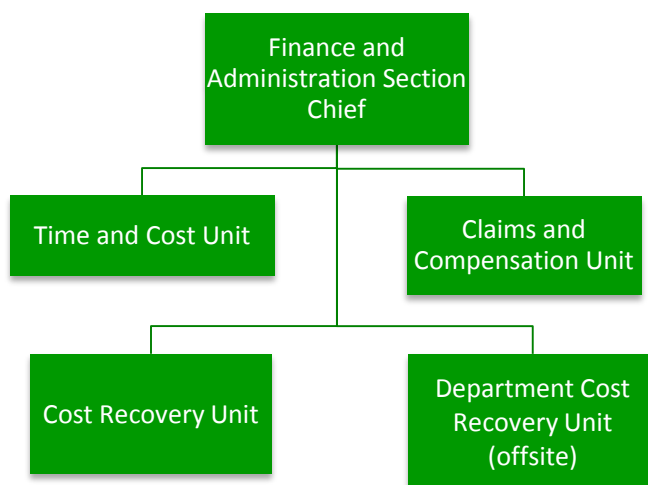
- Coordinates for the technical support of the operating and delivery systems utilized by the County and OA EOC, including but limited to:
 - Water system
 - Heating and air conditioning systems
 - Trash collection
 - Septic system
 - Propane
 - Facility generators
- Coordinate the installation, repair of and maintenance of facility operating and delivery systems utilized by the County and OA EOC.

Position Alternates and Successors

The successors to the EOC Facility Support Group will be designated by the Orange County Sheriff's Department, Research and Development Division, Facilities Operations. The Orange County Sheriff's Department, Research and Development Division, Facilities Operations is responsible for developing protocols for position succession within their organization.

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3.8.4 Finance and Administration Section



When there is a specific need for financial, (individual and agency or department), and/or administrative services to support the County and OA EOC management activities, a Finance and Administration Section is established. Not all agencies and incidents will require such assistance. In large, complex scenarios involving significant funding originating from multiple sources the Finance and Administration Section is an essential part of the response organization. In addition to monitoring multiple sources of funds, the Finance and Administration Section must track and report on the financial “burn rate” as the incident progresses. This allows the County and OA EOC Management to forecast the need for additional funds before operations are negatively affected. This is particularly important if significant operational assets are under contract from the private sector. The Finance and Administration Section may also need to monitor cost expenditures to ensure applicable statutory rules are met. Close coordination with the Planning and Intelligence Section and Logistics Section is also essential so operational records can be reconciled with financial documents. Because of the flexible nature of SEMS, NIMS, and ICS, in some cases, only one or a few specific functions may be required.

The Finance and Administration Section will be activated as required for purposes of maintaining records on personnel and equipment time, providing payments to vendors for supplies and equipment usage, and determining the cost considerations or various alternatives

strategies associated with incident planning. The Finance and Administration Section Chief will determine, given current and anticipated future requirements, the need for establishing specific subordinate units.

3.8.4.1 Finance and Administration Section Chief

Assignment of Primary Responsibility

County Executive Office, Finance Office, Administrative Manager III or Administrative Manager II

Responsibilities

- Responsible for all financial and cost analysis of the incident.
- Identifies the best strategy for sharing, acquiring and distributing response expenditures.
- Implements a County Disaster Accounting System.
- Provides regular accounting of costs (personnel, equipment, services and supplies) reports associated with the incident.
- Assists with the quantification of damage to public property.
- Acts as a financial liaison between the County, Operational Area, and other agencies.
- Recommends financial policies to Management Section and carries out agreed upon policies.
- Processes purchase orders and contracts associated with the incident.
- Processes workers compensation claims associated with the incident.
- Processes travel and expense claims associated with the incident.
- Processes insurance claims associated with the incident.
- Manages the financial claims process, working with the County's designated Applicant Agent, Cal OES and FEMA.
- Coordinates directly with Section Chiefs in the EOC, ICP and with representatives at the Department Operations Center, if activated.

Position Alternates and Successors

The successors to the Finance and Administration Section Chief will be designated by the County Executive Office, Finance Office. The County Executive Office, Finance Office is responsible for developing protocols for position succession within their organization.

3.8.4.2 Time and Cost Unit Leader

Assignment of Primary Responsibility

Auditor-Controller, Administrative Manager

Responsibilities

- Coordinates with the Logistics and Planning and Intelligence Sections to track incident resources and personnel expenditures.

- Maintains and processes complete and accurate time records of
 - all personnel utilized in the incident and
 - equipment costs
- Prepares regular reports for the Cost Recovery Unit that documents all personnel and equipment related costs of the operation at the County and OA EOC and field level.
- Ensures proper recording of personnel time in accordance with the policies of the County and the relevant departments and agencies.
- Documents excess hours worked and overtime of response personnel.
- Documents equipment usage time and expenses.
- Prepares personnel cost reports for Planning and Intelligence Section Chief.
- Provides all cost analysis activity associated with EOC and incident operations.
- Coordinates with counterparts in activated Emergency Operating Centers, to ensure that complete and accurate records are maintained.
- Coordinates directly with Unit Leaders and Group Supervisors in the EOC, ICP and with representatives at the Department Operations Center, if activated.

Position Alternates and Successors

The successors to the Time Cost Unit Leader will be designated by the Auditor-Controller. The Auditor-Controller is responsible for developing protocols for position succession within their organization.

3.8.4.3 Claims and Compensation Unit Leader

Assignment of Primary Responsibility

County Executive Office, Office of Risk Management

Responsibilities

- Coordinates documentation of incident injury and property damage.
- Accepts claims resulting from the incident as the agent for the County.
- Initiates and coordinates the investigation and compensation of injury in the areas of:
 - workers compensation
 - property damage
 - liability
- Ensures preparation of forms and reports required by workers compensation programs, providing support of claims, etc.
- Maintains a file of injuries and illnesses associated with response personnel.

Position Alternates and Successors

The successors to the Claims and Compensation Unit Leader will be designated by the County Executive Office. The County Executive Office, Office of Risk Management is responsible for developing protocols for position succession within their organization.

3.8.4.4 Cost Recovery Unit Leader

Assignment of Primary Responsibility

Auditor-Controller, Administrative Manager

Responsibilities

- Coordinates the implementation of and maintains the County Disaster Accounting System.
- Coordinates documentation requirements with other EOC sections, County departments and agencies.
- Acts as liaison with disaster assistance agencies.
- Coordinates with the County's designated Applicant Agent in the preparation of reimbursement claims for costs associated with response and recovery operations.
- Collects and secures all required financial accounting data for expected audits.
- Assists the County's designated Applicant Agent with the filing of required Disaster Assistance Application(s) with state and federal agencies.
- Coordinates with the County's designated Applicant Agent during audits by Cal OES and FEMA.

Position Alternates and Successors

The successors to the Cost Recovery Unit Leader will be designated by the Auditor-Controller. The Auditor-Controller is responsible for developing protocols for position succession within their organization.

3.8.4.5 Department Cost Recovery Unit Leader (s)

Assignment of Primary Responsibility

All County Departments and Agencies

Responsibilities

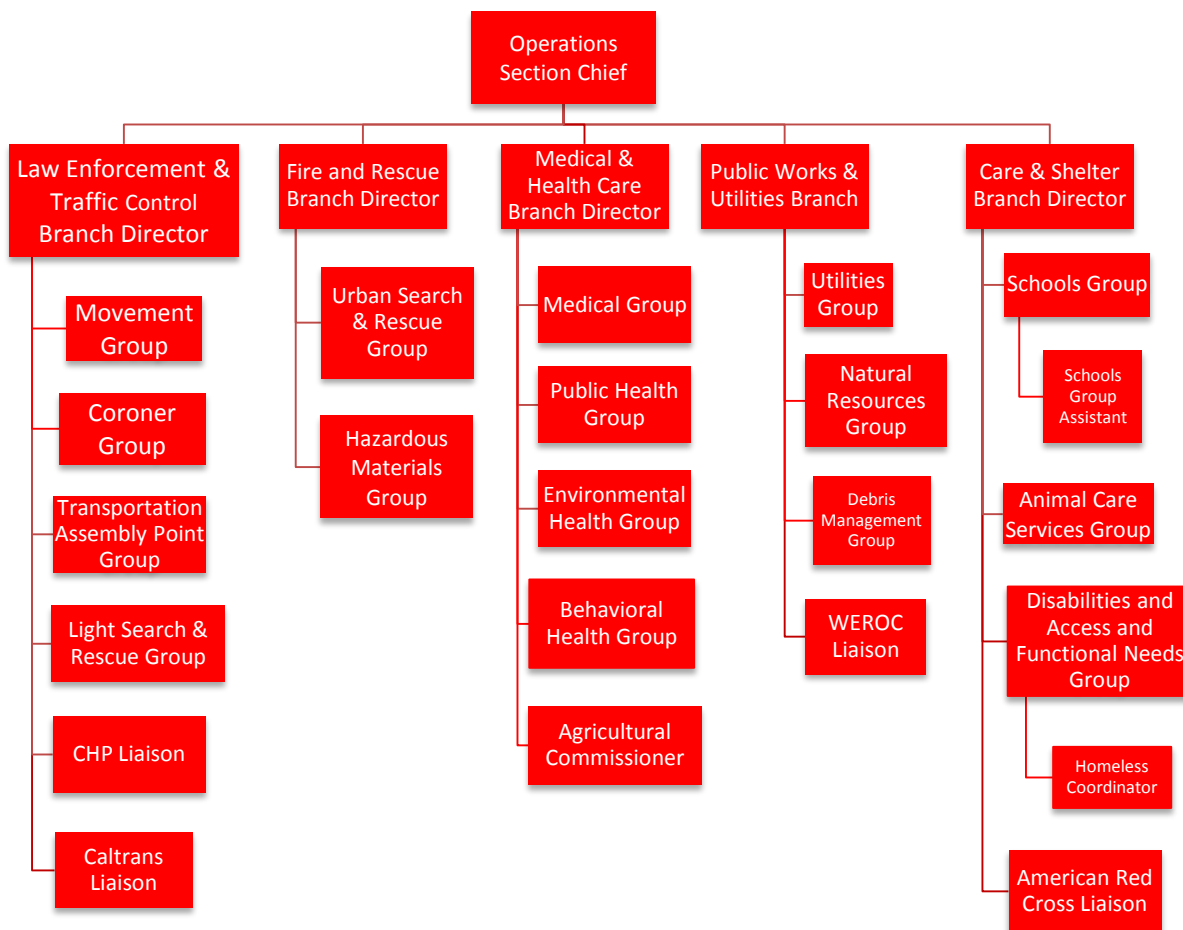
- Coordinates and tracks department and agency resources and personnel utilized during the incident.
- Maintains and processes complete and accurate time records of all department and agency personnel and equipment costs utilized in support of the incident.
- Prepares regular reports for the Cost Recovery Unit that documents all department and agency personnel and equipment incident related costs.
- Ensures proper recording of department personnel time in accordance with the policies of the County.
- Ensures complete and accurate department and agency records are maintained.
- Prepares department and agency reimbursement claims for costs associated with response and recovery operations.
- Collects and secures all required financial accounting data for expected audits.

Position Alternates and Successors

The successors to the Department and Agency Unit Leader(s) will be designated by each County Department. Each County Department and Agency is responsible for developing protocols for position succession within their organization.

