

**READY OR NOT? AN ASSESSMENT OF THE
CALIFORNIA SEMS EMERGENCY MANAGEMENT PROGRAM**

by

KAREN L. SMITH

A dissertation submitted to the Graduate Faculty in Political Science in partial
fulfillment of the requirements for the degree of Doctor of Philosophy,
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Abstract**READY OR NOT? AN ASSESSMENT OF THE
CALIFORNIA SEMS EMERGENCY MANAGEMENT PROGRAM****by****Karen L. Smith****Advisor: Professor Thomas Halper**

This dissertation examines and assesses the implementation of California's emergency management program, the *Standardized Emergency Management System* (SEMS). California has experienced a wide range of emergency situations over the decades leading the state to develop and refine its emergency management programs several times.

The current program, SEMS, was enacted in 1996 and is acclaimed for both standardization and flexibility across jurisdictions and agencies. Effective 2006 the Federal Emergency Management Agency mandated that all state and local governments must adopt principles of the SEMS program known nationally as the National Incident Management System (NIMS) in order to be eligible for federal reimbursement funds from a national disaster.

Drawing from multi-case study primary and secondary source material, the dissertation focuses on three analytical variables--organizational capacity, incentives, and learning--with a view to providing fresh insights into implementation theory.

DEDICATION

To my mother, father, and Pamela

ACKNOWLEDGEMENT

One of the real pleasures of this process was the ability to work with exceptional individuals. My academic advisor Professor Thomas Halper helped shape this research with his questions and perspectives. He also impacted my development as a professional with his sensitivity to a number of issues which naturally develop over the course of a project such as this. From Professor Halper I learned much more than I had expected, and I am enormously grateful for all those lessons. I hope I will be half the educator he is when it is my turn.

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CHAPTER 1

INTRODUCTION

The Research Problem

What started as a small brush fire in rural northern California culminated as one of the worst urban disasters in U.S. history. It also served as the catalyst to change California's emergency management program and ultimately the federal emergency management program as well.

On October 20, 1991, unusually strong winds and hot weather combined to fan a small fire ignited a day earlier in Oakland's dry terrain. As the uncontrolled fire ravaged the affluent hillsides, local officials quickly called for outside help, and nearby San Francisco ladder companies promptly responded. Frustration replaced optimism when firefighters confronted an unimagined and disconcerting obstacle--San Francisco's hoses did not fit Oakland's hydrants!

The foothills were destroyed, and statistics reveal a portion of the devastation: 25 deaths; 150 injuries; 2,843

single family homes destroyed; 433 apartments lost; 3,469 living units ruined; 1,520 acres burned; a total of \$2 billion in fire losses.

One home that was destroyed by the Oakland Hills 1991 East Bay Fire created the impetus to alter the state's emergency management policy. The home belonged to California Senator Nicholas Petris, one of the state's most influential legislators. When the California Senate met in January 1992, three months after the fire, Senator Petris introduced Senate Bill 1841. The measure passed within the year and became the 1992 California Emergency Services Act. It directed the state Office of Emergency Services (OES) to establish by regulation the state's Standardized Emergency Management System (SEMS).

The next step in SEMS' formation involved enlisting a statewide advisory committee to direct the development of SEMS and its regulations. Appointed by the state Office of Emergency Services, members of the SEMS Advisory Committee largely reflected the leadership of government agencies anticipated to utilize SEMS. Instrumental in creating SEMS' regulations, the committee simultaneously developed a formalized process for the long-term maintenance and operation of SEMS. Incorporated into the SEMS regulations, this ongoing policy review process is known as SEMS Maintenance System.

The end product created by the SEMS Advisory Committee was a sweeping new statewide policy for emergency response. The program, *California's Standardized Emergency Management System* (SEMS), mandated standardization for emergency management and was designed to coordinate state and local response efforts within California. The aspects of emergency management that the measure sought to unify include terminology, procedures, and response efforts for disasters involving multiple agencies and jurisdictions.

Wreckage from the East Bay Fire was not due to lack of manpower and resources. Government inquiries determined that aside from the geographic setting and forces of nature, the clearest problems pointed to coordination lapses during preparation efforts (Perry 2002). This shortcoming is not confined to California, and seems to continue to plague other states, as evidenced by response efforts to Hurricane Katrina.

While California officials reviewed the 1991 East Bay Fire in Oakland Hills, Congress was investigating the unsatisfactory emergency response to Florida's 1992 Hurricane Andrew. At congressional request, the National Academy of Public Administration (NAPA) examined shared governance arrangements for emergency management. In its report, NAPA underscored coordination gaps among fragmented agencies and found intergovernmental units with overlapping and competing

jurisdictions. In the view of its authors, however, the most egregious shortcomings derived from federalism. Issues of authority, responsibility, fragmentation, and communication revealed unanswered questions.

In the United States, emergency management programs historically have been the responsibility of local governments. The first responders in emergency situations are overwhelmingly from local government emergency services' units (police, fire, and emergency medical personnel); however, the federal government and state governments also have roles in local emergency programs, as do special districts (i.e., fire districts or water districts).

Increasingly, the roles of special districts have become pivotal to the process--particularly in California, where special districts proliferate. Special districts are a separate type of local structure of government having defined geographic boundaries of jurisdiction. They are run by either elected or appointed boards and provide specific services or facilities not provided by other governing jurisdictions. Typically, services from a special district might include pest abatement, water, or fire protection. The more than 3,400 special districts in California are generally funded either by user fees or by property taxes.

One such special district is the Rancho Santa Fe Fire District. Located within San Diego county, this fire district played an active role in the 2003 Cedar Fire and is included as part of the case study research for this dissertation.

Issues of complexity may intensify when special districts are involved in providing fire protection. Regional coordination of fire protection assumes increased significance for areas with numerous independent fire districts. The implications of this structure will be discussed in the case studies in Chapters 6 and 7.

However, special districts are not the only institutional structure providing challenges to delivering emergency services. Similarly, the tasks associated with non-governmental organizations and private firms are critical in emergency planning efforts. These institutions include hospitals, utilities, insurance companies, developers, private contractors (e.g. aircraft, etc.), community shelters, American Red Cross, and citizen volunteer groups.

Emergency-related responsibilities for these disparate entities have become progressively more intertwined with all levels of government. For instance, victims of a large-scale emergency declared by the President as a "Federal Disaster" become eligible for relief funds managed by the Federal

Emergency Management Agency (FEMA).¹ Often times, these individuals are housed in shelters after their homes have been damaged; and displacement from their homes may lead to interaction with the Red Cross, a community shelter, their insurance companies, local and state government officials, and then FEMA.

Contemporary major disasters are more common and more devastating than ever before in American history. In the year 2002, President George W. Bush declared sixty-eight federal disasters, while President George Bush declared sixty-eight federal disasters over the four-year term of his presidency from 1989 until 1993. President Clinton declared federal disasters in twenty-eight cases during just the first two months of 1996 (Carroll 2001:466). Between 1993 and 1997, he declared 200 federal disasters in the United States (FEMA).

Just as the number of disasters has increased, so has their intensity and devastation. The hazards of concentrated growth in American cities and expanded development into wilderness areas are compounded by flawed infrastructures to enhance the potential for even more extensive damage from future crises.

For most of the U.S. history, emergency management has been without widespread advocates. Disasters are rare in most

¹ President Jimmy Carter created FEMA in 1979 to manage the activities of federal agencies involved in responding to national disasters.

communities, so even today budgetary choices often favor more visible programs with organized constituencies. Moreover, well-financed growth advocates regularly impede local efforts to limit land-use and building patterns. The result is often larger dwellings on smaller land plots, increased density, and minimal infrastructure expansion or improvement.

In California, population growth and rising real estate costs intensify the intersecting issues of growth and wildland fires. Housing prices in existing communities have become prohibitive for many. To respond to housing demand, new residential development has pushed farther away from urban areas, often into wildland areas. The result is that southern California now has the most residents in the country living in fire prone wildland/urban interface (WUI) areas (2003 California Governor's Blue Ribbon Fire Commission). Compounding the danger, these communities generally have limited roadways available as means of ingress and egress.

With four different forests surrounding southern California, the region is fraught with fire hazards, especially at the end of dry summer months. This is the period that most often produces the foehn winds or Santa Ana winds--an atmospheric condition characterized by extremely low humidity coupled with hot, dry winds blowing into southern California basins from the eastern high deserts and

the mountain ranges. Major blazes are easily sparked under these conditions; and fires may originate from disparate sources--a careless camper's fire, a tossed cigarette, lightning...and of course, arson. The cause of most wildland fires is directly attributed to human activity, which is also the situation for the case studies selected in this research. Whatever the cause, results may be catastrophic once a wildland fire takes hold.

While most communities--and even most states--in the country have scant experience responding to large-scale emergencies, some have lengthy records of diverse emergencies. California is in the latter category. Between 1989 and 1998, California "experienced a series of extraordinarily large, complex and diverse disasters. During this period every California county received at least one Federal and state Disaster Declaration, and many counties received multiple declarations" (*Governor's Office of Emergency Services: Origins and Development A Chronology 1917-1999*. June 1999. Gray Davis, Governor, state of California).

California's Standardized Emergency Management System is designed to provide a coordinated, uniform, and flexible response protocol for all emergency situations involving more than one government agency or jurisdiction. In addition to

offering standardization procedures, the plan is intended to be adaptive to both man-made and natural disasters. The policy that became effective December 1996 mandated all state and local government agencies to utilize SEMS' procedures when responding to emergencies involving more than one government agency or jurisdiction. Adherence to the SEMS' guidelines is a requirement for agencies if applying for reimbursement of state funds or federal emergency reimbursement funds that are first delivered to the state.

Not every state is organized to this level of coordination for emergency management. California, long recognized for its leadership and innovative approach to emergency management, routinely provides officials to offer response assistance for a number of major disasters (both man-made and natural) in the United States (for instance, in Florida, Louisiana, Mississippi, New York City, and Oklahoma City), as well as abroad (in countries including Japan, Spain, Thailand, Turkey, and the United Kingdom).

The tragedies involved with response efforts to the 2005 hurricanes Katrina and Rita demonstrate the need for well coordinated and flexible emergency plans. Local, state, national and international leaders examined their governmental response plans subsequent to the 2005

hurricanes; and once again attention turned to California and the SEMS program.

Currently, the U.S. Department of Homeland Security (DHS) has adopted a new national model for emergency response predicated upon the SEMS' protocol. The national plan, known as NIMS (National Incident Management System), is modeled after the SEMS' principles of flexibility, adaptability, and standardization. NIMS required state and local jurisdictions to adopt these principles by September 30, 2006, in order to be eligible for FEMA reimbursement funds following a National Disaster. (Typically, FEMA directs funds for these programs to the state government, which then disperses monies to local jurisdictions.) NIMS' compliance is also mandated as an eligibility requirement for local and state governments seeking FEMA grants. FEMA grants are available to state and local governments for developing emergency plans and equipment, for public assistance subsequent to disasters, and for hazard mitigation activities and homeland security. The agency also provides reimbursement funds to states to pay local government overtime costs after a national disaster.

Ironically, as the federal government moves to replicate SEMS, what has not been examined is the effectiveness of the Standardized Emergency Management System. After-action reports and internal agency reviews of specific tactical

activities during an emergency incident are the norm for emergency management in California. These reports have been useful tools in reviewing aspects of response activities for specific emergency situations on a micro-level. Still, they do not go the next step, and provide an evaluation of the effectiveness of SEMS in general.

Findings from studies of previous disasters have paved the way for modifications to California's policy. For instance, after-action reports from recent wildfires have highlighted the importance of sufficient brush clearance around structures located in high fire risk areas. Thus, in 2005 a new California law mandated a 100-foot brush clearance zone in high risk fire areas. While after-action reports and agency reviews are critical to emergency management, so is a review of the effectiveness of SEMS as a management concept for responding to emergencies. This has not yet been undertaken.