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3.8.5 Operations Section



The Operations Section is responsible for coordinating incident and mutual aid support for the tactical operations of response agencies and impacted OA jurisdictions. The Operations Section Chief, each of the Branch Directors, and each of the Group Supervisors are responsible for coordinating with their counterparts, in the Incident Command Posts and active OA jurisdictions EOC to identify and seek out needed response resources and support on their behalf. In addition, there may be situations in which OA jurisdictions can better respond to a regional incident if their resources are pooled and coordinated under a single command. In these cases, County and OA EOC Operations Section personnel will coordinate with OA jurisdictions to direct the identification of, deployment and tactical operations of regional resources.

Incident operations within each OA jurisdiction can be organized and executed in many ways. The County and OA EOC will be organized in a way similar to that being used in OA jurisdiction EOCs. The specific method selected will depend on the type of incident, agencies involved, and objectives and strategies of the incident management effort.

3.8.5.1 Operations Section Chief

Assignment of Primary Responsibility

The EOC Operations Section Chief should be from the same discipline and agency as the DES or OAC. The Operations Section Chief will be determined by the type of incident.

Responsibilities

- Manages Section activities in direct support of field operations.
- Implements management decisions with respect to priorities and response plans.
- Supports Incident Command in identifying incident priorities, assessing resources and maintaining situational awareness.
- Determines the need for resources, as required by the incident.
- Requests mutual aid and other necessary resources in support field operations.
- Coordinates directly with Section Chiefs in the EOC, ICP and with representatives at the Department Operations Center if activated.

Position Alternates and Successors

The successors to the Operations Section Chief will be designated by the department that has primary responsibility for serving as the DES or OAC during the emergency situation that is underway. Organizations assigned with this position are responsible for developing protocols for position succession within their organizations.

3.8.5.2 Law Enforcement and Traffic Control Branch Director

Assignment of Primary Responsibility

Orange County Sheriff's Department, Lieutenant or Captain

Responsibilities

- Monitors and supports field operation related to:
 - Enforcing laws, orders, and regulations.
 - Alerting and warning the public and responders.
 - Managing and directing vehicular traffic, access and perimeter control.
 - Managing evacuations.
 - Protects, houses and relocates prisoners as needed.
 - Provides security for County critical facilities and resources.
 - Assisting in light search and rescue operations.
 - Coordinating Law Enforcement Mutual Aid requests.
- Supports the Security Officer in law enforcement activities within the County and OA EOC.

- Identifies resources required to assist with the mobilization and deployment for law enforcement, traffic control and perimeter control operations as necessary.
- Provides and/or coordinates for security for all County facilities, care and shelter sites, reception centers, and evacuated areas.
- Coordinates and supports Law Mutual Aid within the County and Operational Area.
- Supports damage assessment surveys of the County's unincorporated areas and county facilities.
- Coordinates directly with appropriate Sections, Units and Group Supervisors in the EOC, ICP and with representatives at Department Operations Center if activated.

Position Alternates and Successors

The successors to the Law Enforcement and Traffic Control Branch will be designated by the Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organizations.

3.8.5.3 Transportation Assembly Point (TAP) Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Lieutenant or Sergeant

Responsibilities

- Coordinate with the Movement Group Supervisor in establishing and staffing the Transportation Assembly Points for evacuees without transportation of their own.
- Coordinate with the Transportation Group Supervisor in Logistics regarding the number and which type of vehicles are available for deployment to identified TAP locations.
- Ensure orderly operation at TAPs to facilitate a timely evacuation.
- Coordinate with the Movement Group Supervisor on resource needs and activities at TAPs.

Position Alternates and Successors

The successors to the Transportation Assembly Point Group Supervisor will be designated by Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organization.

3.8.5.4 Movement Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Lieutenant or Sergeant

Responsibilities

- Implements the strategies and objectives from the Orange County Operational Area Evacuation Annex.
- Identifies the best strategy for sharing, acquiring and distributing evacuation resources and personnel in support of the incident.

- Coordinates evacuation and movement of persons out of the impacted area.
- Coordinates resources and personnel to support traffic control for the movement of impacted populations.
- Coordinates with field personnel to ensure evacuated areas are reasonably secured and that access to the evacuated area is controlled.
- Assists the Medical and Health Care Branch in the relocation of medical facility personnel and patients located in the impacted area.
- Assists in the relocation of personnel incarcerated in county facilities.

Position Alternates and Successors

The successors to the Movement Group Supervisor will be designated by Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organization.

3.8.5.5 Light Search and Rescue Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Lieutenant or Sergeant

Responsibilities

- Identifies the best strategy for sharing, acquiring and distributing search and rescue resources and personnel.
- Coordinates resources and personnel in the support of the safe removal of endangered, trapped, injured or isolated persons.
- Coordinates with the Urban Search and Rescue Group in the Fire and Rescue Branch as necessary.
- Coordinates with the Coroner Group as necessary.

Position Alternates and Successors

The successors to the Light Search and Rescue Group Supervisor will be designated by Orange County Sheriff's Department. The Orange County Sheriff's Department is responsible for developing protocols for position succession within their organization.

3.8.5.6 Coroner Group

Assignment of Primary Responsibility

Orange County Sheriff's Department, Coroner Division, Supervising Deputy Coroner

Responsibilities

- Implements objectives and strategies from the Orange County Mass Fatality Plan.

- Coordinates emergency procedures to expand decedent operations, which may include the establishment of temporary morgues, personal property management and family reception center.
- Implements policy for the collection, identification and disposition of human remains.
- Coordinates with the Search and Rescue Groups as necessary to acquire resources for search and recovery operations.

Position Alternates and Successors

The successors to the Coroner Group Supervisor will be designated by Orange County Sheriff's Department, Coroner Division. The Orange County Sheriff's Department, Coroner Division is responsible for developing protocols for position succession within their organization.

3.8.5.7 California Highway Patrol (CHP) Liaison

Assignment of Primary Responsibility

California Highway Patrol Designee

Responsibilities

- Identifies the best strategy for sharing, acquiring and distributing CHP resources and personnel in support of the incident.
- Coordinates evacuation and movement of persons out of the impacted area with the Movement Group and Caltrans Liaison.
- Coordinates resources and personnel to support traffic control for the movement of impacted populations with the Movement Group and Caltrans Liaison.

Position Alternates and Successors

The successors to the CHP Liaison will be designated by the California Highway Patrol. The California Highway Patrol is responsible for developing protocols for position succession within their organizations.

3.8.5.8 Caltrans Liaison

Assignment of Primary Responsibility

California Department of Transportation (Caltrans)

Responsibilities

- Identifies the best strategy for sharing, acquiring and distributing Caltrans resources and personnel in support of the incident.
- Coordinates evacuation and movement of persons out of the impacted area with the Movement Group and CHP Liaison.
- Coordinates resources and personnel to support traffic control for the movement of impacted populations with the Movement Group and CHP Liaison.

Position Alternates and Successors

The successors to the Caltrans Liaison will be designated by the California Department of Transportation. The California Department of Transportation is responsible for developing protocols for position succession within their organizations.

3.8.5.9 Fire and Rescue Branch Director

Assignment of Primary Responsibility

Orange County Fire Authority, Division Chief or Battalion Chief

Responsibilities

- Monitors and supports field tactical operations related to:
 - Urban search and rescue
 - Heavy rescue
 - Fire suppression and control
 - Paramedic medical service
 - Hazardous materials
 - Mass casualty
- Coordinates resources to assist with the mobilization and deployment for fire operations as necessary.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the Fire Department Operations Center, if activated.

Position Alternates and Successors

The successors to the Fire and Rescue Branch will be designated by the Orange County Fire Authority. The Orange County Fire Authority is responsible for developing protocols for position succession within their organizations.

3.8.5.10 Urban Search and Rescue Group

Assignment of Primary Responsibility

Orange County Fire Authority, Battalion Chief or Captain

Responsibilities

- Coordinates resources and personnel for the care of and safe removal of endangered, trapped, injured or isolated persons.
- Coordinates with the Light Search and Rescue Group in the Law Enforcement and Traffic Control Branch as necessary.
- Coordinates with the Coroner Group as necessary.

Position Alternates and Successors

The successors to the Urban Search and Rescue Group will be designated by the Orange County Fire Authority. The Orange County Fire Authority is responsible for developing protocols for position succession within their organizations.

3.8.5.11 Hazardous Materials Group

Assignment of Primary Responsibility

Orange County Fire Authority, Battalion Chief or Captain

Responsibilities

- Provides operational expertise, policies, and procedures for response and recovery operations associated with hazardous material situations.
- Coordinates and supports hazardous materials situations during response and recovery operations.

Position Alternates and Successors

The successors to the Hazardous Materials Group will be designated by the Orange County Fire Authority. The Orange County Fire Authority is responsible for developing protocols for position succession within their organizations.

3.8.5.12 Medical and Health Care Branch Director

Assignment of Primary Responsibility

Orange County Health Care Agency

Responsibilities

- Monitors and coordinates with field tactical operations related to:
 - People with disabilities and those with access and/or functional needs
 - Emergency medical systems
 - Environmental health concerns
 - Injured transport
 - Hospital functions
 - Skilled Nursing and Assisted Living Facilities
 - Disease control
 - Medical mass care
 - Behavioral health issues
- Coordinates resources to assist with the mobilization and deployment for health, medical, behavioral and environmental operations as necessary.
- Coordinates directly with Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the Health Care Agency DOC, if activated.
- Coordinates health, medical, environmental and behavioral health resource requests with the Medical and Health Operational Area Coordinator (MHOAC) for medical mutual aid

requests through Cal OES Regional Operations Center (REOC) and Regional Disaster Medical Health Coordinator (RDMHC) and provides information as needed to the MHOAC for status reports.

Position Alternates and Successors

The successors to the Medical and Health Care Branch Director will be designated by the Orange County Health Care Agency. The Orange County Health Care Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.13 Medical Group

Assignment of Primary Responsibility

Orange County Health Care Agency

Responsibilities

- Coordinates medical response with hospitals and private ambulance companies as needed.
- Coordinates and supports Skilled Nursing and Assisted Living Facilities with relocation.
- Implements procedures for handling Medical Mass Care and medical surge.
- Coordinates emergency medical services for incident victims.
- Coordinates logistical requests for medical transportation and medical supplies with the HCA DOC.
- Coordinates directly with appropriate Group Supervisors in the EOC, ICP and with representatives at the EMS-DOC or at the HCA DOC, if activated.
- Coordinates health, medical, environmental and behavioral health resource requests with the Medical and Health Operational Area Coordinator (MHOAC) for medical mutual aid requests through Cal OES Regional Operations Center (REOC) and Regional Disaster Medical Health Coordinator (RDMHC) and provides information as needed to the MHOAC for status reports.

Position Alternates and Successors

The successors to the Medical Group will be designated by the Orange County Health Care Agency. The Orange County Health Care Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.14 Public Health Group

Assignment of Primary Responsibility

Orange County Health Care Agency

Responsibilities

- Coordinates resources and personnel to support inspection and advisory services on public health issues, including handling of food in mass care facilities and resolving sanitation issues.
- Coordinates preventive public health services (e.g. health surveillance, epidemiology, health education, disease prevention, vaccination, occupational safety, etc.).
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the HCA DOC, if activated.
- Coordinates health, medical, environmental and behavioral health resource requests with the Medical and Health Operational Area Coordinator (MHOAC) for medical mutual aid requests through Cal OES Regional Operations Center (REOC) and Regional Disaster Medical Health Coordinator (RDMHC) and provides information as needed to the MHOAC for status reports.

Position Alternates and Successors

The successors to the Public Health Group will be designated by the Orange County Health Care Agency. The Orange County Health Care Agency is responsible for developing protocols for position succession within their organizations.

3.8.515 Environmental Health Group

Assignment of Primary Responsibility

Orange County Health Care Agency

Responsibilities

- Coordinates environmental health resources and personnel to support food, water, facility inspections, environmental remediation, hazardous waste, contamination, and sanitation.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the HCA DOC, if activated.
- Coordinates health, medical, environmental and behavioral health resource requests with the Medical and Health Operational Area Coordinator (MHOAC) for medical mutual aid requests through Cal OES Regional Operations Center (REOC) and Regional Disaster Medical Health Coordinator (RDMHC) and provides information as needed to the MHOAC for status reports.

Position Alternates and Successors

The successors to the Environmental Health Group will be designated by the Orange County Health Care Agency. The Orange County Health Care Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.16 Behavioral Health Group

Assignment of Primary Responsibility

Orange County Health Care Agency, Behavioral Health Services, Mental Health Specialist

Responsibilities

- Coordinates behavioral health resources and personnel in support of shelter operations.
- Monitors behavioral health teams in the impacted disaster areas, if deployed.
- Monitors and provides appropriate physiological support to the County and OA EOC staff.
- Coordinates with the hotline supervisor and provides a representative to work the hotline as needed.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the HCA DOC, if activated.
- Coordinates health, medical, environmental and behavioral health resource requests with the Medical and Health Operational Area Coordinator (MHOAC) for medical mutual aid requests through Cal OES Regional Operations Center (REOC) and Regional Disaster Medical Health Coordinator (RDMHC) and provides information as needed to the MHOAC for status reports.

Position Alternates and Successors

The successors to the Behavioral Health Group will be designated by the Orange County Health Care Agency. The Orange County Health Care Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.17 Agricultural Commissioner Group Supervisor

Assignment of Primary Responsibility

OC Public Work, Agricultural Commissioner

Responsibilities

- Provide information and recommendations on agricultural issues due to the incident.
- Coordinate information on advisories, protective actions or embargoes impacting agriculture.
 - Coordinate with the Public Information Officer for public messaging on agricultural advisories, protective actions and embargoes.
- Provide preliminary estimates for damage assessment to crops and livestock.
- Estimate cost of precautionary quarantine/interdiction or crop destruction.
- Obtain farm data, including location and crop type.
- Coordinate with Public Information Officer and Logistics Section, Communications, Alert and Warning Unit to notify local ranchers, if necessary on:
 - Place all grazing animals identified on stored feed and water.

- Cover all stored feed.
- Remove all lactating animals from pasture.
- Shelter livestock.
- Gather and maintain current information on farms, food crops, livestock and other agricultural data that are within the impacted area.

Position Alternates and Successors

The successors to the Agricultural Commissioner Group will be designated by the OC Public Works, Agricultural Commissioner. OC Public Works, Agricultural Commissioner is responsible for developing protocols for position succession within their organizations.

3.8.5.18 Public Works and Utilities Branch Director

Assignment of Primary Responsibility

OC Public Works, Division Manager from either Flood, Construction or Road Divisions.

Responsibilities

- Coordinates resources and personnel to assist with the mobilization and deployment for public works operations.
- Coordinates flood mitigation and abatement operations.
- Coordinates resources and personnel for heavy equipment support.
- Assists law and fire personnel in establishing or maintaining traffic control points, perimeter control, and hazardous material incident operations by providing changeable message signs, k-rails, barriers or other closure items.
- Coordinates with Planning and Intelligence Section on damage assessment inspections of public and private facilities.
- Coordinates emergency repair and restoration, debris clearance and route recovery operations.
- Coordinates debris removal and develops a debris management plan for the incident.
- Coordinates Public Works mutual aid requests.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the OC Public Works DOC, if activated.

Position Alternates and Successors

The successors to the Public Works and Utilities Branch Director will be designated by the OC Public Works. The OC Public Works is responsible for developing protocols for position succession within their organizations.

3.8.5.19 Utilities Group

Assignment of Primary Responsibility

OC Public Works, Manager

Responsibilities

- Coordinates utility resources and personnel (e.g. emergency repairs, temporary construction, restoration of essential utilities, etc.).
- Coordinates with the Water Emergency Response of Orange County (WEROC) for damage assessments and restoration of water and wastewater systems; including the coordination of water mutual aid.
- Coordinates with outside utility vendors, providers, and contractors as necessary (e.g., Southern California Edison, San Diego Gas and Electric, Southern California Gas Company, telecommunication providers) for damage assessments and restoration of services.
- Coordinates directly with appropriate Branches, Units and Groups in the EOC, ICP and with representatives at the OC Public Works Department Operations Center, if activated.

Position Alternates and Successors

The successors to the Utilities Group will be designated by the OC Public Works. The OC Public Works is responsible for developing protocols for position succession within their organizations.

3.8.5.20 Debris Management Group

Assignment of Primary Responsibility

OC Public Works, Manager

Responsibilities

- Coordinates resources and personnel to assist with the mobilization and deployment for public works operations in support of debris management.
- Coordinates resources and personnel for heavy equipment support.
- Coordinates emergency repair and restoration, debris clearance and route recovery operations.
- Coordinates debris removal and develops a debris management plan for the incident.
- Coordinates with OC Waste and Recycling for debris management planning.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the OC Public Works DOC, if activated.

Position Alternates and Successors

The successors to the Public Works and Utilities Branch Director will be designated by the OC Public Works. The OC Public Works is responsible for developing protocols for position succession within their organizations.

3.8.5.21 Natural Resources Group

Assignment of Primary Responsibility

OC Community Resources, OC Parks, Manager

Responsibilities

- Provides technical expertise on wildlife, fisheries, environmental issues and habitat conservation for wildlife affected by the emergency.
- Coordinates with Logistics Section to provide available County parks, that can be utilized to support emergency response operations, including but not limited to:
 - Staging areas
 - Base camps
 - Incident Command Post site
- Coordinates resources and personnel with Law Enforcement and Traffic Control Branch for evacuation of County parks.
- Coordinates with OC Public Works emergency repair and restoration, debris clearance and route recovery operations.
- .Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the OC Public Works DOC, if activated.

Position Alternates and Successors

The successors to the Natural Resources Group will be designated by the OC Community Resources, OC Parks. OC Community Resources, OC Parks is responsible for developing protocols for position succession within their organizations.

3.8.5.22 Water Emergency Response Organization of Orange County (WERO) Liaison

Assignment of Primary Responsibility

WERO, Emergency Services Manager, or designee

Responsibilities

- Coordinates water and waste water resources and personnel (e.g. emergency repairs, temporary construction, restoration of essential utilities, etc.).
- Coordinates with the water and waste water utilities for damage assessments and restoration of water supplies and systems.
- Coordinates directly with Branches, Units and Groups in the EOC, ICP and with representatives at the OC Public Works Department Operations Center, if activated.

Position Alternates and Successors

The successors to the WERO Liaison will be designated by the WERO. WERO is responsible for developing protocols for position succession within their organizations.

3.8.5.23 Care and Shelter Branch Director

Assignment of Primary Responsibility

Social Services Agency, Administrative Manager

Responsibilities

- Coordinates resources and personnel to assist with the mobilization and deployment for care and shelter operations as necessary.
- Coordinates with Schools Group and American Red Cross Liaison to ensure shelter sites meet ADA (American with Disabilities Act) requirements.
- Coordinates with the Disabilities and Access and Functional Needs Group on any related issues, resources and public information needs for both impacted and non-impacted populations.
- Coordinates with the Public Information Officer on shelter status and operations.
- Coordinates with American Red Cross, Orange County Chapter and others as needed, in support of shelter operations.
- Coordinates with OC Animal Care Group for the care of animals and determination of appropriate animal care sites.
- Coordinates directly with appropriate Sections, Branches, Unit Leaders and Group Supervisors in the EOC and ICP, jurisdictions and with representatives at the Social Services Agency DOC, if activated.

Position Alternates and Successors

The successors to the Care and Shelter Branch Director will be designated by the Social Services Agency. The Social Services Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.24 Schools Group

Assignment of Primary Responsibility

Orange County Department of Education

Responsibilities

- Coordinates with school management to determine status of facilities, operations, resource and personnel needs.
- Coordinates with Logistics Section, Transportation Unit for status of available school buses that could be utilized for transportation of impacted population.
- Coordinates with the American Red Cross and the Disabilities and Access and Functional Needs (DAFN) Group in identifying appropriate school sites for care and shelter operations.
- Coordinates with the Public Information Officer on school(s) status.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and representatives at the Department Operations Center, if activated.
- Keeps the emergency organization apprised of issues relating to schools and children.

- Coordinates with private schools and child care facilities on reunification, lockdown, evacuation plans and unaccompanied minor situation status.

Position Alternates and Successors

The successors to the Schools Group will be designated by the Orange County Department of Education. The Orange County Department of Education is responsible for developing protocols for position succession within their organizations.

3.8.5.25 Animal Care Group

Assignment of Primary Responsibility

OC Community Resources, Animal Care Services, Manager

Responsibilities

- Monitors and supports field tactical operations related to animal evacuations.
- Coordinates and supports operations relating to:
 - Establishing animal shelters
 - Animal transportation
 - Coordinates with volunteer groups for large animal relocation
 - Search and rescue
 - Reunification with owners
 - Euthanizing
- Coordinates with the Public Information Officer and Public Information Officer Support Staff on animal related issues, status and operations.
- Coordinates directly with appropriate Sections, Branches, Units and Group Supervisors in the EOC, ICP and with representatives at the Department Operations Center, if activated.

Position Alternates and Successors

The successors to the Animal Care Group will be designated by the OC Community Resources, Animal Care Services. The OC Community Resources, Animal Care Services is responsible for developing protocols for position succession within their organizations.

3.8.5.26 Disabilities and Access and Functional Needs Group

Assignment of Primary Responsibility

Social Services Agency

Responsibilities

- Provides information to County and OA EOC Sections, Branches, Units and Groups on people with disabilities and those with access and/or functional needs-related issues, including available resources.