Research Objectives

This research examines the implementation of California's emergency management program, SEMS. To accomplish this, two different wildfires were studied. These fires--both located in southern California counties and declared national disasters--occurred ten years apart. The first wildfire known as the 1993 Southern California Fires

took place three years prior to SEMS' enactment in December 1996. The fires occurring one decade later were dubbed the 2003 Southland Fires--seven years after each county in the state adopted SEMS' guidelines for emergency response.

As previously stated, SEMS is utilized for all types of emergencies within the state involving multiple agencies or jurisdictions. To make this study feasible and meaningful--and bearing in mind that the regularity of firestorms in California provides numerous opportunities for research--it was decided to confine the research to two sufficiently representative firestorms, one occurring prior to SEMS' passage and the other taking place subsequent to the enactment of SEMS.

The latter wildfires also hold the dubious distinction of the worst natural disaster in the state's history. In both cases, key precepts of the policy implementation process--mutual aid and incident command--evolving from SEMS' creation and fire services' practices, provide consistent yardsticks for systematic comparative analysis.

Within this framework, the basic purpose of this dissertation is to: (1) examine implementation of California's Standardized Emergency Management System (SEMS), and (2) identify critical factors and processes that impinged

upon or contributed to the successful implementation of emergency policies.

Dissertation Structure and What Will Be Studied

To accomplish these objectives, the study investigates characteristics of policy implementation within three clusters of analytical categories: organizational capacity, incentives, and learning. Organizational capacity, incentives, and learning--which are discussed in subsequent chapters--are widely recognized in the academic literature, and initially defined below:

Organizational capacity refers to the quality, capacity, and adaptability of disaster preparedness. Aspects investigated refer to structural arrangements consisting of the following:

Systemic characteristics embody the utilization of communications procedures and equipment, the development of operational planning, the process involved in determining the latest equipment and technology, as well as the types and amounts of training exercises and field preparation involved.

Shared governance reflects both formalized agreements and the spirit of cooperation demonstrated among different agencies, jurisdictions and private actors. These aspects are examined through the usage of incident command systems, the

roles of private actors in the planning process, and the collaborative efforts and coordination among public agencies and private actors.

Adaptation concentrates on the type and amount of flexibility exhibited. Of particular interest is the issue of interagency and cross-jurisdictional standardization for training, staffing, equipment, and terminology, as SEMS seeks to standardize emergency procedures.

Incentives refer to methods and activities that encourage SEMS' acceptance. Incentives impact a variety of actors and institutions at all levels of sub-state governments as well as private entities, and are organized along categories of financial, administrative, and social incentives. Examples include:

Financial incentives include funding for program development and training or changes in funding flows; local government reimbursement for overtime costs of emergency personnel; and meeting eligibility requirements for federal and state grants for equipment, training, and disaster reimbursement;

Administrative incentives encompass establishing a political record for responding to constituency needs for local problems; strengthening agreements with government

entities; and providing opportunity to extend institutional competences, influences, and roles.

Social incentives consist of professional peer relationships that may be enhanced; opportunities to increase personal areas of knowledge or expertise, as well as platforms to gain acceptance and perceived value of participation in new policies and practices.

Learning means the adoption and incorporation of lessons from the policy-making level, institutional learning reflecting organizational knowledge, and bureaucratic learning and knowledge transfer from the accumulated learning of individuals. The experience gained may lead to policy changes over time.

Hypothesis

This study will argue that successful implementation, meaning a process leading to what Ripley and Franklin aptly refer to as "desired performance and input" (1982. p. 200), requires a flexible program incorporating organizational capacity, incentives, and accumulated learning among the actors and organizations involved. The dependent variable is successful implementation and the independent variables are organizational capacity, incentives, and learning.

Significance of the Study

This study offers input on several important public policy issues. Contributions are made to the political science literature on policy implementation, by underscoring the relationships of organizational capacity, incentives, and learning to successful implementation.

Additionally, information from this study avails local and state emergency management officials with concepts and considerations for strengthening the implementation of SEMS-like policies.

Finally, as stated previously in this section, effective September 30, 2006, the Federal Emergency Management Administration (FEMA) required all local and state emergency services agencies within the United States to be trained in procedures for the National Incident Command System (NIMS) in order to receive federal emergency grant funds and reimbursement funds subsequent to disasters. The newly implemented NIMS guidelines were modeled closely after principles of California's SEMS.

Thus, the research in this study provides a timely examination of the policy that is now modeled for utilization by emergency services organizations across the country.

CHAPTER 2

EMERGENCY MANAGEMENT IMPLEMENTATION: A REVIEW OF THE LITERATURE

Theoretical Foundation

The public policy and implementation literature provides the foundation for this study.

Emergency Management

At the heart of effective government emergency management plans are approaches and procedures aimed to minimize damage and ensure the continuity of government services. In emergency management parlance, these procedures take the form of disaster preparedness, response, mitigation, and recovery (Drabek and Hoetmer 1991, xxi). Emergency management principles support the notion that the activities included in preparedness, response, mitigation, and recovery are fundamentally the same whether the emergency be a "natural" or "man made" disaster.

Man-made disasters refer to those catastrophic events whose causes can be directly attributable to individual actions. Examples of these types of events include

technological disasters such as were predicted for Y2k; large-scale accidents including the Three-Mile Island incident; civil strife as exemplified during the Los Angeles Watts Riots; and organized, directed attacks as experienced on September 11, 2001.

What are becoming increasingly more difficult to define are those situations which historically have been referred to as natural disasters. The terms floods, earthquakes, hurricanes, fires, and tornadoes have previously been synonymous with natural disasters caused by Mother Nature. The direct line to Mother Nature is no longer so clearly drawn, as the causes for these disasters are more often traced to the conscious decisions made by individuals.

Today's devastations from earthquakes, hurricanes, floods, and fires are frequently linked to building patterns that encroach on vulnerable land masses--areas known to be seismic faults, wetlands, barrier islands, forests or canyons (Duane). Beyond the personal and commercial devastations experienced, "We steadily increase not only the physical threat to those inhabiting such areas, but the fiscal threat to the American taxpayers as a whole" (Comfort, 6).

Just as the causes of disasters have become blurred; so, too, has the subject of emergency management remained understudied in much of the public policy literature. The field is

characterized by the scarcity of overarching frameworks with which to consider research. Only a few scholars offer perspectives on narrow aspects of the subject, and these views will be discussed in greater detail within this chapter.

Implementation

The prevailing view for some time was that implementation refers to the delivery of a program or the execution of a policy. According to this view, implementation is the last stage in a series of distinct, sequential stages.

Refining Harold Lasswell's early work (1956) stressing "knowledge of the policy process", Garry Brewer (1974) identified these "stages" as: initiation, estimation, selection, implementation, evaluation, and termination. This perspective provided a previously absent methodology for analyzing the policy process. By emphasizing the sequential nature of policymaking, this approach highlighted a disjointed process of separated functional activities. Thus, subsequent research--including emergency management studies--concentrated on one specific stage.

Modifying the framework for policy assessment has been a slow process, but its need soon became apparent with the proliferation of new government programs ushered in during The Great Society. Most scholars credit Pressman and Wildavsky (1973) with focusing attention on implementation in

their classic review of Oakland's Employment Development Agency. The authors stressed--as did Lindblom in "The Science of Muddling Through" (1959, 79-88)--the notion that implementation is continuous and integral to each "stage" of policy making.

Literature Review

For implementation, the Pressman-Wildavsky insights (1973) are points on which not all scholars agree. Their argument was that implementation should not be considered as a sequence of discrete stages separate from the rest of the policymaking process, but as an ongoing process of adjustment and problem redefinition, reflecting lessons learned from implementation. It may be tempting to side-step the whole fray--except the thrust of this scholarly debate turns out to be central to explaining how policy goals are converted into action, thereby determining a central element for examination.

Nonetheless, expansion of the considerations was limited by the lack of a theoretical foundation. Van Meter and Van Horn (1975) attempted to fill the gap with a theoretical approach to organizational change for inter-relationships that extend in a top-down approach. They argue, "implementation will be most successful where only marginal change is required and goal consensus is high" (p. 461).

However, long before questions were raised about policy stages, Wilson was first to assert that public administration does not occur as a result of government plans, and that experts were required to enact "the detailed execution of such plans..." (Wilson, 1887, p. 197). How government's broad plans are executed is at the core of this study.

One of the most germane questions for the implementation of emergency management policies involves issues that emanate from federalism. In an era when the federal government increasingly mandates state policies, emergency management is one of the policy areas in which state and local governments have been on their own to shape programs. Local governments have largely had the responsibility to devise policies for emergencies ranging from a local fire or flood to the catastrophic events caused by large-scale natural disasters or terrorist attacks. Indeed, today's local police or fire officers may respond to a minor call for local assistance one day; and the next day participate in for emergency situations in which they assume roles more akin to military personnel.

In his analysis of the Clean Air Act and how it was implemented by the federal government and the states, Dan Wood argues that "State agency outputs varied with a multiplicity of forces, including top-down, horizontal and bottom-up," concluding that most implementation of the policy

by state agencies was a "rational response to administrative mandates and bureaucratic maintenance incentives" (Wood, 1992, p. 59).

For emergency management, bureaucrats are most visible as first responders (police, fire, and emergency medical personnel), but their roles are evidenced throughout policymaking.

A Framework for Considering Organizational Capacity, Incentives, and Learning

Still, policy design is not the same as outcome or delivery, and analysts generated a wave of research investigating civil servants' roles in shaping policy. Michael Lipsky (1980) argued that policy is molded by civil servants in contact with John Q. Citizen. In *Street Level Bureaucracy*, Lipsky contends policy evolves from its stated intent as implemented by "street level bureaucrats," such as police on the street. Citing civil servants' frustrations and constraints, Lipsky paints a grim picture of their roles. Richard Elmore's 1982 study also looks at who controls implementation. The author's "backward mapping" concept takes issue with top-down approaches that stress achieving top management's goals.

The top-down model is characterized by a "presumed division between politics and administration" (Schroeder,

2001) and a hierarchical approach to problem solving. Elmore claims it is more salient to emphasize problem-solving abilities, communications, coordination, and relationships. Thus, backward mapping starts at the end of the process--or an action's lowest level--and provides a conditional standard for successful implementation.

At the crux of both the top-down and bottom-up approaches to problem solving is a focus on one specific end of the spectrum to provide the answers. For emergency management to employ a bottom-up approach would assume that local actors are best suited to exercise discretion. Conversely, the top-down approach implies that the federal government can best determine answers to local emergency management issues, and both models emphasize a one-sided approach.

Contemporary issues for emergency management center on coordinating the activities of a number of private and public actors, sharing the resources of these disparate groups, and developing processes for exchanging information and ideas while recognizing changing expectations due to technological innovations. Louise Comfort discusses the extraordinary demands made of emergency management personnel during disaster situations and the need for efficient networks of communication, information, and information sharing

(*Integrating Organizational Action in Emergency Management: Strategies for Change*. 1985).

Similarly, in *Evolution of Emergency Management*, Schroeder et al., concentrate on the need for organized collaborations prior to an emergency as well as the role of coordinated actions during an emergency incident. The authors term these activities the "network perspective." A "central" actor is utilized as a catalyst, and in this view the "central agency no longer holds a superior, hegemonic position," although it is considered on at least equal footing with other relevant entities and has the role of convening, synthesizing, and exerting leadership in the public interest (p. 387). Within this approach, implementation involves interactions among key stakeholders to share objectives and resources. Implementation failures are generally traced to one of two causes. The first results from barriers to collective action, and the second to a lack of incentive to cooperate. My research is predicated on the assumption that policymaking is an ongoing, integrated holistic process, and relies on a network perspective to assess SEMS' implementation.