- Facilitates and maintains communication between the County and OA EOC and area organizations serving people with disabilities and those with access and/or functional needs, to monitor their response activities and needs.
- Ensures people with disabilities and those with access and/or functional needs are properly considered in all aspects of the incident response and recovery.
- Coordinates with the Communications, Alert and Warning Unit Leader to ensure all methods of emergency communications with the public are as accessible as possible, including AlertOC and the Emergency Alert System (EAS).
- Coordinates with Operations Section and Branches to identify access and functional needs-related issues and available resources.
- Works with Planning and Intelligence Section to provide information for inclusion in the EOC Action Plan.
- Provides information to the PIO, PIO Support Staff and Hotline Supervisor on how to effectively communicate with people with disabilities and those with access and/or functional needs.
- Coordinates with the PIO and PIO Support Staff to ensure organizations serving people with disabilities and those with access and/or functional needs are receiving all County and OA public notifications including, EOC press releases.
- Coordinates with Medical and Health Care Branch to consult available population and facility databases to determine the extent to which critical care facilities are affected.
- Coordinates with Law Enforcement and Traffic Control Branch, Movement Group and Logistics Section, Transportation Unit to address any needs related to transportation accessibility and availability.
- Coordinates with American Red Cross Liaison and Care and Shelter Branch Director to address any accessibility issues in official and unofficial shelter locations.
- Coordinates with other shelter agencies on access and functional needs issues in shelters including the American Red Cross, Health Care Agency Behavioral Health, and Animal Care Services.
- Assists Logistics Section, as needed, with technical expertise on certain resources such as durable medical equipment (DME) and consumable medical supplies (CMS).
- Coordinates with:
 - Advance Planning Unit (for people with disabilities and those with access and/or functional needs resource forecasting)
 - Public Works and Utilities Branch (to obtain manifest list of those who need electricity to use critical devices for use during power outages)
 - Situational Analysis Support Staff (to facilitate specific information related to people with disabilities and those with access and/or functional needs is collected)

Position Alternates and Successors

The successors to the Disabilities and Access and Functional Needs Group will be designated by the Social Services Agency. The Social Services Agency is responsible for developing protocols for position succession within their organizations.

3.8.5.27 Homeless Liaison

Assignment of Primary Responsibility

OC Community Resources, Administrative Manager I or above

Responsibilities

- Provides information to County and OA EOC sections on homeless related issues and available resources.
- Facilitates and maintains communication between the County and OA EOC and area organizations serving homeless populations.
 - Continue to monitor their activities and needs.
- Ensures homeless populations are properly considered in all aspects of the incident response and recovery activities.
- Coordinates with the Law Enforcement and Traffic Control Branch Director, Public Works and Utilities Branch Director, Communications/Alert and Warning Unit, Public Information Officer and PIO Support staff to ensure methods of emergency communications are including homeless populations impacted by the event.
- Coordinates with Operations Section to identify homeless related issues and available resources.
- Works with Planning and Intelligence Section to provide information for inclusion in EOC Action Plan.
- Provides information to PIO, PIO Support Staff, 211 OC and Public Information Hotline and Rumor Control Supervisor on effectively communicating with homeless populations.
- Forwards any press releases to the organizations who serve the homeless populations.
- Coordinates with Movement Group and Transportation Unit to address any needs related to transportation accessibility and availability.
- Coordinates with American Red Cross Liaison and Care and Shelter Branch Director to address any homeless population accessibility issues in official shelter locations.
- Coordinates with other shelter agencies on homeless issues in shelters including the American Red Cross, Health Care Agency Behavioral Health, and Animal Care Services.
- Coordinate with non-profit/faith based organizations providing care and services to the homeless population.
- Create list of available resources or locations offered by such organizations and provide this information to the Logistics Section.
- Coordinates with:
 - Law Enforcement and Traffic Control Branch (evacuation and alert and warning notifications)

- Public Works and Utilities Branch (obtain list or location of where personal artifacts were relocated from riverbed channels during storm events)
- Planning and Intelligence Section, Situational Analysis Support Staff (to ensure specific information related to homeless populations is collected and documented)
- Planning and Intelligence Section, Advance Planning Unit (for homeless needs resource forecasting)

Position Alternates and Successors

The successors to the Homeless Liaison will be designated by OC Community Resources. OC Community Resources is responsible for developing protocols for position succession within their organizations.

3.8.5.28 American Red Cross Liaison

Assignment of Primary Responsibility

American Red Cross

Responsibilities

- Supports the County and Operational Area in meeting the resource needs of the County and OA jurisdictions that relate to:
 - Shelters
 - Behavioral health
 - Public welfare
 - Schools
 - Social services
 - Child, elder and guardianship protective issues
 - Emergency food and water distribution for the public and emergency responders

Position Alternates and Successors

The successors to the American Red Cross Liaison will be designated by the American Red Cross. The American Red Cross is responsible for developing protocols for position succession within their organizations.

3.9 Information Collection, Analysis, and Dissemination

Prior to the County and OA EOC being activated the County and OA can directly receive alert and warning notifications from several sources such as, the State Warning Center, the National Weather Service and county departments and OA jurisdictions. The Orange County Sheriff's Department, Emergency Management Division has the responsibility to collect and disseminate these notifications based upon current plans and procedures.

Upon activation of the County and OA EOC, the Planning and Intelligence Section will be responsible for gathering timely, accurate, accessible and consistent intelligence during an

emergency. EOC Action Plans (EAP) will be utilized to create a common operating picture and be used to adjust the operational goals, priorities and strategies.

- Information dissemination within the EOC, information communication will take place using various communication tools:
 - The EOC provides the structure for face-to-face communication and coordination.
 - The EOC Message form is used for written communications and documentation of key messages.
 - WebEOC's situational status display boards are kept updated throughout the activation to provide instant status communications.
- Information disseminated outside of the EOC: The EOC provides the single point of contact for information sharing to county departments, OA jurisdictions and supporting agencies within the OA. Such communications take place via typical systems such as telephone, e-mail, radio, fax and WebEOC.

3.9.1 Alert and Warning

Alert and warning is the process by which governmental forces and the general public are made aware of the threat of imminent, extraordinary danger. Dependent upon the nature of the threat and the population at risk, warning can originate at any level of government.

Success in saving lives and property is dependent upon timely dissemination of warning and emergency information to the populations in a threatened areas. The County of Orange is responsible for warning and alerting the unincorporated areas and County departments and as the Operational Area to assist OA jurisdiction with warning and alerting of their population.

The Orange County OA local warning point is the Orange County Sheriff's Department, Control One, co-located with the County and OA EOC. The 24-hour a day personnel at Control One are responsible for notifying the appropriate county departments, and city warning points and the emergency management staff for the County.

There are various mechanical systems in place, described below, whereby an alert or warning may originate and be disseminated to the County.

Government Notifications and Alerts

The County and OA may become aware of specific emergency situations or conditions via the following methods:

California State Warning Center (CSWC)

The California State Warning Center is the official state level point of contact for emergency notifications. The CSWC maintains contact with Operational Area Warning Points, state agencies, federal agencies and the National Warning Center.

- Notifications received by CSWC: Local governments and OAs notify the CSWC of emergencies that affect their community in accordance with existing laws, protocols or when state assistance is requested or anticipated.
- Earthquake Notifications: the CSWC receives notifications of earthquakes from the California Integrated Seismic Network (CISN), National Earthquake Information Center (NEIC) and the United States Geological Survey (USGS).
- Tsunami Notifications: CSWC receives tsunami notifications from the National Tsunami Warning Center via the National Weather Service (NWS) and the National Warning Center.
- Weather Notifications: notification of severe weather is received from the NWS-San Diego Office.
- Energy Notifications: the California Independent Systems Operator (California ISO) monitors the state's power grids. When the grid is unable to meet electrical demands, the California ISO will direct utilities to reduce their load and issue emergency notices of energy interruptions. CSWC will be notified when the operating reserves reach these critical levels.
- Hazardous Materials, Oil Spill Release Notifications: in accordance with state law, CSWC will be notified of any release or threatened release of hazardous materials.

CSWC Dissemination of Alert and Warnings: the CSWC is responsible for informing, communicating, alerting and notifying local government, OAs, state officials and the Federal government of emergencies. CSWC is equipped with a number of telephone, data and radio systems, including CALWAS, CLETS, NWS Weather Wire, EDIS and Dialogic Automated Notification System, most of these systems are used on a day-to-day basis; others are available for use in an emergency, as conditions require.

- CALWAS: The CSWC maintains the California Warning System (CALWAS) to communicate with Cal OES Regional Offices and County Warning Points during an emergency. CALWAS is part of the National Warning System (NAWAS).
- CLETS: The California Law Enforcement Telecommunications System (CLETS) is a high speed message switching system that provides law enforcement and criminal justice agencies with the capability of obtaining information directly from federal, state and local computerized information files. In addition, the system will provide fast and efficient point to point delivery of messages between agencies.
- CLEMARS: the California Law Enforcement Mutual Aid Radio System provides common police radio frequencies for use statewide by state and local law enforcement agencies during emergencies where inter-agency coordination is required. It operates under appropriate FCC rules and regulations and is administered by the State through Cal OES. Participation in CLEMARS is open to all California law enforcement agencies which are eligible to operate on radio frequencies authorized by the FCC for Police Radio Service. CLEMARS use is governed by a system of priorities:
 - Priority 1-Disaster and extreme emergency operations for mutual aid and interagency communications
 - Priority 2-Emergency or urgent operations involving imminent safety of life or protection of property

- Priority3-Special event control activities, such as a planned event involving the participation of two or more agencies
- Priority4-Drills, tests and exercises
- Priority 5-Single agency secondary communications
CLEMARS programmed radios are available through the Orange County Sheriff's Department, Control One
- EDIS: the Emergency Digital Information Service is a Cal OES provided service, developed in response to a legislative mandate, as a method to assist the media in providing messages visually to the hearing impaired. EDIS is utilized for the distribution of warning and emergency information to the media and to the public
- OASIS: the Operational Area Satellite Information System is a satellite based communications system. OASIS provides an alternate method of communication between the State, Cal OES Regions and Operational Areas

National Weather Service (NWS)

The NWS provides warnings for weather, hydrologic and climate needs for the United States, its territories, adjacent waters and oceans. Orange County receives its notifications from the San Diego Forecast Office, which prepares any necessary warning for Orange County.

The National Weather Service transmits continuous weather information for the Orange County area on 162.450 MHz Weather Service severe weather broadcasts are preceded with a 1,050 MHz tone that activates weather monitor receivers equipped with decoders. The Weather Service can also access NAWAS to announce severe weather information which is disseminated to the county warning points utilizing the CALWAS system.

The levels of notifications that the NWS issues include the following:

- Outlook
- Statements
- Watches
- Advisories
- Warnings

National Oceanic and Atmospheric Administration's (NOAA) National Tsunami Warning Center: Tsunami warnings for California are issued by NOAA's National Tsunami Warning Center (NTWC) located in Palmer, Alaska. The NTWC monitor a network of seismic and sea-level stations, providing the basis for which tsunami warnings, advisories, watches and information statements to the State Warning Center and to local coastal communities.

Public Media

Like all individuals, the County's emergency management and response personnel have access to and monitor media outlets on a daily basis. If the media reports on incidents underway or threats of pending incidents, then the County will become aware of those warnings just as any ordinary citizen would.

Public Notifications and Alerts

Emergency information warnings, advice and protective action instructions may be broadcast to the public by one or more methods including: EAS, sirens, SigAlerts, media releases, route alerting and AlertOC.

Methods of warning the public of specific emergency conditions are described below. These systems may also be primary ways that state and local governments become aware of emergency information. All public notifications and alerts issued by the County and OA will be coordinated with other jurisdictions that are or may be impacted and in accordance with current plans and procedures.

Integrated Public Alert and Warning System (IPAWS)

IPAWS is an internet based alert and warning gateway operated by FEMA. Organizations with a responsibility for alerting the public may request approval to send alerts to IPAWS when authorized to do so under their state or local EAS plan. To use IPAWS a jurisdiction must acquire software from a third party vendor, file a Memorandum of Agreement (MOA) with FEMA and submit a request for Public Alerting Authority to the Cal OES. Upon approval, jurisdictions will receive a Collaborative Operating Group (COG) identification number and an electronic security certificate which will allow their software to connect to the IPAWS gateway.

IPAWS messages are geographically targeted to a specific county and are electronically transmitted over the internet to the requesting alerting system. Jurisdictions can use their connection to IPAWS to route alerts in the EAS and Wireless Emergency Alert (WEA) system.

Orange County Operational Area has been approved and has the authority to implement EAS and WEA for alerting the public.

Emergency Alert System (EAS)

The Emergency Alert System (EAS) is designed for cable television systems and AM, FM and TV broadcast systems to disseminate emergency public information. This system enables the President as well as federal, state and local governments to communicate with the general public.

This system uses the facilities and personnel of the broadcast industry on a volunteer basis. EAS is operated by the broadcast industry according to established and approved EAS plans, standard operating procedures and within the rules and regulations of the Federal Communications Commission (FCC). FCC rules and regulations require all participating stations with an EAS operating area to broadcast a common program. Each broadcast station volunteers to participate in EAS and agrees to comply with established rules and regulations of the FCC.

EAS can be accessed at federal, state, and local levels to transmit essential information to the public. Message priorities under Part 73.922(a) of the FCC's rules are as follows:

Priority One.....Presidential Messages (carried live)
Priority Two.....Operational (Local) Area Programming
Priority Three.....State Programming
Priority Four.....National Programming and News

Presidential messages, national programming, and news will be routed over established network facilities of the broadcast industry. State programming will originate from the state operations center and will be transmitted through the state using the state's California Law Enforcement Radio System (CLERS). Local programming will be transmitted by the Local Primary (LP-1) and (LP-2) stations.

Examples of emergencies identified by the County which may warrant EAS activation by the broadcast industry are earthquake, serious fires, heavy rains and flooding, 9-1-1 system outages, severe industrial accidents, and hazardous material accidents. The context of any emergency broadcast transmitted on EAS should be of concern to a significant segment of the population of Orange County. The message must be a voice message, it may be prerecorded, and it must not be longer than two (2) minutes in length.

EAS activation can be authorized by any one of the following parties for the County:

- Orange County Sheriff-Coroner Department, Department Commander
- Orange County Fire Authority Chief, Division Chief, Battalion Chief
- Orange County Health Care Agency
- OC Public Works
- County of Orange Director of Emergency Services

Orange County relies on KWVE-107.9 FM as its LP-1 EAS station. The LP-2 back-up is located at the Control One Communications Center at the Loma Ridge facility.

Additional information can be found in the Orange County Emergency Alert System (EAS) Communications Operations Plan.

Wireless Emergency Alerts (WEA)

WEA are free informational test messages that are sent to WEA-enabled cell phones within range of an imminent and dangerous local situation, severe weather event or AMBER emergency.

WEAs are emergency messages sent by local authorized government authorities through wireless carriers' networks. The alerts include a unique sound and vibration, are no more than 90 characters and instruct specific actions individuals should take. These messages are

authorized to be sent by the county. It shall be noted, these cannot be issued to a specific city boundary therefore all WEA messages go to the entire county geographic area when initiated.

AlertOC

AlertOC is Orange County's regional public mass notification system designed to keep those who live or work in Orange County informed of important information during emergency events.

AlertOC is available 24/7 and has been pre-loaded with Orange County landline phone numbers (including unlisted) and countywide geographic maps. Additionally, citizens have the option to provide additional contact information via self-registration portal www.alertoc.com. Upon local authority decision to activate, the System will be used to send a message, describing the situation and recommended action the public should take, to affected businesses and households via:

- Phone Calls
- TTY and TDD
- E-mail
- Text message

Use of the Mass Notification System for emergency activity contains two components:

- The need to disseminate critical, safety-related information to individuals regarding emergency events occurring now, follow up information regarding the event and termination of the emergency event.
- Communicating with safety-responder staff, volunteers and involved parties about the emergency event.

As a general rule, the System is to be used when the public is being asked to take some action (e.g. evacuate, prepare to evacuate, shelter in place, boil tap water before drinking, local assistance centers and other follow up information, re-entry to an areas after evacuation orders have been lifted or termination of the emergency because the danger has passed).

Emergency Public Notifications are limited to:

- Imminent or perceived threat to life or property
- Disaster notifications
- Evacuation notices
- Public health emergencies
- Public safety emergencies
- Any notification to provide emergency information to a defined community

Emergency Responder Notifications are limited to:

- Contacting first responders to advise of an emergency
- Contacting first responders to report for duty due to an emergency
- Contacting key staff regarding an emergency or crisis situation
- Contacting agency employees to report at a different time or location (or provide an update) due to an emergency
- Exercises

Additional information can be found in the Orange County Operational Area Countywide Public Mass Notification System Standard Operating Procedures.

Route Alerting and Door-to-Door Canvassing

Route Alerting is a form of alert and notification that is used frequently in small scale emergencies or during rapidly changing situations in a designated area. In route alerting, emergency officials drive or walk through an affected or potentially affected area alerting residents in that area of the emergency and actions they need to take. Route Alerting can be conducted door to door or via a public address system on a police car, fire engine etc. Although route alerting is effective when other systems are unavailable, it is dependent on resource availability and can be a slow process. Route Alerting is traditionally utilized only in areas that are ordered to take action.

3.10 Communications

3.10.1 Communication with the Public

The role of public information during and after a disaster is crucial. If employees, residents and businesses lack reliable information, this may be paralyzing for them and may turn to distrust or anger at authorities. It is imperative that the OA go beyond minimal efforts to keep the public aware and informed. It will therefore include provision of timely, reliable, and regular information via multiple media channels, including print, broadcast, website(s), social media, community organizations and networks, direct outreach, etc., as well as in multiple languages and formats.

All efforts will be made to keep residents, businesses, and government employees informed of what they can expect from the County and/or OA, where and how they can access resources and information, and conversely they should be informed of what their community expects of them and where and how they can access the resources they need to be self-reliant and advance their own recoveries.

Public information channels such as social media, hotlines, or in-person visits must be quickly established to receive incoming questions and referrals. Communication with employees,

residents and businesses that may have been displaced outside the county will also need to be addressed.

The County and OA has a multitude of tools available to assist in the dissemination of public information. It is the responsibility of the PIO to initiate the use of all applicable communication mediums in order to reach the intended audience during response and recovery. The tools listed below are intended to complement each other in distributing public information. The same message should be distributed across all channels to minimize any confusion due to conflicting information.

Media Outlets

A list of media outlets for Orange County and the surrounding region is maintained by the Orange County Sheriff's Department, Emergency Management Division. PIO members should attempt to contact as many media outlets as possible when disseminating information, paying special attention to include non-English speaking outlets and any other information delivery vehicles to ensure the greatest number of affected people is informed. Additionally, media outlets should be encouraged to provide a television crawl and sign language interpreters during press conferences, or media releases so people with disabilities and those with access and/or functional needs have every opportunity to receive the message being broadcasted.

Website Pages

The Orange County Sheriff's Department, Emergency Management Division EOC website (<http://www.ocgov.com/eoc>) is an informational site for the public and county employees. During an activation of the EOC, this site serves as a place for press releases and information to be publicly posted online.

Both FEMA and Cal OES maintain websites that provide information and resources available to assist businesses and individuals, their addresses are as follows:

- FEMA: <http://www.fema.gov> and <http://www.DisasterAssistance.gov>
- Cal OES: <http://www.caloes.ca.gov>

2-1-1 Orange County

2-1-1 Orange County (2-1-1) is a telephone-based service set aside by the Federal Communications Commission for the public's use in accessing community services 24 hours a day, 7 days a week. This need becomes even greater during and following a disaster. 2-1-1 works closely with the County and OA to provide essential information to Orange County residents in the event of an emergency and maintains close working relationships with the County, Orange County Red Cross, Orange County Social Services Agency, Orange County Health Care Agency and the COAD-OC. 2-1-1 is kept informed with the most up-to-date information from County authorities to ensure it can relay and support accurate information to

any calls received. 2-1-1 also forwards calls to the County and OA if there are specific requests beyond the scope of services, such as people with disabilities and those with access and/or functional needs requests and volunteer and donation offers.

News Conferences, Public Forums and Community Meetings

News conferences are an integral part of the public information function before (when possible), during, and after an emergency. A well-crafted news conference needs to identify important facts to share with the public, such as public resources (e.g., Local Assistance Center(s), 2-1-1, volunteer services, donations).

There may be multiple spokespersons participating during a news conference, public forum, or community meeting. There may be times when one spokesperson for all aspects of the incident may be enough, but in most cases of a complex incident, a unified approach with multiple spokespersons is preferred. Consequently, preplanning meetings prior to a press conference is of vital importance.

For public meetings, consideration must be given to ensure all resources are available to accommodate the audience being addressed, such as sign-language interpreters, large-print handouts and displays, non-English translation services, and media using in-frame captioning at all press conferences held by public officials.

The public looks to its elected officials as sources of information and strength during an emergency and recovery. Officials need to advise the public on the status of the response and recovery efforts, the resources available to them, and what the public needs to do to assist in their recovery. The OA will work to give these officials the critical information needed to guide the public. OA PIOs can provide tools or guidance to help elected officials, including the following:

- Preparing talking points and key messages for elected officials to deliver during interviews.
- Anticipating questions elected officials may be asked and prepare appropriate answers (particularly for difficult questions).
- Highlighting public response efforts and recovery resources.

Social Media

The County of Orange has approved the use of Facebook and Twitter for communications to the public during a disaster. Integrating information being received from verified accounts into the emergency organization can help to increase situational awareness and gain a better common operating picture. The County and OA will monitor these accounts for relevant information; however, the County Facebook page will be used strictly for providing information and not to receive any communications from the community. Many County departments

maintain their own social media sites, and receiving communications from the public is at their discretion.

Social media can also be a powerful tool in information dissemination; however, messages released by the OA to social media sites must be approved by the DES. Social media outlets used by the OA will only contain information present in approved press releases, and only authorized OA representatives may post to the social media outlets.

The County of Orange Social Media Protocol for Twitter use can be found in Orange County Operational Area Joint Information System Annex, Appendix E of the Field Operating Guide.

County and Operational Area Public Information Hotline and Rumor Control

The County Public Information Hotline and Rumor Control, when activated, provides current, accurate and approved information to the community.

Non-Governmental, Non-Profit, Voluntary Organizations

Non-government, non-profit and voluntary organizations have a significant role in public information within the OA. Organizations will be looking for up to date information and citizens will be turning to their familiar community organizations as a source of information. Accurate, timely and approved information that is developed by the PIOs will need to be disseminated to local organizations as well as residents. PIOs will work with all information personnel, including organization liaisons, to ensure the communication of the most accurate and up-to-date information. The County of Orange works closely with COAD-OC.

Additional information can be found in the County of Orange and Orange County Operational Area Joint Information System (JIS) Annex.

3.10.2 Communicating with County Departments and Operational Area Jurisdictions

A variety of voice, data and combined voice and data systems are available in the County and OA EOC to ensure uninterrupted communications amongst county departments, OA jurisdictions and supporting organizations.

Telephones

The County and OA EOC has 140+ separate phone lines. These phone lines are on a first priority repair schedule in accordance with the County's Telecommunications Service Priority (TSP) program, if an interruption occurs. There are also conference call phones and numbers available for communications, both in the Command and Support Centers. All additional telecommunications services should be requested through the Logistics Section, EOC Facilities Unit.