Organizational capacity

Barriers, adaptability, and shared governance

Because public emergencies occur without regard to geographic boundaries or bureaucratic jurisdictions, emergency polices must penetrate some of the most formidable barriers ever constructed--those of bureaucratic agencies in different levels, branches, and locations of government. Flexibility and adaptability are inherent in frameworks considered by scholars, such as Peters (2001) and Kettl (2000), in focusing on coordination and the role of networks for change. They are also central to SEMS' delivery.

However, it is one thing to empower actors in a specific agency with the authority to make on-the-spot decisions and improvisations; it is another for actors in a variety of agencies at all government levels to be similarly endowed--and then expect those aggregated actions to successfully blend in emergencies. In effect, this is what SEMS aims to accomplish.

In this context, Thomas Birkland (2001) argues that federalism "fosters state innovation and induces states to improve their capacity to address problems the federal government does not." In fact, Birkland cites California as a policy innovator for earthquake damage reduction, and argues that state innovations may be "adopted and adapted by other states" (p. 41).

It remains an open question whether frequency of emergency responses necessarily equates to effectiveness. In *Organizing, Role Enactment, and Disaster*, Gary Kreps et al., contend that both preparedness and experience "can make a difference in the aftermath of the unlikely" (p. 63). The authors posit that most preparedness efforts are not adequate, generally due to the "infrequency of resources and constituencies to promote hazard awareness and mitigation, and considerable uncertainty about how much of either is actually needed...It is possible that too much of either [preparedness and experience] breeds false confidence" (*ibid*).

The questions that plague public officials surrounding emergency preparedness are these: how much is enough preparation, and how much preparation is too much. With the breadth of demands for services required by constituents today, it is a difficult choice to commit scarce resources for plans which, hopefully, will not be needed. In the *Handbook of Crisis and Emergency Management* (Farazmand, p. 659), Waugh sums up the debate this way, "one of the truisms of emergency management is that recovery programs enjoy the public support that mitigation and preparedness programs do not."

A range of actors offer input on the debate. Political leaders, government officials, and members of private industry, as well as the general public may all provide information and opinions in the various arenas available to each. These arenas include legislative hearings, town hall forums, professional conferences, meetings and written communications. Next, this information is distilled, and trade-offs considered before a decision is made regarding the allocation of resources to mitigate problems that hopefully will never transpire.

In the research stage for this dissertation, one California official at the California Office of Emergency Services described the method for determining the necessary amount and types of resources for emergency services. He stated, as did all individuals interviewed for this study, that there were primarily three phases in planning and developing the budgetary process: (1) assessing future risks, (2) identifying the types of resources necessary for responding to each possible risk, and (3) determining the annual inventory of current resources.

First, an annual list was prepared identifying possible risks. A rough plan for responding to each emergency (risk) was developed, complete with specific resources needed for the response. This list was then compared to available

resources. The remaining items served as that year's list of equipment, training, personnel, or other resources to be requested in the budgetary cycle.

The next step involved preparation of the budget, which was then submitted to the governor and the legislature. This official commented that it was accepted that not everything requested would be received during the course of legislative budgetary hearings.

The 1980s and 1990s were representative of this process as California suffered an unusually large number of presidentially and gubernatorially-declared natural disasters. Each disaster received widespread media coverage with images broadcast on television depicting personal stories of families losing homes, their life savings, and in their worst moments of grief being asked to describe their feelings.

The emergency management official interviewed stated that the agency recommended procedure was to go immediately to the legislature to request more resources (equipment, personnel, training, etc.). He claimed that after the emergency occurred, the agency practice was to ask for the same items that had been refused during the normal budgetary cycle earlier that year. It was due to these procedures, the official maintained, that the state Office of Emergency

Services was able to substantially expand its resources. Moreover, he credits these resources as a major factor in the emergence of the California Office of Emergency Services as the eminent emergency management office in the country.

The official went on to say that it was understood that if the agency did not act quickly, it would most likely lose out during the next budgetary hearings, because history had shown that the further they moved away from the disaster the more likely the legislature was to focus on other pressing matters. Anthony Downs famously called this the "issue attention cycle."

The description above supports the process recalled by former California Legislative Majority Leader Walter Karabian, when asked during this study how the legislature determined the amount of funding to allocate for emergency planning. Karabian responded, "There was never enough to satisfy emergency agencies, so we had to weigh their requests against all the other agencies' requests and the funds available. Many citizens describe this activity as legislative horse-trading, but we legislators always said it was a matter of priorities or trade offs."

For SEMS, the trade offs between having enough and too many resources are both conceptual and functional. For instance, the breadth of services involved in emergency

management implementation necessarily requires inter-agency collaboration and coordination as designated by SEMS. Still, different perspectives may lead to a different priority for each agency involved in responding to disasters.

These concepts are discussed by Ellis Stanley and William Waugh in the chapter they wrote entitled "Emergency Managers for the New Millennium" in *Handbook of Crisis and Emergency Management*. In this chapter the authors state, "Professionalization of the field will also reduce the unevenness in agency capacities and encourage communities to recognize and address hazards"(p. 697).

As part of the research on this project the following questions were posed to Ellis Stanley, Director, Emergency Management Office, city of Los Angeles, during a conversation that took place on September 28, 2006:

Question: By what process do you determine how much is enough emergency preparedness?

Answer: Agencies develop a list of needs annually for equipment, planning, training, and employees. The criteria may change annually, and each item is prioritized annually. That is to say that Priority 3 may become a Priority 6 next year.

In recent Homeland Security Grants, Los Angeles did better than some east coast cities because we submitted proposals for sustainable projects such as training, whereby ours was not just a one-time training class but a training curriculum that could be repeatedly used and built upon.

[During the course of the interview, a discussion took place with Stanley about urban area response plans, and he was asked about a recent report indicating that California has 900 hospitals that are not up to earthquake standards.]

Question: What kinds of preparations can you undertake to help prepare the city of Los Angeles?

Answer: There is nothing I can do about retrofitting hospitals; however, what is possible for me to do is to develop emergency management plans that cover surge capacity and to create plans that consider the use of field hospitals should they be necessary.

Organizational Capacity and Leadership

In emergency management, leadership is required to move these issues from simply a framework for identifying problems, and the possibilities for answering them, into policy implementation. In *Getting Agencies to Work Together*, Bardach acknowledges the contribution of Osborne and Gaebler in *Reinventing Government* (1992), in which the authors termed goal and policy setting as "steering." Bardach builds upon this concept to discuss the role of leadership in advancing these goals, and states that leadership can be offered by an individual or "they might sometimes be better performed by a duo or by a threesome." He defines leadership in this context as "...behaviors that would help...accomplish useful work."

While these concepts are applicable for the research in this dissertation, Bardach's definition of leadership is too broad for this study. For this research, leadership is understood to reflect an individual (or individuals) who get others to take actions toward the accomplishment of purposeful goals that otherwise would not occur. This

definition is more akin to that offered by Daniel Katz who contends, "leadership is the process by which one individual consistently exerts more influence than others in the carrying out of group functions" (p.204).

A manifestation of this leadership is demonstrated by the allocation of resources and rewards. Katz claims "there is more opportunity for policy formulation and its implementation at higher than at lower levels...task oriented leadership now becomes the conceptualization of collective goals and the formulation of policy. This can in its fullest extent mean the initiation of new structures" (p. 214).

The study of emergency management provides an opportunity to examine the role of leadership both for organizations and for elected officials. Katz discusses two specific types of leadership with application for emergency management officials.

Organizational Leadership

First, the author's examination of task leadership has application for various phases of emergency management. As an example, in the disaster response phase an incident commander is in charge of a hierarchical series of directed field activities. Although input may be offered by subordinates, it is the incident commander who is in charge of the ultimate task of putting out the fire.

The second type of leadership required for emergency management--both prior to and during a disaster--is that of supportive leadership. In this role, effective emergency managers (intermediate and senior managers) offer positive reinforcement for members of the group (Katz, p. 211). At this level, task orientation is extended to include "extending and developing the organizational structure itself. To the mastery of the technical know-how is added the special skill of initiative and of innovation" (*ibid*). While the preceding description of leadership roles assumes different levels of organizational responsibilities, it is also possible for individuals at any level of the organization to informally assume motivational tasks to move the group toward its goal.

In California, as in many other states, fire service personnel are union members. As such, this creates a distinction in leadership focus within the union ranks which will likely reflect the members' rational choice interests of health and welfare issues for better working conditions (e.g., a buddy system in which a minimum of two firefighters are required to enter any burning structure); increased pay, benefits, and pension; or additional on-the-job training. Leadership demonstrated within the union membership requires motivational and organizational skills akin to the supportive

leadership discussed in Katz' typology. These skills are needed by the union representatives even though Katz ranks them as lower level employees.

Philosophical differences exist for senior management of firefighting agencies, and these are reflected in leadership activities. For instance, senior management at the California Department of Forestry and Fire Protection has lobbied for years to obtain increased equipment, especially air tankers and helicopters to fight fires. They argue that these resources are more effective than large numbers of new personnel. This is often a point of contention in labor negotiations with union representatives who press for more employees.

When first embarking upon research for this study, it was anticipated that evidence of Robert Michels' famous "iron law of oligarchy" would be found. Instead of encountering the irresponsibility of organizational leadership as characterized by Michels in political parties, what was uncovered were many dedicated, and often times overworked, innovative leaders in governmental emergency services organizations. The streamlined nature of the organizations in this research may have saved them from the fate of those in Michels' study. The organizations also may have benefited from development along semi-military type models, which

Michels contends are exempt from the effects of self-centered leaders seeking to preserve their own positions.

Political Leadership

Thus far the discussion of leadership in this section has concentrated upon roles within the emergency management organization. Other dimensions of leadership are relevant for this examination, particularly that of political leadership.

It turns out that political leadership is central to the development and implementation of emergency management policy. More specifically, successful leadership calls on not only the skills and abilities of the leader, but of the constituency to be led. It could be summed up as a partnership between the leader and the public, which begins by utilizing the tools available to arouse public opinion.

Ronald Heifetz (2002) argues that effective leaders begin the process of change by first framing the macro questions which are designed to identify the public values, and then asking if there are gaps between their values and how they behave. In Heifetz' view of leadership, an individual leader serves to influence a community to face its problems and to mobilize people to tackle tough problems.

In considering political leadership, early scholarship tended to concentrate on behavioral issues (Lasswell. Converse). Then, later theorists began to focus on the role

of presidential leadership. Some of this work has relevance for this study, as this dissertation considers the effect of elected leaders serving in an executive capacity for SEMS' implementation.

Much of the scholarship on political leadership deals with issues surrounding power and authority and how specific personality types deal with these issues.

Richard Neustadt famously observed that the real power of the presidency is the power to persuade. In this statement, he described five constituencies that a successful president must persuade: subordinates, legislature, media, interest groups, and the electorate.

This is actually a description for how leaders can mobilize the public for support when a problem is identified; orchestrate or shape the support and resources into action; and then consolidate or institutionalize the activities (Renshon).

A cautionary note in Neustadt's argument is that a president cannot appeal to all constituencies at the same time, because they naturally have competing interests and objectives. This has application for local government and local leadership, as will be demonstrated in the case study for San Diego.

Another indication of political leadership is amplified by citizen performance. The case studies for this research discuss the roles citizens played in the implementation of emergency management policy. According to Philip Converse's seminal evaluation of citizen performance, a person's political understanding or lack of it will impact performance in areas such as voting and expressing policy views. He contends all citizens should have an ideological belief system, because "there are many crucial consequences of such organization" (1964, p.227).