Cellular Phones

The County and OA EOC, by design, is located in a rural area at the top of Loma Ridge. While this has been a prime location for establishing two-way radio communication throughout the OA; it has been difficult for EOC responders to use cellular telephones in the facility.

As identified in after action reports, the County and OA EOC has established in building repeater systems in order to provide cellular service in the EOC, by the three primary providers utilized by County departments, Sprint, Verizon and AT&T.

800 MHz Radios

The EOC has connectivity to the County's 800 MHz system, which provides access from the EOC to field personnel (e.g., fire, police, public works, public utilities, etc.) and potentially to mutual aid partners as well. During an emergency, County radios should be limited to emergency radio traffic only.

Orange County's EOC radio consoles have been programmed with each county and city law enforcement, fire service, lifeguard, marine safety, and public works agency for interoperable and mutual aid communications. Details on each can be found in the 800 MHz SOP, which is available through the Orange County Sheriff's Department, Control One.

EOC to EOC Radio

The County and OA has EOC-to-EOC radio systems through frequencies known as OA1, OA2, OA Access and WEROC, that are designed as an additional communications system between the County and OA EOC, county departments and OA Jurisdictions with these radio capabilities. The frequencies are always monitored by Control One in the event a department or jurisdiction cannot communicate by any other method. However, most county departments and OA jurisdictions do not monitor these systems continuously, once the County and OA EOC has been activated, notifications are sent out advising all departments and OA Jurisdictions to monitor the EOC-to-EOC radios.

Satellite Phone

Hardwired satellite phones are available in various locations within the County and OA EOC. These can be used as back-up communication devices if telephones, cellular phones, radios, or other devices fail. It is not necessary to notify stakeholders that the satellite phone is being used because calls are rolled over from the satellite system to the commercial telephone automatically.

Radio Amateur Civil Emergency Service (RACES)

RACES consist of volunteer amateur radio (ham radio) operators who are committed to assisting with emergency communications in times of disaster. This group can provide auxiliary communications for all response agencies and other departments. The County maintains a

cadre of RACES volunteers and radio base stations to ensure communications between the EOC and various locations can be maintained. Individual operators may have their own base stations that can also be dispatched at the discretion of the County and OA EOC. Emergency information can be communicated through RACES operators to any location where an operator is dispatched (e.g., local EOCs, Incident Command Posts, shelters, staging areas, etc.). Emergency information of any sort may be communicated through a ham radio operator. While operating in a RACES capacity, RACES stations and amateurs registered in the local RACES organization may not communicate with amateurs not operating in a RACES capacity.

WebEOC

Orange County currently uses WebEOC® as its crisis information management system for real-time information sharing. WebEOC® is the primary form of communication utilized during a disaster event.

WebEOC® is a software program for electronically sharing disaster information within the County and OA EOC, County departments, OA jurisdictions and supporting agencies. WebEOC® is accessed through the internet and is thereby accessible from any computer with internet access, as long as the user has an appropriate username and password. The system is used for, but not limited to:

- Maintaining individual activity logs by each position in the EOC.
- Monitoring and posting significant events taking place in the OA.
- Providing and sharing situational status information from County departments, OA jurisdictions and supporting agencies involved in the response, with display capabilities within the EOC.
- Monitoring who is supporting the response.
- Providing status information on operational shelters (e.g., location, capacity, accessibility, significant events, and other special considerations).
- Coordinating resource requesting utilizing WebEOC® Resource Manager.

It is always best to communicate verbally and receive a confirmation than to assume someone is using WebEOC® for an unofficial purpose.

E-Mail

E-mail is the redundant method of communication between the County and OA EOC and County departments, OA jurisdictions and supporting agencies due to the number of reporting jurisdictions and the quantity of documentation provided. Like cellular telephones, if other primary means of data or voice communications fail, then e-mail should be considered a sufficient back-up. Before using e-mail, however, personnel should confirm that the intended

recipient(s) has access to and is checking their e-mail. Critical information should never be sent over e-mail unless confirmation exists that the intended recipient is receiving the messages.

The County has established e-mail accounts for use specifically during County and OA EOC activations, EOCLiaison@OCSD.Org.

Fax Machines

Facsimile is utilized as a redundancy between the County and OA EOC and County departments and OA jurisdictions in addition to WebEOC® and e-mail. A variety of fax machines are available throughout the EOC.

Reddinet®

ReddiNet® is a flexible emergency medical communications system that uses radios, telephone and internet to transmit messages between hospitals, dispatch centers, EOCs, and public health officials. It is a concurrent network in both Orange and Los Angeles Counties.

ReddiNet® provides its network members with software tools for managing mass casualty incidents, assessing available healthcare system resources, participating in syndromic surveillance, communicating hospital diversion status and sending secure messages to multiple network facilities. It is used to produce Diversion History Reports, Assessment History Reports, MCI Reports, Bed Availability Reports, and Bed Census Reports in near real-time (depending on the frequency of census requests).

ReddiNet® service is available at the Orange County Sheriff's Department, Control One. The data component is viewable from any authorized computer in the County and OA EOC.

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Chapter Four: Plan Development and Maintenance

4.1 Revision and Plan Maintenance Process

The Unified County and OA EOP will be reviewed annually by the Orange County Emergency Management Organization (OCEMO) and Emergency Management Sub-Committee (EMC Sub-Committee) in conjunction with Orange County Sheriff's Department, Emergency Management Division (EMD) staff. Changes to improve the plan will be incorporated into the plan as they are identified based on deficiencies during drills, exercises or actual emergencies. EMD is responsible for making revisions to the plan that will enhance the conduct of response operations and will prepare, coordinate, publish any necessary changes to the plan. This plan will be approved by the County of Orange Emergency Management Council (EMC), Operational Area Executive Board, Cal OES and the County Board of Supervisors.

The County and OA Emergency Manager will ensure this plan, associated checklists and procedures are maintained according to the identified need. As needed, the OA Manager will be assisted in this responsibility by other County departments and OA jurisdictions.

Between regularly scheduled reviews and updates of this plan, County departments and OA jurisdictions may use the "Request for Modification of Unified County and OA Emergency Plan" form to request revision, addition, or deletion of specific information. The completed form should be sent to EMD where it will be kept on file until the regularly scheduled review. At the discretion of the County and OA Emergency Manager, the requested modification can be considered as an emergency request and acted on immediately. Emergency requests will still require approval of the EMC and Operational Area Executive Board¹.

4.2 Training and Exercise

The training and exercise requirements and programs serve to improve operational readiness by improving individual skills and by improving the emergency management system in the County of Orange and Orange County Operational Area. Training and exercises are essential at all levels of government to ensure emergency operations personnel are operationally ready. The objective is to train and educate public officials, emergency response personnel, and the public. Emergency management training is coordinated through the Orange County Sheriff's Department, Emergency Management Division (EMD). The EMD has a basic philosophy on training and exercises that lies at the foundation of County and OA EOC preparedness. Below are some of the philosophies that the EMD has institutionalized to ensure its readiness:

- Exercises are critical to a well-functioning County and OA EOC. People remember what they do, not what they read. Therefore, exercises are done frequently and in accordance with procedures.
- To ensure redundancy when people cannot respond, more people are trained.

- Repetition is a key element of emergency management training.
- County and OA EOC training is offered frequently throughout each year.
- Small events and activations are used to practice response procedures.
- Amateur radio operators and volunteers are engaged during trainings, exercises, and real life incidents as much as possible.
- A quick OA EOC refresher orientation is provided to responding staff as they arrive during an activation.
- A check on all equipment is required at least once a month to ensure phones, computers, and other equipment is operational.
- Staff alert and notification systems are regularly tested, including during odd times and days, to ensure efficient activation in an actual incident.

4.2.1 Training

The purpose of this section is to provide County departments and OA jurisdictions with the current training requirements for County employees and EOC responders and to provide guidance to the Operational Area jurisdictions for establishing their training requirements.

The Orange County Sheriff's Department, Emergency Management Division provides training for EOC responders on an ongoing basis and provides training and consultation to County departments and OA jurisdictions upon request.

All personnel who may respond to emergencies in the County and OA Emergency Operations Center (EOC), Department Operations Centers (DOCs) or at the field level must receive the appropriate SEMS, NIMS, EOC and other specialized training as required by SEMS regulations, NIMS policy and their specific position function, respectively. Individual departments and OA jurisdictions are responsible for identifying, coordinating, executing and documenting training for those personnel with response responsibilities.

Training classes and opportunities are ongoing to ensure all response personnel are trained in SEMS, NIMS and EOC functions. County and OA Emergency Operation Center functional training is scheduled and offered through the year, to accommodate personnel changes.

National Incident Management System (NIMS) Training

NIMS training, as identified in the National Incident Management System Training Program (September 2011) is available through FEMA's Independent Study program, visit FEMA's website, <http://training.fema.gov/IS/NIMS.aspx>, advanced courses are classroom based with class offering made available from a variety of sources. Training requirements for specialized areas of response (law, fire, EMS, etc.) are the responsibility of individual departments to identify, develop, execute and document.

NIMS represents a core set of doctrine, concepts, principles, terminology and organizational processes that enable effective, efficient and collaborative incident management across all emergency management and incident management response organizations and disciplines.

Homeland Security Presidential Directive-5, Management of Domestic Incidents and Homeland Security President Directive-8, National Preparedness, establishes NIMS, which include adoption and implementation of NIMS requirements by Federal, State, tribal and local agencies and is one of the conditions for receiving Federal preparedness assistance (through grants, contracts and other activities).

The following training requirements have been established for all County employees and County and OA Emergency Operations Center (EOC) responders¹¹: Each County department shall coordinate the following NIMS training at relevant levels for emergency personnel:

Mandatory Baseline training for all County Employees and Emergency Operations Center (EOC) Response Personnel:

Target Audience:

All County employees and personnel designated to response to the County and Operational Area EOC as Management, Policy Group, Section Chiefs, Branch Directors, Unit Leaders, Group Supervisors and Support Pool Staff.

ICS-100: Introduction to ICS

Instruction method: interactive web based course via FEMA's Independent Study program. This course provides training, resources and a basic understanding of the Incident Command System. This course describes the history, features and principles and organizational structure of ICS and the relationship between ICS and NIMS.

IS-700: NIMS, An Introduction

Instruction method: interactive web based course via FEMA's Independent Study program. This course introduces and provides an overview of the National Incident System, including the intent of NIMS, key concepts, principles and the purpose of the NIMS components, including:

- Preparedness
- Communications and information management
- Resource management
- Command and management

Additional mandatory training – Specific training based upon EOC and/or Emergency management role or expected role and jurisdiction risk and/or specific interest

Target Audience:

¹¹ NIMS Training Program, released September 2011

County employees designated as EOC Management, Policy Group, Section Chiefs:

IS-701: NIMS Multi-Agency Coordination System (MACS)

Instruction method: interactive web based course via FEMA's Independent Study program. This course introduces MACS as described in NIMS and shows how MACS are used to improve incident response. MACS consist of a combination of elements: personnel, procedures, protocols, business practices and communications integrated into a common system. This course describes the components of the MAC system, including:

- Defining multiagency coordination at the local, State and Federal level of governments.
- Identify typical priorities established between elements of the MAC system.
- Describes the process of acquiring and allocating resources required by the incident management personnel.
- Identify potential coordination and policy issues arising from an incident relative to the MAC system.