During the 1980s political heuristics' scholars began to offer a different view to explain how citizens can make up for a shortage of knowledge by relying on mental shortcuts, or heuristics, in making choices (Brady and Carmines; Kuklinski and Quirk). The role of political leaders in each process is quite different. The first involves ongoing education as a course of action, while the latter process is utilized more often during elections.

In the aftermath of the 2003 fires in San Bernardino and San Diego counties, questions arose about San Diego's citizens' understanding of the local emergency management policy, their personal belief systems, and their attitudes toward the tasks they were requested to perform such as tree clearance, evacuation preparations, etc. Much has been made

in news reports about the political culture of San Diego and whether it influenced decisions affecting the outcome of that county's fires.

Daniel Elazar's research (1970, 1972) into political culture has relevance for this study. The author studied how different states create distinctive policies in response to similar problems.

He then developed a typology that breaks down the American political culture across three regions and according to three main subcultures, entitled: (1) Individualistic: typified by a reliance on the marketplace and a limited tolerance for the role for government, primarily to areas encouraging private initiative; dirty politics is assumed to be a fact of life; the individualistic sub-cultures assumes a negative view of bureaucracy and is seen in the mid-Atlantic states through Illinois and the West; (2) Moralistic: this subculture believes government is necessary to advance the public interest and is considered a positive force; politics revolves around issues, and people run for office to advance issues. Within this model corruption is not tolerated, because government service equates to public service and bureaucracy is seen as public good. This mindset exists in the upper Great Lakes area and in the Midwest to Northwest; (3) Traditionalist: typically this individual is less

concerned with the marketplace and the common good. The role of government is considered to be one to maintain the current social and economic order; politicians are viewed as elites and believed to have a family obligation to serve, while bureaucracy is eyed with cynicism because it meddles with people's lives. These characteristics are most often seen in the south.

This typology will have application for the San Diego case study in Chapter 7 of this dissertation to explain the behavior of both the citizens and the elected officials in that county before and after that county's disastrous fires in 2003.

Survey responses received as part of this research from the counties included in the case studies indicate that incentives are not utilized to motivate organizations to voluntarily participate in the time consuming emergency preparations with inter-governmental and cross-jurisdictional agencies. These include organizations such as utilities; non governmental organizations, including the Red Cross and the Salvation Army; as well as private actors, such as hospitals, insurance companies, and even grocery stores.

During an emergency, all of these organizations play critical roles in response efforts--not only for the victims, but also for first responders. Even those emergency personnel

cloistered in a governmental Emergency Operations Command Center day after day must rely on outside vendors to provide basic supplies for food and hygiene. Because preparations take resources from private entities' missions, their managers may be reluctant to commit to the planning process. Still, the involvement of private firms is necessary for even conditional success in emergency response.

In a system of fragmented sub-state governments, the state is the entity with the formal authority to produce and execute unified policy. The test becomes to link local governments; special districts (e.g., water or fire); private entities (e.g., hospitals, utilities, and insurance firms); and not-for-profits (e.g., hospitals, charities) into a system of shared governance.

The complexities for fast-growing communities are demonstrated by Morrow (1999), as she points to limited community resources that may exist to assist potential victims. The author stresses the use of citizen expertise and grassroots' strategies for organizing neighborhood response networks for emergency planning and response. Still, even established communities may not have resources in place--as witnessed by New Orleans (2005), when shelter organizers at the Super Dome called for Hurricane Katrina evacuees to bring their own canned food with them.

Coordination challenges are not confined to managing not-for-profit and government interactions. In *Getting Agencies to Work Together*, Eugene Bardach describes aspects of the dilemma for inter-agency collaboration as he investigated the 1991 Oakland Hills Fire. Bardach contends that the lack of cooperation and turf-building among numerous agencies led to "politically induced specialization" (p. 89, 180), with the public paying the price. Outlining the roles of the Federal Emergency Management Agency and the California Office of Emergency Services, the author concludes, "the agencies' relationship, beneath the surface of cordiality, is as non collaborative as they can both manage" (*ibid*). From most accounts, relationships between the California Office of Emergency Services and FEMA have improved considerably since Bardach's assessment of 1991-92 activities surrounding the Oakland Hills Fire.

However, the new competition may be "all in the family" and exist more between the California Governor's Office of Office of Homeland Security and the Office of Emergency Services, which was recently cited by the state Auditor's report for lack of cooperation and a series of deteriorating problems.

An important consideration in the examination of this policy is the issue of "free-ridership." It is the inherent

nature of federalism that naturally lends itself to the possibility of a free rider. For instance, some state and local communities have lagged in developing emergency management programs, counting on the fact that the federal government will step in (Schroeder, Wamsley, Ward. 2001).

Free-ridership relates to the benefits that everyone involved in large groups receives as a condition of the rewards of public goods (clean water, good highways). In other words, an individual need not be active in the group to obtain the benefits of the large groups. Discussion of the process as a theoretical concept was first introduced by Mancur Olson when he questioned the willingness of individuals to cooperate and developed a formula based upon economic models to indicate that people conclude it is not necessary to participate in the group to receive the public benefit. Thus, they become free riders. However, he claims in a small group with a more concentrated purpose, it is easier to mobilize members and thereby obtain the results desired. Olson correctly demonstrates that urging cooperation may be difficult, because people are frequently too interested in short-term benefit to see the long-term consequences of such narrow thinking.

Paul Sabatier points to the transaction costs as one impediment to policy success--even in situations involving

shared goals and beliefs--and argues that this can lead to the "temptation of each individual and organization to free-ride" (*Theories of the Policy Process*, p. 138).

Similarly, in the San Diego county case study, the issue of "free-rider" was raised repeatedly by emergency officials to offer an explanation for San Diego county's sorely insufficient emergency preparations prior to the 2003 Southland Fires. Through a complicated series of agreements--and based upon California law for an area's geographic location--sometimes firefighting responsibility is with the local government; at other times, the state is accountable; in some instances, the federal government has the role.

Indeed, states have been cautioned against relying too much on the federal government for emergency assistance. It was during the post World War II era that many states first began creating statewide offices of emergency management. In 1952 President Truman warned, "Federal aid is not a substitute for disaster assistance efforts of state and local government and private agencies" (Executive Order 10427).

The implementation test is in transforming disparate and competitive agencies into mutually supportive ones, whose outputs are consistent with legislative intent.² Complicating

² In California an Attorney General Opinion is the ultimate interpretation of legislative intent, unless an interpretation to the contrary is offered by the courts.

the effort are differences in agency missions, experiences, and perspectives that then lead to variations in approaches or even objectives.

Harold Wolman (1997) also discusses aspects of shared governance in *Local Government Institutions and Democratic Governance* by examining how institutional structure reflects society's values and whether structure affects results. He contends, "Theory of local government institutions has both normative and empirical components." Wamsley (1996) concurs with the notion that structure matters, and focuses on local-state government relationships for emergency management. He argues, "States vary tremendously in their interest and investment in building and maintaining emergency management capability. On the top end of the scale is California's Office of Emergency Services" (p. 8).

With a staff of nearly 500 people and a 2005-06 operating budget in excess of \$80 million, the agency "oversaw the administration of more than \$735 million in emergency response, recovery and criminal justice grants" (OES 2004-05 Annual Report, p. 18).

The Council of State Governments annually publishes *The Book of the States* in which policy experts author articles on various state programs. The 2005 edition includes a lengthy report on *State Emergency Management and Homeland Security*

between 2001 and 2004 and claims the majority of new federal funds are directed toward homeland security functions at the expense of funds for pre-disaster mitigation programs and emergency management performance grants. The article states:

Increased responsibilities for homeland security and the loss of adequate funding for basic operations have taken their toll. In fiscal year 2005, agency budgets ranged from \$410,000 to \$280 million, plus state disaster appropriations ranged from \$20,000 to \$560 million. The national average for state agency operating budgets was \$12 million, and when disaster appropriations are included the national average increases to \$26 million. This represents a significant decrease from fiscal year 2004. These budgets support an average of 70 fulltime employees. Staffing levels in individual agencies range from 13 to 459 full time employees (Sheets. 2005. p. 527).

Incentives

Arguing that policy tools are understudied political phenomena, Schneider and Ingram (1990) focus on the "underlying behavioral assumptions that guide their choice" (p. 510). Their analysis of policy tools identifies five types used by governments to affect individual and agency behavior-- incentives, authority, capacity building, learning and symbolic. The authors posit, "Tools do not always deliver expected outcomes and sometimes produce unintended and unwanted effects" (p. 525). Positioning incentives as a tool to encourage behavior that would not otherwise occur, the authors urge future research to compare the results of positive and negative policy incentives.

Many of these aspects of incentives are discussed by Deborah Stone (1988) as a theory of inducements. In this three-part theory the author argues (1) individuals are adaptable and can change their behavior; (2) givers and receivers make up the unitary actors (individuals and collective entities) capable of rational behavior; (3) the receiver has some "orientation toward the future" (p. 266).

The use of incentives in this research assumed individuals are utility maximizers requiring encouragement, influence, or manipulation to affect their behavior. Bardach bolsters this position, as he points out that incentives do not self-activate. Someone must first recognize them, and point out their value. For various political and administrative reasons, some key counties were reluctant to adopt SEMS, including San Diego and Los Angeles counties. Under SEMS' provisions, cities no longer received direct state response costs reimbursement. Instead, reimbursement was designed to occur via their SEMS Operational Area. In 1997 counties were notified to develop additional formulas for funding of ongoing city staffing levels. Some cities balked at the second measure, and this research considered their subsequent emergency management activities.

Learning

This dissertation argues that the incorporation of learning is central to the success of SEMS. Three dimensions of learning are considered and grouped to reflect different aspects of the phenomena: (1) policy learning to mirror characteristics of regulations including values, data, objectives, and technology; (2) institutional learning that incorporates the history and experience for behavior, decision making, resources, or preferences of relevant organizations; and (3) bureaucratic learning as the accumulated knowledge and experience of local public employees (both individually and in policy networks) for expertise, professional standards, institutional preferences, aspirations, and event outcomes.

In studying the links between policy feedback and political change, Paul Pierson argues that policy learning may play different roles at different stages (1993). He claims the insulation of decision makers "is likely to be important. Learning processes are more likely when a small number of actors are involved" (p. 617). Pierson's approach is contingent upon distinct policy stages, while research proposed for this dissertation treats implementation as a continuous component of the process.

More germane for this study is the work of Michael Polanyi (1967), who coined the term "tacit knowledge"-- meaning that experientially developed knowledge cannot be easily converted into accessible facts. Susan Barrett and Colin Fudge (1981) make a similar point claiming policies involve political compromises and suggest that compromises do not so much indicate a finish line, as a starting point in implementation.

This supports positions of theorists such as Swedish scholar Benny Hjern. He examined Lipsky's point for street-level actors, and asserts that while they may have considerable flexibility in performance, they rarely see their ideals and experiences incorporated. Hjern (1982) contends that networks are the method by which change and compromise are promoted for field-level actors. This view is supported by Laurence O'Toole (1993) who concludes that "authoritative command patterns involving singular bureaucratic units are deemed increasingly rare" and that no single inter-organizational arrangement guarantees success in dealing with policy issues.

How Organizational Capacity, Incentives, and Learning Shape Implementation

Individual actors implementing or performing public policy do so within the framework of a structured institution. For this study, institutions refer either to public or private organizations, such as the California Office of Emergency Management, a local fire department, or the American Red Cross.

Which factors affect the capacity of an institution to successfully deliver emergency management services? In "Performance Measurement in U.S. Counties: Capacity for Reform," Berman and Wang contend, "Support from elected officials is critical because it forecloses back channels, legitimates reforms and new performance expectations, and helps ensure funding for new efforts." The authors claim support from advisory boards serves to endorse management reform and the legitimacy of the actions of elected officials. They also point to the importance of involving citizen advocates in order to ensure support from lower managers so they do not sabotage reform efforts by foot dragging. "When counties satisfy many of the above conditions, they can be said to have a high level of capacity for performance measurement."

Institutional learning accumulates as standard operating procedures, professional rules, etc. In "The New

Institutionalism," March and Olsen (1984) examine institutional autonomy, and assert, "Institutions accumulate historical experience through learning" (p. 745).

Acknowledging the scarcity of theoretical efforts to identify causal links between experiential learning and optimal behavior, the authors conclude that institutionalism "is simply an argument that the organization of political life makes a difference" (p. 747).

Noting that motivations for professional prestige and status spur "slack" innovation,³ Mohr (1969) draws a distinction between incentives to which large and small departments respond. He points to limited funds and resources of small departments,⁴ and argues their innovation is mostly in targeted areas where the funds are available from states; but large departments have multiple, reliable funding sources plus federal grants (p. 122). Thus, this study addresses the kinds of entities which respond to different types of incentives.

In assessing the federal policies that began in the 1960s, some scholars claimed policy change occurred incrementally (Lindblom). Later theorists pointed to a

³ Introduced by Cyert and March (1963) in *A Behavioral Theory of the Firm* (Pp. 278-9), the term refers to the changes or innovations created by staff members who are motivated by status. The authors conclude these staff members initiated non-traditional activities rather than refining existing procedures.

⁴ These conditions are quite similar to those found in large and small counties in California for emergency management.

"focusing event" as providing a brief "window of opportunity" for change (Kingdon 1984). The notion of a focusing event is particularly relevant for emergencies. Notwithstanding the fact that policy making and implementation for emergency management may result from unplanned and unforeseen events, the policy making process is basically the same as that which prevails under more "normal" circumstances. Acknowledging the American political system's design to impede rapid policy change, other scholars call for a longer view of the change process (Sabatier 1994; Baumgartner 1993).

Emergency management policies evolve slowly at all government levels, with new policies enacted only after an emergency's focusing event. Baumgartner and Jones (1993) offer a salient framework for considering emergency policies. They contemplate policy change over extended periods, and emphasize long phases of policy stability. The stasis is punctuated by a period of instability when major policy change occurs. Change results from two interacting forces: how issues are portrayed (policy image) and the institutional context for issues, meaning policy venues either for decision-making or implementation.

Emergency situations--with a distinctive mix of emotional aspects and empirical data--provide a unique opportunity to re-define policy images. The result may be

dramatic change or at least an interruption to structural-based equilibrium. Louise Comfort (1988) bolsters this point as she discusses disaster policymaking, and concludes that policies made following catastrophic disasters are primarily influenced by the preceding event.

Further, new policies are frequently made quickly. The order-shattering nature of public emergencies sharply focuses attention on policy issues. Following a large-scale disaster, "do something" is the mandate public officials most often hear from constituencies. These outcries for program change may be so intense that policymakers often fall into a trap of just "doing something." This practice is illustrated by a West Virginia town whose highest building was 45-feet, yet, subsequent to 9/11 with the \$500,000 they received in emergency federal aid, purchased an aerial-platform fire truck with a 100-foot ladder (Hsu, 2002).

Nevertheless, the speedy response leaves unexamined many behavioral conditions that make effective coordination possible among policymakers. Nor does speedy response allow for creating a framework reflecting the institutional learning of bureaucratic practitioners. Downs argued that this process is the result of the short attention cycle for public issues. He identified the attention cycles as consisting of pre-problem, alarmed discovery, realization of

the costs, discouragement, and post-problem. This cycle closely reflects policy issues involved in developing emergency management programs.

As with other areas of the policymaking process, implementation is a phase that is difficult to delineate. Consequently, scholars have used numerous frameworks for implementation assessment. The contexts include the timing and nature of implementation, and approaches believed to impact outcome, such as top-down or bottom-up methods.

Contemporary theorists emphasize inter-governmental arrangements and behavioral considerations in deliberating how complex goals are achieved for multiple governmental agencies. The behavioral considerations are important points of contemplation for emergency management. This is a policy area that can only be effectively delivered by highly trained experts.

Conceptual inquiry is framed broadly by issues for SEMS involving standardization versus improvisation. For instance, SEMS requires that all agencies and jurisdictions within the state utilize its specified principles of mutual aid, inter-agency/governmental coordination, incident command, the SEMS operational area structure, and employ the use of technology for emergency communications. The policy, however, provides

wide latitude in how jurisdictions may choose to organize these activities.

In many ways, though, emergency management policy comes down to a question of centralized versus decentralized frameworks. For this study, decentralized models begin with local preparation that integrates the various agencies, jurisdictions, and private actors in planning efforts.

On the other hand, centralized frameworks are understood as hierarchical models. Authoritarian, centralized models for emergency management characterized the government plans for much of the twentieth century. During this period, civil defense models (see Chapter 3) were frequently adopted calling on military frameworks for "command and control."

Today, the civil defense systems of the World War II and Cold War eras are recognized as overly bureaucratic. Criticized for primarily focusing on disaster, civil defense models ignored the full range of implementation issues including preparation, mitigation, and recovery--in addition to response. In *Government Systems for Disaster Management* (2000), Russell T. Dynes argues that "Disaster is a complex social process, not just an isolated event. National and centralized decision-making was usually inadequate for local and diffuse problems" (p.5). He argues that better models advocate the "capacity of communities to maintain considerable continuity to their pre-

disaster activities" (*ibid*). Dynes urges adoption of flexible problem-solving models (versus centralized command-and-control military style models) that utilize functions relating to continuity, coordination, and cooperation in implementing emergency planning systems.

SEMS claims to embrace those organizational components of coordination and cooperation, as suggested by Dynes. The purpose of this research is to examine whether SEMS has been successful in meeting its stated purposes.

The first step in the process is to define success. In Chapter 1 of this dissertation, success is stated to reflect SEMS' meeting its objectives of standardization, collaboration, and coordination. In *Getting Agencies to Work Together* (p.21), Bardach considers the potential for interagency collaborative capacity (ICC). He examines three potentialities that bear on ICC success. They are: the relative clarity of technical means-ends relationships across policy domains, because clarity facilitates conflict resolution and the definition of a common purpose; the strength of political and financial incentives to collaborate; and a favorable cultural climate regarding "bureaucratic flexibility" (pp 47-8).

Bardach's description of potentialities affecting inter-agency success closely parallels SEMS' stated objectives to

seek standardized emergency management plans for multiple jurisdictions and agencies.

However, while Bardach's deductions about the potential for interagency collaboration have relevance for this study, this research focused on emergency management; and I argue that his definition needed to be significantly broadened to include all stakeholders.

Summary

In this chapter the literature was reviewed that offers important dimensions affecting policy implementation. First, the classical theory of implementation, which separates implementation from the rest of the policy process, was discussed. Then, contemporary models of policy implementation were examined that reflect implementation as an ongoing process. Next, theoretical frameworks were reviewed that assess specific aspects of the policy implementation process for SEMS including organizational capacity, incentives, and learning.

These theories and issues were relevant for developing a more complete understanding of the implementation issues surrounding SEMS, thereby providing a theoretical basis for examining the implementation of SEMS.

CHAPTER 3

CALIFORNIA'S EMERGENCY MANAGEMENT PROGRAM

"SEMS is a combination of a management and political tool."
...a leading state fire official (July 2005).

The Disaster Environment

*"A state of emergency--once it is officially declared--
is one of the rare occasions that highly trained
professionals are required to take orders from amateurs."*
...a leading California emergency management official (July 2005).

In California an "Emergency" proclamation is made by the top elected official of the affected jurisdiction--for instance, a city's mayor; or a county's chairman of its board of supervisors; or the state's governor; or the nation's president.

According to state statute (*California Government Code*, Section 8630-34), once a state of emergency is declared a sudden shift in authority occurs which directs the response efforts. It is at this point that an elected office holder of the jurisdiction (e.g., county sheriff) becomes the person in charge of response procedures and assumes ultimate authority. This dramatic shift in authority is but one demonstration of

the political and bureaucratic interplay evidenced in emergency management. This is also when statutory authority is eclipsed by political authority.

The term natural disaster often conjures an image of a random force creating the emergency. Contemporary reality is far from that scenario, as "most disasters today are linked to models and patterns of development as they intersect with the environment" (Oliver-Smith, 1996, p. 316).

In California, both development and population growth regularly outpace national averages. Indeed, fully one-eighth of the nation's 2005 population resides in the state. However, the combination of growth demand coupled with an often fragile environment enhances the risks for emergencies.

Moreover, a glimpse at California's contrasting demographics demonstrates the range of possibilities. For instance, urban Los Angeles county has a population in excess of 11 million residents, while rural Alpine county in northern California has but 1,000 inhabitants. Topographical differences reveal the widespread potential for disaster. They include Mt. Whitney at almost 15,000 ft., the desert of Death Valley at 282 ft. below sea level, and nearly 1,000 miles of Pacific Ocean coastline. Additionally, one of the world's most-famous earthquake zones--the San Andreas Fault--is in the heart of the planet's richest agricultural-producing region.

Further, California is home to eighteen different national forests, which collectively comprise 38 percent of the state landmass and contribute significantly to the number of annual fires in the state. These are called wildland fires or wildfires and refer to blazes in areas with high concentrations of natural vegetation, such as forest, brush, and grass. The terms firestorm or fire siege reflects the simultaneous occurrence of numerous major wildfires.

Over the years, numerous government agencies have employed a variety of response efforts to manage these fires. One approach permitted nature to run its course. Today, that is no longer an option, due to building patterns that bring mainstream society into the heart of the wildland areas. Currently, the policy of the California Department of Forestry and Fire Protection (CDF) is to attempt to contain wildland fires to a burn area not to exceed ten acres.

Still, not even the soundest of objectives are always possible to attain when a wildfire is involved. That was the case with the 1993 Laguna Beach Fire in Orange county and the 2003 fires in San Bernardino and San Diego counties.

Early Approaches to Disaster Management

California's lengthy record of major disasters may be traced to the state's early days, and the 1906 San Francisco

Earthquake is probably the best known of the state's first disasters. Yet, in spite of California's location in disaster prone areas, it has been national security concerns and crises that historically have provided the momentum for the state to create public emergency procedures and organizations.

The September 11, 2001, attacks on New York City's World Trade Center and on the Pentagon in Washington, D.C. motivated state governments throughout the country to review their emergency management policies. Similarly, it was World War I and fears of German attacks that induced many states to create their first emergency plans, including California. On March 29, 1917, the California Legislature approved the the State Council of Defense when it adopted the following:

"An act to create a State Council of Defense to make investigations into the effect of the occurrence of war upon the civil and economical life of the people of the State of California; to recommend to the Governor measures to provide for the public security, the better protection of public health, a fuller development of the economic resources of the state and the encouragement of military training; to impose upon public officers certain duties in connection therewith; and to make appropriation for the purposes of this act" (CA Governor's Office of Emergency Services, p.3).

Over the decades, successions of state councils were formed to deal with public emergencies. Each time a Council was reorganized, it was primarily in response to wartime considerations. As an example, the first order of business for the 1943 California Legislature was to pass the State War

Powers Act, which organized civilian war efforts. Next, the legislature created the State War Council, replacing the State Council of Defense. The new agency was to coordinate California's local and statewide civilian war effort.

During the pre-World War II period, California's first statewide Master Mutual Aid Agreement was established. Mutual aid had long been an informal disaster response tactic to expand local resources. Based on neighbors-helping-neighbors, the plan encouraged emergency officials to contact their counterparts from nearby communities to request assistance in coping with large-scale emergencies.