IS-706: Intrastate Mutual Aid System

Instruction method: interactive web based course via FEMA's Independent Study program. This course provides an introduction to NIMS Intrastate Mutual Aid and Assistance, including:

- The purpose, benefits and uses of mutual aid and assistance.
- How mutual aid and assistance agreements related to NIMS.
- Identify what information should be included in a mutual aid and assistance agreement.
- Process for developing mutual aid and assistance agreements.
- Identify the elements of a mutual aid and assistance operational plan.

IS-800: National Response Framework (NRF), An Introduction

Instruction method: interactive web based course via FEMA's Independent Study program. This course provides an introduction to the NRF, including:

- The purpose of the NRF.
- Explain the response doctrine established by the NRF.
- Roles and responsibilities of entities as specified in the NRF.
- Explain the actions that supports national response.

G191: ICS/EOC Interface

Instruction method: instructor led classroom 8 hours. This course reviews ICS and Emergency Operations Center (EOC) responsibilities and functions, identifying the roles of ICS and the EOC during emergency operations.

G775: EOC Management and Operations

Instruction method: instructor led classroom 12 hours. This course reviews the role, design and functions of EOC's and their relationships as components of a Multiagency Coordination System (MAC), including:

- How EOC operations relate to NIMS requirements.
- The relationship between the EOC and on-scene ICS structure.
- Identify staffing, information, systems and equipment needs of an EOC.

Mandatory for EOC and incident responders designated as Public Information Officers and Public Information Officer's Support Staff.

IS-702: NIMS Public Information Systems

Instruction method: interactive web based course via FEMA's Independent Study program. This course provides PIO's with basic information and tools needed to apply NIMS public information systems and protocols during incidents, including:

- Defining the NIMS Public Information System to include onsite operations, the Joint Information System (JIS) and the Joint Information Center (JIC) and how they relate to each other.
- JIS and JIC process of gathering, verifying, coordinating and disseminating information by PIO's.
- The role of each agency within the JIS to ensure the appropriate situational awareness information is communicated to the public.
- Identification of typical resources requirements for public information systems.

County and Operational Area Emergency Operations Center Training

Introduction to ICS, SEMS, NIMS & EOC Orientation

This course is mandatory for all County and OA EOC response personnel

This introductory course is intended to give participants a basic overview of the Incident Command System, Standardized Emergency Management System, National Incident Management System, and an orientation to the basic functions of the County Emergency Operations Center.

EOC Management Training

Course Overview: This course provides an overview of the Management Section including the specific roles and responsibilities of the Management Section, Policy Group and the Public Information Officer. Instruction will include decision making responsibilities such as how we proclaim a local emergency, how resources are requested and mobilized to support emergency response activities, and how to communicate public information during an emergency.

Operations Section: Evacuations, Sheltering, Law Enforcement, and Critical Infrastructure

Course Overview: This course is designed for departments and jurisdictions who may fill the Operation Section position within the EOC supporting field operations. Training will include an overview of the Operations Section, consequence management, conflict resolution, and training on specific emergency plans and annexes maintained by the Emergency Management Division. Training will include hands-on practice and training on position specific roles and responsibilities.

Planning and Intelligence Section: Action Planning, Information Analysis, Situational Awareness

Course Overview: This course is designed for departments and jurisdictions who may fill a Planning and Intelligence Section position within the EOC to maintain information management and situational analysis. Training will include an overview of the Planning and Intelligence Section, consequence management, EOC Action Planning process, and training on specific emergency plans and annexes maintained by the Emergency Management Division. Training will include hands-on practice and training on position specific roles and responsibilities.

Logistics & Finance Section Training

Course Overview: This course is designed for departments and jurisdictions who may fill a Logistics and/or Finance Section position within the EOC. Training will include an overview of the Logistics and Finance Section process, protocols, position checklists and hands-on practice.

Public Information Manager and PIO Support Staff Training

Course Overview: This course is designed for those who may fill a Public Information Manager or Public Information Officer Support Staff position within the EOC. Training will include an overview, processes, protocols, the Joint Information System Annex, and a hands-on drill.

WebEOC Orientation

Course Overview: WebEOC Orientation is a 2 hour class on the WebEOC Incident Management System used in County and OA Emergency Operations Centers. The class is a hands-on tutorial including login procedures, Activity Logs, and the Jurisdictional Information Management System.

EOC Support Pool (Messengers, Hotline, Documentation)

Course Overview: This course is designed for those who may be assigned as Messengers, Hotline, or Documentation staff in the EOC. Training will include the proper use of message forms, gathering of information from your assigned Section or Branch, and information flow in the EOC. There will be hands-on training in the form of an exercise and participants will practice on the hotline using WebEOC. Participants will learn how to appropriately answer

calls, identify and manage trends and rumors and will use information from callers to report information to the Public Information Manager. Training will be interactive and hands-on.

Situation Analysis Support Staff (SASS)

Prerequisite: Attendees must complete the WebEOC Orientation training

Course Overview: This course will focus on the Situation Analysis support within the EOC. Staff members assigned to this role are responsible for gathering, analyzing and vetting important information impacting County departments, special districts, school districts, cities and all other affected organizations and use of WebEOC and the Smart Board projection system used to plot information in the EOC. This course will include hands-on training on WebEOC Incident Management System.

4.2.2 Exercises

The best method for putting training to the test and for allowing staff to demonstrate and practice their skills in a near real life situation is through exercises. At the OA level, exercises are conducted at least annually and then as needed. Individual departments and OA jurisdictions may conduct exercises more frequently as they deem necessary. However, OA-level, multiagency, or regional exercises (which are the responsibility of the EMD) will be conducted at least annually to ensure OA staff is able to efficiently perform emergency functions, work together, and work with external organizations.

Exercises are conducted to maintain the readiness of operational procedures. Exercises provide personnel with an opportunity to become thoroughly familiar with relevant procedures, facilities, and systems which will actually be used in emergency situations.

Other forms of exercises include the following:

Seminars

Seminars are commonly employed to orient participants to or provide an overview of authorities, strategies, plans, policies, procedures, protocols, response resources, or concepts and ideas. Seminars provide a good starting point for jurisdictions that are developing or making major changes to their plans and procedures. They offer the following attributes:

- Low-stress environment employing a number of instruction techniques, such as lecture, multimedia presentations, panel discussions, case study discussions, expert testimony, and decision support tools
- Informal discussions led by a seminar leader
- Not constrained by real-time portrayal of events
- Effective with both small and large groups

Workshops

Workshops usually focus on having attendees develop a product. It is common to organize attendees into functional groupings aided by facilitators and to use breakout sessions. Final results are often presented and approved in a plenum session. In conjunction with exercise development, workshops are most useful in achieving specific aspects of exercise design, such as the following:

- Determining program or exercise objectives
- Developing exercise scenario and key events listings
- Determining evaluation elements and standards of performance

Tabletop Exercises (TTXs)

TTXs involve senior staff, elected or appointed officials, or other key staff in an informal setting to discuss simulated situations. This type of exercise is intended to stimulate discussion of various issues regarding a hypothetical situation. It can be used to assess plans, policies, and procedures, or to assess types of systems needed to guide the prevention, response to, and recovery from the defined event. TTXs can also be used to solve a specific problem. TTXs are typically aimed at facilitating the understanding of concepts, identifying strengths and shortfalls, and/or achieving a change in attitude. The effectiveness of TTXs is derived from the energetic involvement of participants and their assessment of recommended revisions to current policies, procedures, and plans. Attributes of a TTX may include the following:

- Practicing group problem solving
- Familiarizing senior officials
- Conducting a specific case study
- Examining personnel contingencies
- Testing group message interpretation
- Participating in information sharing
- Assessing interagency coordination
- Achieving limited or specific objectives

Drills

A drill is a coordinated, supervised activity usually employed to test a single specific operation or function in a single agency. Drills are commonly used to provide training on new equipment, develop or test new policies or procedures, or practice and maintain current skills. Typical attributes include:

- A narrow focus, measured against established standards
- Instant feedback
- Realistic environment

- Performance in isolation

Functional Exercises (FEs)

The FE is designed to test and evaluate individual capabilities, multiple functions or activities within a function, or interdependent groups of functions. It is generally focused on exercising the plans, policies, procedures, and personnel of the direction and control nodes of incident command and unified command. Generally, events are projected through an exercise scenario with event updates that drive activity at the management level. The movement of personnel and equipment is simulated. The objective of the FE is to execute specific plans and procedures and apply established policies, plans, and procedures under crisis conditions, within or by a particular function team(s). The FE simulates the reality of operations in a functional area by presenting complex and realistic problems requiring rapid and effective responses by trained personnel in a highly stressful environment. Attributes of an FE include:

- Evaluating functions
- Evaluating EOCs, headquarters, and staff
- Reinforcing established policies and procedures
- Measuring the adequacy of resources
- Examining inter-jurisdictional relationships

Full-Scale Exercises (FSEs)

In an FSE, response elements are required to mobilize and deploy to a designated site or locale in response to a simulated incident, generally for an extended period. Actual mobilization and movement of personnel and resources are required to demonstrate coordination and response capability. EOCs and field command posts are activated. The FSE is the largest, most costly, and most complex exercise type and may involve participation at the state, local, regional, and federal level. Although pre-scripted events may be used, the exercise is primarily driven by player actions and decisions. The FSE is used to evaluate the operational capabilities of systems, functional interfaces, and interactions during an extended period. It involves testing a major portion of operations plans and organizations under field conditions. Attributes of an FSE may include the following:

- Assessing organizational and individual performance
- Demonstrating inter-agency cooperation
- Allocating resources and personnel
- Assessing equipment capabilities
- Activating personnel and equipment locations
- Assessing inter-jurisdictional cooperation
- Exercising public information systems

- Testing communication systems and procedures
- Analyzing memoranda of understanding (MOUs), standard operating procedures (SOPs), plans, policies, and procedures

Chapter Five: Authorities and References

5.1 Authorities

The following legal documents provide the Orange County OA with the authority to conduct and support emergency operations. When dictated by the situation, additional ordinances or other emergency regulations may be enacted by OA authorities through emergency proclamations.

5.2 Federal Authorities and References

- Homeland Security Act of 2002, as amended
- Homeland Security Presidential Directive (HSPD) 5, Management of Domestic Incidents
- Homeland Security Presidential Directive and HSPD 8, National Preparedness
- United States Department of Homeland Security (USDHS), NIMS
- USDHS, National Response Framework (NRF)
- Presidential Directives 39 and 62 (directing primary terrorism investigative authority to U.S. Department of Justice and FBI, authority reference in Terrorism Annex)
- Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Public Law 93-288, as amended)
- Federal Civil Defense Act of 1950 (Public Law 920), as amended
 - Provides the basic elements to build an emergency management capability at the state and local levels. The City's EOP was developed in accordance with the State Local Emergency Planning Guide and the USDHS directives.
- Federal Disaster Relief Act of 1974 (Public Law 93-288) - Section 406 Minimum Standards for Public and Private Structures
- Public Law 84-99 (U.S. Army Corps of Engineers-Flood Fighting)
- NRT-1, Hazardous Materials Emergency Planning Guide and NRT-1A Plan Review Guide (Environmental Protection Agency's National Response Team)
- Disaster Mitigation Act of 2000
- ADA Best Practices Tool Kit for State and Local Governments, Chapter 7, Emergency Management under Title II of the ADA (2007), Addenda 1-3, and the Introduction to Appendices 1 and 2 (Attached as Exhibit 1); Titles II, III, and V of the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101-12103, 12131-12134, 12181-12188, and 12201-12213, as amended by the ADA Amendments Act of 2008
- Nondiscrimination on the Basis of Disability in State and Local Government Services, 28 C.F.R. pt. 35
- Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, 28 C.F.R. pt. 36

- The Americans with Disabilities Act Title II Technical Assistance Manual (1993) and Supplement (1994)
- Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. §§ 794, as amended
- Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Federal Emergency Management Agency, 44 C.F.R. pt. 16
- Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Justice, 28 C.F.R. pt. 39
- Nondiscrimination on the Basis of Handicap in Programs or Activities Receiving Federal Financial Assistance, 45 C.F.R. pt. 84 (Department of Health and Human Services)
- Nondiscrimination on the Basis of Handicap in Programs or Activities Receiving Federal Financial Assistance, 34 C.F.R. pt. 104 (Department of Education)
- Nondiscrimination Based on Handicap in Federally Assisted Programs and Activities of the Department of Housing and Urban Development, 24 C.F.R. pt. 8
- Title VIII of the Civil Rights Act of 1968 (“Fair Housing Act”), as amended, 42 U.S.C. §§ 3601-3631. Discriminatory Conduct Under the Fair Housing Act, 24 C.F.R. pt. 100
- The Architectural Barriers Act of 1968, as amended, 42 U.S.C. §§ 4151-4157 Construction and Alteration of Public Buildings, 41 C.F.R. pt. 101-19
- The Post-Katrina Emergency Management Reform Act, 6 U.S.C. § 761(d), as amended
- FEMA Comprehensive Preparedness Guide (CPG) 101, v2.0, November 2010

5.3 State Authorities and References

- California Disaster Assistance Act (Chapter 7.5 of Division 1 of Title 2 of the Government Code)
- California Emergency Management Mutual Aid (EMMA) Plan, October 2012
- California Emergency Resources Management Plan
- California Emergency Services Act, as amended January 2011 (Chapter 7 of Division 1 of Title 2 of the Government Code) (Government Code 8660 – Good Samaritan Act)
 - Provides the basic authorities for conducting emergency operations following a proclamation of Local Emergency, State of Emergency, or State of War Emergency by the Governor and appropriate local authorities, consistent with the provisions of the Act.
 - Section 8558: Defines a Local Emergency as the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within territorial limits. It further defines a State of Emergency or State of War Emergency as incidents of such magnitude as to require or appear to require the combined resources of a Mutual Aid region(s) to manage the emergency.

- Section 8617: Provides that in emergency situations, which do not require or result in proclaimed emergencies, mutual aid may be provided. It is under this section that the Statewide Fire and Law Enforcement Mutual Aid plans are utilized, as needed, on a day-to-day basis.
 - Section 8630: States that a Local Emergency may be proclaimed only by the governing body or an official so designated by ordinance.
 - Section 8610, "Creation by Ordinance; Plan Development, cities and counties create disaster councils by ordinance. A disaster council shall develop plans for meeting any condition constituting a Local Emergency or State of Emergency."
- California Fire Service and Rescue Emergency Mutual Aid Plan, 2010
- California Government Code 8607 (a)
- California Hazardous Materials Incident Contingency Plan
- California Health and Safety Code, Division 20: Chapter 6.5, Sections 25115 and 25117, Chapter 6.95, Sections 25500 et seq., Chapter 7, Sections 25600 through 25610, dealing with hazardous materials
- California Law Enforcement Mutual Aid Plan, 2005
- California Law Enforcement Mutual Aid Plan, 2014
- California Disaster and Civil Defense Master Mutual Aid Agreement, 1950
- California Oil Spill Contingency Plan
- California State Emergency Plan, 2009
 - Promulgated by the Governor, provides overall statewide authorities and responsibilities, and describes the functions and operations of government at all levels during extraordinary emergencies, including wartime. Section 8568 of the Act states, in part, that "the State Emergency Plan shall be in effect in each political subdivision of the State, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." Local, County, and OA Emergency Plans are, therefore, considered to be extensions of the California Emergency Plan.
- California State Hazard Mitigation Plan, 2013
- California Terrorism Response Plan
- Disaster Assistance Procedure Manual (Cal OES)
- Emergency Management Assistance Compact (EMAC), 2005
- Government Code, Title I, Division 4, Chapter 8, Sections 3100-3109
 - "all public employees are hereby declared to be disaster service workers subject to such disaster activities as may be assigned to them by their superior or by law"
 - Declares all public employees to be disaster service workers; defines disaster service worker; defines public employees; and describes Loyalty Oath requirements.
- OES Earthquake Recovery Manual for Local Governments (1993)

- Operational Area Satellite Information System (OASIS) Guidelines (1993)
- Government Code, Title II, Division 7, Chapter 7. California Emergency Services Act, Article 12 State of War Emergency, Sections 8620-8624
 - Orders and Regulations Promulgated by the Governor to Take Effect upon the Existence of a State of War Emergency
- Government Code, Title II, Division 7, Chapter 7. California Emergency Services Act, Article 13. State of Emergency, Sections 8625-8629
 - Orders and Regulations which may be Selectively Promulgated by the Governor during a State of Emergency
- Proclaiming a Local Emergency Guidance
- Standardized Emergency Management System (SEMS) Guidelines
- Standardized Emergency Management System (SEMS) Regulations (Chapter 1 of Division 2 of Title 19 of the California Code of Regulations 2400-2450) and (Government Code Section 8607(a))
- State of California Hazardous Materials Plan
- Water Code, Division 1, Chapter 2, Article I, Section 128 (California Department of Water Resources – Flood Fighting)

5.4 County Authorities and References

- County of Orange adoption of Orange County Public Works Mutual Aid Plan
- County of Orange Resolution adopting the California Master Mutual Aid Agreement, November 28, 1950
- County of Orange Resolution No. 12-036, adopting the amended membership of the Emergency Management Council and designation of the Director of Emergency Services, dated April 17, 2012
- Orange County Board of Supervisors Ordinance 95-870 creating the Orange County OA
- Orange County Board of Supervisors Resolution No. 05-144, adopting the National Incident Management System, dated June 7, 2005
- Orange County Codified Ordinance, Title 3, Division 1 (Emergency Services)
- Orange County Fire Service Operational Area Mutual Aid Plan, December 1, 1997
- Orange County Law Enforcement Mutual Aid Contract, October 1999
- Orange County Operational Area Agreement
 - OA Agreement, Section H (2): The OA Manager [Orange County Emergency/Operational Area Manager, (hereafter referred to as OA Manager)] has the responsibility for directing the daily coordination and cooperation between OA staff, the OA Emergency Response Organization, and Executive Board Subcommittees including OCEDO. The OA Manager is also responsible for

maintaining the OA EOC in a constant state of readiness as needed to support OA EOC operations during times of emergency.

- OA Agreement, Section G(4)d: States that in the event of actual or threatened emergency the OAC shall request the County Board of Supervisors to proclaim a Local Emergency if the Board is in session, or issue such proclamation if the Board is not in session, subject to confirmation by the Board within seven days. Such proclamation shall be reviewed by the Board of Supervisors every 30 days (County Ordinance No. 3915, Section 3-1-6, Board of Supervisors Resolution 08-001).
- Orange County Operational Area Emergency Alert System (EAS) Plan, Revision 8, dated May 2010
- San Onofre Nuclear Generating Station Emergency Plan (SONGS), July 2013

5.5 Relationship to Other Plans/References

This County and OA EOP is the primary document used by the County and OA to describe the conduct of emergency management activities from the County and OA perspective. The EOP provides a conceptual framework for all other emergency management planning of OA, but not necessarily of OA jurisdictions.

The EOP contributes to the emergency management programs of County departments and OA jurisdictions by describing how activities will be conducted within County of Orange and as the Operational Area, the limits and how support will be requested and coordinated—in the form of mutual aid and other resources—by County departments and OA jurisdictions and supporting agencies. When emergencies or disasters necessitate resource support from regional, state, federal, international, private, or non-profit sources outside the immediate control of County and/or OA, then this EOP will serve as the primary guide to coordinating those resources at the next SEMS level.

At the same time, this EOP is not a standalone document. Its purpose is to support the emergency plans and procedures of the County of Orange and OA jurisdictions. This plan is designed to be flexible enough that it can adapt to changing response environments and to the needs of supporting and requesting organizations. Some of the plans and guidelines that this EOP will frequently support/complement include:

- County of Orange and Operational Area San Onofre Nuclear Generating Station (SONGS) Emergency Plan
- County of Orange and Operational Area Weapons of Mass Destruction (WMD) Annex
- County of Orange and Operational Area Aircraft Accident Annex
- County of Orange and Operational Area Tsunami Annex
- County of Orange and Operational Area Mass Care and Shelter Annex
- County of Orange and Operational Area Dam and Reservoir Failure Annex

- County of Orange and Operational Area Medical Countermeasures (MCM) Annex
- County of Orange and Operational Area Disease Outbreak Response Annex (DORA)
- County of Orange and Operational Area Rail Emergency Response Annex
- County of Orange and Operational Area Excessive Heat Annex
- County of Orange and Operational Area Joint Information System Annex
- County of Orange and Operational Area Rail Emergency Response Annex
- County of Orange and Operational Area Power Outage Annex
- County of Orange and Operational Area Mass Evacuation Annex
- County of Orange and Operational Area Recovery Annex
- County of Orange Hazard Mitigation Plan
- County of Orange Debris Flow Annex
- Orange County Cities Readiness Initiative Plan
- County and Operational Area EOP Position Checklists
- County of Orange Departments Emergency Plans and Procedures
- Operational Area Jurisdictions Emergency Plans and Procedures
- Orange County Fire Authority's Hazardous Materials Area Plans
- Orange County Law Enforcement Mutual Aid
- Orange County Mass Casualty Incident Plan
- Orange County Tactical Interoperability Communications Plan
- Orange County Fire Service Operational Area Mutual Aid Plan
- California State Emergency Plan
- California Disaster Assistance Act
- California Terrorism Response Plan
- California Emergency Resources Management Plan
- California Emergency Management Mutual Aid (EMMA) Plan
- California Master Mutual Aid Agreement
- California Law Enforcement Mutual Aid Plan
- California Fire and Rescue Operations Plan
- National Protection Framework
- National Prevention Framework
- National Response Framework
- National Mitigation Framework
- National Disaster Recovery Framework
- FEMA Public Assistance Program and Policy Guide

Standard Operating Procedures and Guidelines (SOPs or SOGs)

Departments, agencies, and organizations that have responsibilities in this plan have prepared organizational and/or position-specific SOPs or SOGs detailing personnel assignments, policies, notification rosters, resource lists, and specific steps for accomplishing the functions assigned in this EOP. County and OA emergency response personnel should be acquainted with these SOPs or SOGs, and receive periodic training on the policies and procedures contained within the SOPs or SOGs in support of this County and OA EOP.

Supporting plans, operating procedures, and checklists developed in concert with this plan will be reviewed periodically by the EMC Sub-Committee under the direction of the Emergency Management Council and OCEDO under the direction of the OA Executive Board.