In California, as elsewhere, the most common cause for mutual aid calls was to fight fires; but this emergency response tactic for fire fighting soon proved a valuable tool for responding to other emergency situations. In 1938, as public concerns turned to the possibility of another war, California Attorney General Earl Warren spearheaded the effort to develop a formalized, statewide mutual aid system.

Under this plan, city, county, and state law enforcement agencies agreed to coordinate and unite during local crises, should there be a national emergency. This meant that the locally-elected county sheriff, who was generally the chief law enforcement official in California counties, assumed the emergency management leadership for that jurisdiction. This

structure has relevance for the current study. Under SEMs' guidelines, once a county or any political subdivision of the state declares an emergency situation, the highest elected official of the jurisdiction assumes leadership command.

Evolution of California's Disaster Policy

In 1945 the California Legislature determined that one agency would bear responsibility for planning the state's responses for war-related emergencies, natural disasters, and civil disturbances. This approach remains in practice to date, and is supported by the belief that programs, equipment, and first responders are to be used for all types of emergency response efforts. This is referred to as the all hazards approach to emergency response, and response variations are dependent upon the types of assistance that are indicated.

Roots of the current emergency management program, SEMs, are found in the state's 1950 Civil Defense and Disaster Relief Plan. As the federal government prepared a civil defense initiative responding to the escalating Korean War, the California legislature amended its Disaster Act to reflect federal recommendations. The California 1950 Civil Defense and Disaster Relief Plan, developed with help from U.S. Army officials, was primarily a civil defense plan, but included sections for managing natural disasters.

The state's Master Mutual Aid Plan was also established the same year. All California counties and nearly every incorporated city and special district adopted the 1950 plan. The agreement was "a formal structure where jurisdictions voluntarily assisted each other by exchanging resources during disasters" (Davis). Moreover, the plan called for the state to be divided into Mutual Aid regions with the state Office of Civil Defense coordinating the program.

To underscore the role of the state's disaster preparedness program, the state legislature modified the California Disaster Act in 1956. This change in the statute empowered the governor to declare a "state of disaster" or a "state of extreme emergency." The California Disaster Office became the new name for what had been the Office of Civil Defense. The remainder of the 1950s and the early 1960s witnessed a gradual change in focus from civil defense to disaster and emergency management. During Reagan's gubernatorial administration (1968), the Emergency Resources Management Plan was created by the Disaster Office with assistance from the private sector and federal government. The plan was designed to "enable the best possible management of available resources, both human and material, should the nation be subjected to enemy attack. It was based on maximum reliance on the private sector of the economy to perform

voluntarily in an emergency, under overall guidance and direction provided by government" (OES p.7). It was two more years before agency plans included natural disasters.

In spite of mounting emphasis on the private sector, the civil defense model for emergency response was not abandoned until well after the Cold War, as the agency began to concentrate more on natural disaster operations. The 1970 Emergency Services Act formalized the state's emergency management agency and assigned responsibilities to it (OES).

The agency created by the 1970 Emergency Services Act has evolved into the current Governor's Office of Emergency Services (OES). Its mission is "to ensure the state is ready and able to mitigate against, prepare for, respond to, and recover from the effects of emergencies that threaten lives, property, and the environment" (*ibid*). Today OES serves as the lead state agency for California's emergency management. With 459 fulltime positions, OES employs the most fulltime staff of any state emergency management agency in the nation.

The core activities of the state Office of Emergency Services (OES) are clustered around four sequential policy phases determined by state authorities. In regard to "preparedness," OES is charged with developing operational capabilities and improving disaster response measures. These activities include preparing a disaster plan, conducting

training with local emergency response personnel, and determining evacuation routes.

In the subsequent "response" phase, OES is expected to carry out activities designed to save lives and prevent harm to individuals or property during an emergency situation. Examples include providing warning to residents, conducting evacuations and securing short-term food and shelter to victims, as well as conducting search and rescue operations. The ensuing "recovery" phase requires OES to take steps to restore vital life support systems to a minimum operational capacity to a state of normalcy. In the final "mitigation" phase, the role of OES is to take longer term measures to eliminate or minimize future disaster damage, such as strengthening building codes, requiring earthquake and fire resistant construction, or the installation of warning systems (*Emergency Management in California*, 2003).

While OES is at the center of coordinating the four phases of California's emergency management program, the office is but one of several that comprises the delivery system for this policy. For instance, as the chief constitutional officer of the state, the governor plays several significant roles. First, the Director of the state's Office of Emergency Services reports directly to the governor. Further, the governor oversees activities of the

state's advisory body on emergency preparedness, the California Emergency Council. As stated previously, it the governor who declares a State of Emergency for affected counties within the state and requests a presidential declaration of a national disaster.

Other key players responsible for managing the state's emergency management program include the OES regions. The state is divided into six mutual aid regions for sharing resources, and into three administrative regions for coordinating information among jurisdictions. Further, each of the state's 58 counties, including all of the state's political subdivisions within a county such as special districts, is designated by OES as an Operational Area (OA). Within a given Operational Area, the local jurisdictions of cities, special districts, and the county government support the field operations of first responders, including law enforcement, fire services, and public works personnel.

Moreover, private industry may enhance government's available resources. An example of this involves private aircraft firms, which may lend aerial support to fire suppression. The aircraft may be employed on a contractual or situational basis. Additionally, private entities are increasingly involved in the planning and delivery of emergency management. These firms include utilities,

telecommunications companies, hospitals, insurance companies, and charitable organizations. As communities develop and technology progresses, both the types and numbers of private firms have increased. Finally, the federal government augments state emergency management activities for all agriculture or economic-related disasters, as well as when the President declares an Emergency or Major Disaster.

Throughout the United States, state and local emergency management programs are required to serve the dual purpose of supporting disaster response and civil defense. In spite of the old saying that claims "practice makes perfect," perfection has not been achieved in disaster management ...even in California. Still, the state holds an impressive record for the number of times its emergency responders have been called to emergency situations to "practice."

Consider highlights of the state's record involving all types of national disasters, as well as its history with large wildfires. In the past fifty years, California has experienced over seventy presidentially-declared major emergencies (FEMA), and nearly three times that number of state emergencies has been declared by California governors (OES). For the year 2003, California documented over 115 separate large wildfires, each involving more than 300 acres. In all, the California Department of Forestry and Fire

Protection was called to respond to approximately 6,000 wildfires that year. (California Division of Forestry, 2004).

Role of the Federal Government and FEMA

A review of federal policy direction for emergency management reveals that California's approach was often ahead of federal policy. The Federal Civil Defense Act of 1950 (PL 81-920) was the nation's first permanent civil defense measure. The legislation was designed for the federal government to provide support to state and local jurisdictions, "with the understanding that civil defense would later take responsibility for natural disasters" (Peterson, 1957, p.54).

California's modifications to its state policy following the passage of the Federal Civil Defense Act of 1950 were discussed earlier in this chapter. The Federal Civil Defense Administration was created to help mobilize state efforts, and by 1951 each state employed a full time civil defense staff member as a result of this act.

The federal government demonstrated a growing involvement in emergency management during the 1960s and 1970s. It is no coincidence that emergency policy, both nationally and locally during the Cold War period, was dominated by the civil defense approach. It was during President Kennedy's administration that Congress appropriated

over \$200 million to bolster the number of shelters in the event of a nuclear attack.

Throughout the 1960s and 1970s, a number of large-scale disasters captured public attention and served as focusing events to expand the federal government's role in disaster response. Ravages from hurricanes Betsy (1965) and Camille (1969) were brought into American living rooms as people followed natural disasters for the first times on their own television sets. When anti-war riots and civil unrest disturbances hit college campuses and city streets, it became obvious that response to many of these uprisings was often beyond the capabilities of local governments.

At the same time, state governors were increasingly dissatisfied with what they saw as fragmented federal activities, the result of over one hundred federal agencies involved in disaster, emergency, and hazard programs. Adding to the frustration of state government leaders, many federal programs duplicated those existing within their own states.

In 1979, the Federal Emergency Management Agency (FEMA) was established to centralize federal emergency functions. FEMA was charged with assuming responsibilities that had previously been handled by other federal agencies. Among the functions for which FEMA was now responsible included: civil defense, fire prevention and assistance, flood insurance, dam

safety, and earthquake hazard reduction. Under the new statute, the Small Business Administration retained its responsibility for disaster loan programs.

A scant six months after undertaking the reorganization of emergency management, President Carter (who had created FEMA) was defeated by Ronald Reagan in November 1980. Carter's plans for the beleaguered agency were aborted, and FEMA languished during the Reagan Administration while the agency again focused on civil defense and continuity of government in the event of a nuclear attack.

In 1988 United States Senator Robert Stafford of Vermont authored landmark legislation for emergency management. Stafford had been a long-time activist for environmental causes, and his position as Chairman of the Senate Committee on the Environment and Public Works positioned him to author the Robert T. Stafford Disaster Relief and Emergency Assistance Act (PL 93-288). The statute revised the 1974 disaster assistance legislation, and authorized the President to issue major disaster declarations. This enabled federal agencies to provide assistance to states overwhelmed by disasters. Provisions of this law made it possible for assistance to be provided to individuals, state and local governments, and certain not-for-profit organizations.

In spite of some steps forward, nearly a decade after its inception, FEMA continued to flounder. It was during President George Bush's administration that hurricanes Hugo and Andrew wreaked havoc along the Florida coast. Already disparaged for its arms-distance response to the Los Angeles Riots of March 1992, FEMA's reputation hit another all time low in the fall 1992 congressional hearings that reviewed the agency's activities during the hurricanes. FEMA was cited for a failure of coordination and communications, but most complaints pointed to issues concerning federalism and shared governance.

The 1992 congressional hearings paved the way for a new era in the agency. During President Clinton's administration in the late 1990s, the agency moved to emphasize natural disaster response, and especially mitigation. FEMA's emphasis on mitigation centered on three programs under its purview: (1)The Hazard Mitigation Grant Program which offers federal matching funds to state and local programs tied to previous disaster declarations; (2)The Flood Mitigation Assistance Program, which provides grants to local and state governments for planning, project implementation, or technical assistance; and (3)The National Mitigation Strategy, which emphasizes local mitigation and urges local and state governments to assume lead roles in mitigation.

When President Clinton assumed office in 1993, he appointed his former Arkansas Director of Emergency Services James Lee Witt to direct FEMA. Witt became the first agency director with previous emergency management experience. Under Witt's leadership, the agency was reorganized, and a new emphasis was placed on natural disasters and natural hazard mitigation. The agency also assumed an aggressive role in responding to disasters.

More often than not, James Lee Witt was the first person to be interviewed live from a disaster site. In a media driven environment, perception is often considered reality--and Witt's presence created the perception of a responsive government agency that "felt our pain." This is the quick reaction to a disaster that presidential-candidate Clinton demonstrated in California, as he toured the ravaged areas of south central Los Angeles following the 1992 riots--days before then President George H. W. Bush arrived.

The National Emergency Managers Association collaborated with FEMA to create the Capability Assessment for Readiness, an assessment project designed to determine the capabilities of state emergency management programs. The program has been refined in the past ten years, although the core objectives remain in place: for FEMA to have states conduct a self-assessment of their emergency management readiness. This

information provides a baseline against which future progress and assistance may be evaluated and FEMA funds provided (<http://www.fema.gov/news/newsrelease.fema?id=3712>).

Even with these advances, progress for FEMA did not follow a straight line. Just months after President George W. Bush took office, the United States suffered the attacks of 9/11. This time, FEMA was thrust into its most massive reorganization ever. President Bush called for FEMA and twenty-two other federal agencies, programs, and offices to be merged into the Department of Homeland Security (DHS), with FEMA being one of four main agencies.

While the plan was debated in Congress, the Brookings Institution issued a report in 2002 urging revisions to President Bush's Homeland Security proposal, and stating that "...FEMA ought to remain independent, basically for three reasons." In addition to a caution about the mergers of too many agencies, the report warned that in the case of a massive national emergency, FEMA's focus on disaster response would dominate agency resources that could leave the country vulnerable to terrorism threats. Finally, the report questioned the prudence of merging FEMA, which it stated has demonstrated itself "in the last ten years as an extraordinarily effective agency." The study concluded that

with a merger, "you are not likely to improve its performance, but you are likely to reduce its performance."

Nonetheless, in March 2003, FEMA merged into the DHS, where it currently employs approximately 2,500 fulltime workers in Emergency Preparedness and Response. The issues surrounding FEMA's merger have relevance for California's Office of Emergency Services (OES). Soon after September 11, 2001, California--like most other states in the country--took advantage of Homeland Security grants to establish a statewide homeland security office. However, since the creation of this office, California--like the U.S. government before it--has debated whether to merge its offices of homeland security and emergency services into one agency.

The efficacy of the decision to merge the federal office of Homeland Security and FEMA were questioned subsequent to FEMA's disastrous performance after Hurricane Katrina in August and September 2005. FEMA's stated mission is to lead the nation's effort to prepare for all potential disasters and to manage the federal response and recovery following any presidentially-declared national disaster, whether natural or man-made.

One FEMA document puts it this way:

Whether a disaster strikes without warning, such as a tornado or earthquake, or gives advance warning,

such as a hurricane, FEMA moves quickly to position staff and supplies and assess what other federal agencies are needed as well.

FEMA does not respond to every disaster that occurs in the U.S. It responds only when a disaster overwhelms a state's resources and the governor requests federal help. Once damage assessments are made, the President may issue a federal disaster declaration, opening the way for the federal government to pay for disaster recovery (<http://www.fema.gov/txt/library/thisisfema.txt>).

The controversial agency plunged to a record low in public confidence after its response to 2005 hurricanes Katrina and Rita. Presently, a number of proposals are being considered for FEMA's future. At the center of the dilemma is how to deal with results of investigations which found the agency to be unresponsive and lacking in coordination and communication. Particularly troubling is the fact that these are the same comments made over two decades earlier when Hurricane Hugo and Hurricane Andrew were investigated.

Currently, FEMA is organized into ten regional offices that work directly with states in planning for and responding to disasters. Under its present structure, FEMA's Region IX serves California as well as Arizona, Hawaii, and Nevada, plus the territories of the American Samoa and Guam, the Northern Mariana Islands, the Marshall Islands, and Micronesia.

California's Standardized Emergency Management System

The 1992 California Emergency Services Act

Central to an effective emergency management policy is the objective of mitigating damage and providing for continuity of government services. The 1992 California Emergency Services Act and SEMS go further. This policy recognizes the complexity of contemporary government and attempts to harness into a single, cohesive framework all the various agencies, jurisdictions and individuals involved in emergency response within the state. SEMS is the system now used for coordinating state and local emergency response in California by organizing various levels of emergency response for information and resource flow.

SEMS' Structure

California's 1992 Emergency Services Act called for the Office of Emergency Services (OES) to appoint an Advisory Council to write SEMS' provisions. A small group of individuals comprised the Advisory Council. Their individual and collective backgrounds in emergency management foretold the direction of SEMS. A number of the members hailed from fire services, and it is no surprise that the policy they developed incorporated the time-honored principles of fire response--Incident Command and Mutual Aid. The regulations developed by the Advisory Council specified that SEMS would:

...standardize response to emergencies involving multiple jurisdictions or multiple agencies. SEMS is intended to be flexible and adaptable to the needs of all emergency responders in California. SEMS requires emergency response agencies use basic principles and components of emergency management including ICS, multi-agency or inter-agency coordination, the operational area concept, and established mutual aid systems. State agencies must use SEMS. Local government must use SEMS by December 1, 1996 in order to be eligible for state funding of response-related personnel costs pursuant to in California Code of Regulations, Title 19, 2920, 2925, 2930. Individual agencies' roles and responsibilities contained in existing laws or the state emergency plan are not superseded by these regulations (*California Government Code of Regulations; Section 8607 (a), Title 19 Public Safety; Division 2 Office of Emergency Services; Chapter 1, Section 2401. Purpose and Scope*).

From the outset, SEMS aimed to *standardize* emergency responses involving more than one agency or government (*California Government Code of Regulations; Chapter 1 SEMS: Title 19 Public Safety No. 2401*). Its intention of flexibility and adaptability for all responders extends to single jurisdiction incidents, and requires local governments to use SEMS to obtain FEMA reimbursement in state or federal disasters.⁵

SEMS' principles

SEMS sought standardized approaches to five principles that form the structure and foundation for the program. The first principle, mutual aid, is a model for resource sharing that requires similar organizations to assist each other during emergencies as well as in day-to-day operations. Two

⁵ For federal emergencies, FEMA reimburses a portion of local government emergency personnel overtime costs.

basic types of mutual aid are utilized in SEMS' implementation. They are Master Mutual Aid and Automatic Mutual Aid. Master Mutual Aid includes agreements among all California fire agencies to provide resources in responding to large-scale emergencies. Automatic Mutual Aid refers to agreements between agencies to respond with available resources to the incident, regardless of jurisdictional boundaries.

The second principle upon which SEMS is based is inter-agency and governmental coordination. In this system, affected jurisdictions and organizations coordinate and prioritize resource allocation and emergency activities.

Operational area functions (OA) comprise the third principle of SEMS. An operational area encompasses the county and all its political subdivisions (cities and special districts). The operational area becomes the entity utilized to coordinate resources, emergency response, and damage information throughout an affected county.

The incident command system (ICS) is the fourth SEMS principle and is a management tool originally developed by California fire services for responding to emergencies. Today, it is used by all emergency response agencies at the field level, and, like mutual aid, has been widely adopted by emergency management organizations around the globe.

The fifth principle of SEMS involves technology for emergency communications. The Response Information Management System (RIMS) and the Operational Area Satellite Information System (OASIS) are the communications networks utilized by all government levels during a disaster. RIMS is an electronic data management system linking California emergency management offices, and OASIS is a portable satellite-based network used for communications if landline systems are disrupted.

SEMS' functions

The functions that constitute the foundation for any emergency response plan entail specific tasks. The basis for the SEMS model includes five functions to be adapted to a variety of types of incidents, even a small incident in which one person may complete all functions. The plan is designed so that as the emergency intensifies and becomes larger, the person in command assigns activities to other individuals. Management sets priorities and policy direction for emergency response, while operations conducts the activities or tasks involved in the emergency response.

The remaining three functions of SEMS primarily provide support to management and operations. The planning/intelligence function collects, evaluates and disseminates information regarding potential emergencies; logistics secures facilities,

services, personnel, equipment, and materials necessary for emergency response.

The functional responsibility of finance/administration has become an increasingly significant section. Charged with tracking costs for response operations and securing vendor contracts, emergency response teams commonly include financial personnel at an emergency site. This practice minimizes mistakes in accounting procedures when an agency or jurisdiction seeks mutual aid reimbursement or FEMA reimbursement. Since 2001 the role of this section has expanded. The U.S. Department of Homeland Security requires states to have a separate office of homeland security to be eligible for homeland security grants.

In California there are many overlapping functions between the state's homeland security office and the Office of Emergency Services; however, federal grants and reimbursements are first sent to state homeland security with many cited delays in reimbursement and payments to local governments (California State Auditor. 2006).

SEMS' organizational levels

SEMS also utilizes five different levels of response. Requests begin at the level nearest the emergency site, and then move to the next higher government level until the request is completed.

Typically, the field level is that closest to the emergency situation and responders are what Lipsky termed "street level bureaucrats." This level incorporates the resources and response activities of the emergency organizations (fire services, law enforcement, public works, etc.). Then local governments (counties, cities, special districts) coordinate overall emergency response within their jurisdiction. Once an emergency situation expands beyond a local jurisdiction's capabilities (e.g., a city), the operational area is activated to manage resources of the county and all its political subdivisions.

When capacities of local resources cannot manage an emergency, the OES regional structure coordinates resources among various operational areas. California OES is organized along two different regional systems. Mutual aid regions divide the state into six regions for mutual aid resources. The administrative and financial regions divide the state into three regions.

In California, as elsewhere, the state is the top organizational level with responsibility for managing and allocating statewide resources. Additionally, when resources beyond the state's capacity are required for emergency response, it is the state that coordinates with federal

agencies and other state governments (e.g., neighboring states of Arizona, Nevada, or Oregon).

SEMS and the Roles of State and Local Governments

California's fifty-eight counties enjoy a stronger degree of local autonomy than do most local jurisdictions in the nation. SEMS' provisions reflect an understanding of local autonomy. All fifty-eight California counties were required to vote on whether to adopt the SEMS program, and subsequently each jurisdiction affirmed its adoption of the new emergency management program. Thus, SEMS took effect on December 1, 1996.

The state's Office of Emergency Services is charged with coordinating the activities of all state agencies for preparation and implementation of SEMS. OES is also responsible for coordinating state and local agency response for multi-agency or multi-jurisdictional emergencies.

With nearly 500 fulltime employees, the state's Office of Emergency Services (OES) is organized along four main divisions. These four divisions include: (1) the Executive Division, which consists of the Director, Information and Public Affairs, Legislative Affairs, and the Administrative Branch (including accounting and budget offices); (2) the regional divisions, comprised of the three administrative and six mutual aid areas into which the state is divided; (3)

Emergency Operations, Planning and Training, with emergency management technical expertise, and the Fire and Rescue, law enforcement, mutual aid, and utilities branches; and (4) the Disaster Assistance Division, which coordinates federal and state public assistance and individual grants.

SEMS and Perspectives for Organizational Capacity, Incentives, Learning

Between SEMS' December 1996 enactment and September 2003, the state experienced sixteen different presidentially declared national emergencies. The types of emergencies involved included fires, floods, earthquakes, and civil disturbance; several of these emergencies involved over 43 counties.

Has SEMS met its stated objectives? The question is pertinent because effective 2006 Homeland Security and FEMA mandated that SEMS' principles be adopted by other states. The federal program is entitled National Incident Management System (NIMS), and is modeled after SEMS. The success of SEMS' implementation, thus, needs to be addressed.

California Model for Fighting Wildfires: Who's in Charge?

To examine SEMS, two disastrous wildfires are considered as case studies. The first wildfire occurred in 1993, six years prior to SEMS' enactment. The second wildfire that was

researched occurred exactly one decade later in 2003, nearly seven years after SEMs' statewide enactment.

Thus, it is important briefly to describe wildfires and the responsibility for managing them within California. Wildfires refer to fires found on land with natural vegetation, such as forests, brush, and grass. The term wildland fire also reflects the same occurrence. The landmass involved may be in developed areas or in sparsely populated regions. When man-made development interacts with the undeveloped wildlands, the area is called wildland-urban interface (WUI).

Over sixty percent of the state's wildland-urban interface area is ranked as a significant threat for wildfire. This means the areas have a record of fire conditions beneficial to wildland fire, as well as the presence of structures. The high threat areas also include those with urban density, but susceptible to wildfire from high winds.

In California, statutory responsibility for managing wildland fire resources involves firefighting agencies from federal, state, and local government. These agencies depend on intricate agreements and practices to deliver the multi-agency wildland fire protection within the state.

California covers approximately 100 million acres of

all types of land, nearly 80 million acres of which are defined as wildlands (land masses characterized by natural vegetation, i.e., forests, brush or timber areas, etc.). As defined by statutes, either the state or the federal government is responsible for managing these wildland areas.

The state is accountable for over 30 million acres of mostly privately owned wildlands. The federal government is in charge of nearly 50 million acres, which are federally owned wildlands. Local government is most often responsible for protecting individuals and structures on the wildlands, although their specific areas of accountability are not so clearly defined by statutes. The remaining 20 million acres of California land primarily relies upon local jurisdictions for fire protection of structures and medical response, and approximately eight million acres comprise the wildland-urban interface area for the state (*California Legislative Analyst's Office*, April 2005).

State Responsibility Area (SRA)

In California, the state agency with the primary role for wildland fire protection on "State responsibility areas" (SRAs) is the California Department of Forestry and Fire Protection (CDF). State responsibility areas (SRAs) are essentially privately owned forestlands, watersheds, or rangelands. Examples of private ownership include timber

operators, ranchers, and private residences. Less than one percent of SRA land is publicly owned, and the Board of Forestry has sole authority for designating an area as part of the SRA. Generally, land masses comprising SRAs contain housing density of three or less units per acre (although other types of structures may exist here). Once this threshold is reached, the Board of Forestry will likely drop the SRA designation from the land, which is examined every five years.

On average, the CDF responds to approximately 7,000 large fires per year in SRAs, totaling approximately 130,000 acres (*Blue Ribbon Fire Commission*, p. 61). In order to contain fire size and the attendant risk of escalating costs, the CDF strategy is to respond immediately to wildland fires. Its goal is to limit all wildland fires to fewer than ten acres, rather than permitting them to run their course.

Local responsibility in State Responsibility Areas

By state law, local governments are not required to furnish fire services within SRAs. Still, most local firefighting agencies provide the services associated with structure protection and basic medical aid within SRAs. This practice is in keeping with the Board of Forestry policy calling on private citizens and local governments to provide life and structure fire protection within SRAs. Additionally,

the CDF will assist with response to wildfires within local and federal responsibility areas as necessary.

Federal Responsibility Area (FRA)

Federal Responsibility Areas (FRAs) are comprised of lands that federal agencies own and administer. Of the nearly 50 million such acres of California Federal Responsibility Areas, the United States Forest Service is the largest land holder of wildlands. Other federal agencies that hold wildland properties include the Department of Defense, the U.S. Army Corps of Engineers, the Fish and Wildlife Service, and the Bureau of Indian Affairs, among others.

In its 2005 review of the California Wildland Fire Protection System, the state's Legislative Analyst says this about responsibility areas:

Our review finds that as the number of structures in and adjacent to wildland areas continues to grow, costs for structure protection in connection with wildland fires have increased significantly. This has prompted calls for greater clarification of the respective roles of the various levels of government in providing structure protection...

The federal agencies vary in their approached to wildland firefighting. For example some agencies may follow a policy of containing fires when they are small. Other federal land managers may elect to permit fires to burn unchecked to improve or maintain resource values. With regard to life and structural fire protection, recent federal policies have stated that structural fire protection in wildland areas is the responsibility of the state and local governments.

The seemingly fluid nature of policies by various government agencies and jurisdictions serves to complicate the long-range planning efforts for emergency management implementation.

Summary

This chapter focused on California's emergency management policies. A historical review of California's emergency programs was discussed as well as the manner in which the state's emergency programs have evolved compared with federal emergency policies. Then a detailed examination of SEMS, California's current emergency management program, served to provide the basis for later evaluation of the effectiveness of the SEMS policy.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

Research Design

SEMS' requirements specify only that counties be organized according to SEMS' principles, and that SEMS' procedures be utilized for multi-jurisdiction and multi-agency emergencies. Counties must meet these criteria to be eligible for reimbursement of response related expenses. SEMS' regulations, however, leave to the discretion of each county *how* it will structure its emergency organization, preparation, and response methods.

The objective of this dissertation is to determine how elements of the policy process categorized as *organizational capacity, incentives, and learning* affected implementation of the California Standardized Emergency Management System (SEMS) on the basis of a multiple-case study reviewing emergency management policy for particular wildland fires in southern California within the counties.

The cases are the 2003 wildland fires that transpired after SEMS was enacted, one occurring in San Diego county and the other in San Bernardino county. A 1993 Orange county wildland fire is utilized as a foundational perspective prior to reviewing the 2003 case study fires. The Orange county fire occurred three years prior to SEMS 1996 enactment.

The following chart shows the magnitude of the fire sieges involved in the 1993 Laguna Beach Fire in Orange county. Also highlighted are the 2003 case study fires in San Diego and San Bernardino counties and their significance as the focus of the analysis.

<u>Emergency:</u> Type; Date; National Emergency Declaration	<u>Losses Incurred</u> Location and Scope of Damages	<u>Studied:</u> Organization of county and Specific Fires	<u>Compared:</u> County Demographics and Implementation
Wildfires			
<p>1993 Southern California Firestorms</p> <p>Oct.26- Nov.5, 1993</p> <p>1005-DR-CA On 10-28-93;</p>	<p><u>Counties of:</u> Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura.</p> <p>22 separate uncontained Fires; 6 counties; 15,000 personnel; 1,524 fire engines.</p> <p>Total Damage: \$41b; 333,700 acres; 1,241 structures; 162 injured; 4 deaths.</p>	<p><u>Orange County:</u> Laguna Beach Fire</p> <p>14,437 acres 306 engines 441 structures</p>	<p>Reports Considered:</p> <ul style="list-style-type: none"> • Recommendations of 1993 After-Action Report; • Mike Rohde Report; • FEMA Reports; • News Reports.
<p>2003 Southland Fires</p> <p>Oct.21- Nov.4, 2003</p> <p>1498-DR-CA On 10-27-03;</p>	<p><u>Counties of:</u> Los Angeles, Riverside, San Bernardino, San Diego, Ventura.</p> <p>21 separate uncontained Fires; 5 counties.</p> <p>739,597 acres burned Structural Losses: 3,631 homes; 36 commercial bldgs.; 1,169 outbuildings; 500 farmlands burned; 246 people injured; 24 deaths.</p> <p>CA's most costly disaster.</p>	<p><u>San Bernardino Co.</u></p> <p>1. Old Fire 91,000 acres*</p> <p>2. Grand Prix Fire 58,000 acres*</p> <p>*The two fires merged at the El Cajon Pass and were fought as one fire.</p> <p><u>San Diego County:</u></p> <p>1. Cedar Fire 275,000 acres</p> <p>2. Roblar 2 Fire 8,500 acres</p> <p>3. Otay/Mine Fire 46,000 acres</p> <p>4. Paradise Fire 57,000 acres</p>	<p>Reports Considered:</p> <ul style="list-style-type: none"> • Blue Ribbon Fire Comm. 2003 After-Action Report; • The Story: CA Fire Siege 2003 • 2003 So CA Wildfires: Constructing Their Causes; • So. CA Firestorm 2003 Lessons Learned Center; • SD Regional Fire Prevention/Emergency Preparedness Task Force; • City of San Diego Fire-Rescue Dept. Cedar Fire 2003 After-Action Report; • FEMA Reports; • Changes to SEMS since its 1996 enactment.

A total of three counties involved in these fires were selected for research. Orange, San Bernardino, and San Diego counties were chosen because each of these counties is located within southern California, and each has been subjected to numerous firestorms over the years. For each of the counties--Orange, San Bernardino, and San Diego--the fires studied represent the most devastating fire in that county's history. Additional factors support the selection of these counties for study. The Cedar Fire in San Diego county is the worst fire in California's history, and the county is the third largest in the state. San Bernardino county is the largest county in the United States, occupying a land mass equal to thirteen times the size of Rhode Island. The scale of the fires in both San Bernardino and San Diego counties required the intervention of multiple actors, thus, posing the issue of coordination.

Unlike hurricanes, whose names are selected by a national agency prior to their occurrence, fires are typically named by local firefighting officials. Most often, the name of a fire reflects its geographic proximity--perhaps to a nearby street or specific community, a particular park, section of a forest, a canyon, or even a fire house. Accordingly, the fires examined in this research were named as follows: (1) the Laguna Beach Fire, which occurred in

Orange county during the 1993 Southern California Firestorm involving 6 counties; (2) the Cedar Fire, taking place within San Diego county during the 2003 Southland Firestorm involving five counties; and (3) the Old Fire and Grand Prix Fire, which were actually two different fires and eventually merged into one. These fires were located in San Bernardino county and occurred during the 2003 Southland Firestorm involving five counties.

The 1993 Laguna Beach fire in Orange county is included to demonstrate how one community and county was ravaged by fires in the 1993 pre-SEMS firestorm. The study will review how this area has responded since the 1993 fire, including changes made to local statutes since the county's worst fire.

Next, case studies from the 2003 Southland firestorm are examined. The case studies concentrate on specific fires occurring within the counties of San Bernardino and San Diego. The outcome in the 2003 firestorm for San Diego is very different from what transpired in neighboring San Bernardino county, where officials have been hailed for their efforts. Implementation was examined within both counties to determine if activities associated with implementation may be tied to the outcomes for each jurisdiction.

The data are sufficiently similar for each county or emergency, and the selections denote a sufficiently

demonstrative sample of situations from which reliable generalizations may be extracted about implementation.

The nature of questions asked in this research, the character of the units of analysis, and the research settings corresponded closely to those defined by Robert Yin (2003) in his definitive work entitled *Case Study Research: Design and Methods*. He indicates case research methods are frequently employed for political science and public policy. Yin also notes case research is particularly well suited to answering questions of how and why, where specific causality cannot be fully investigated from empirical perspectives due to lack of control of behavioral events, and where contemporary events are the focus (p. 17). This corresponds to questions at hand in this study.

Also considered were the growth patterns for development in the two counties, the county budgets, the share of the budgets earmarked for emergency management and fire services, governing structures, the numbers of emergency management and fire services' employees in each county, as well as the organization of various fire and emergency services' offices. Further, the amount and type of training and coordination was reviewed for each county.

A side-by-side analysis was conducted of the case studies of California's 2003 wildfires. The investigation

sought to identify implementation elements most closely associated with successful results. Further, the emergency type selected for study--wildfire--was chosen because this kind of disaster has been prevalent in California's history and provided an opportunity to examine response methods over a period of time in different geographic locations.

A multiple case design as described earlier in this chapter makes it possible to "understand how processes and outcomes are qualified by local context...[and will] allow the research to develop more powerful explanations and descriptions" (Miles and Huberman, 1994, p. 172). Moreover, this multiple case design is appropriate (Yin, 1994) in order to identify common elements of the implementation process.

Inquiry regarding SEMs' implementation was directed to multiple stakeholders. As such, multiple units of analysis were essential to evaluate the overall answers to questions. Each stakeholder constituency views the process from its own perspective. The question of replicability is viewed through a horizontal lens by the state, whose interest is assuring that the intended standardization occurred in state agencies. The state also looks at standardization through a vertical lens to assess local implementation. FEMA considers replicability from a vertical view, seeking principles of the system to be taken from California's SEMs for adoption and

implementation nationwide within the National Incident Management System.

The two assertions and subordinate questions listed previously required procedural measures specific to each assumption. To operationalize the inquiry into this study, explicit measures were selected to evaluate the successful implementation of SEMS. To ensure that any conclusions reached are correct, it is important that the measurements be as accurate as possible. The most significant risks to measurement accuracy are the result of either unreliability or invalidity (Johnson p.81).

Validity and reliability questions are often raised regarding case research. Because questions of replicability are central to this research, a multiple-case design is essential. This follows the logic that calls for multiple experiments in an empirical design. Since the issue is of "literal" rather than "theoretical" replication, a single set of cases was sufficient. However, multiple stakeholders were involved in the analyses with differing perspectives on the processes involved; thus, a multiple-case design was an appropriate methodology to employ in this research.

California's geographic composition heightens its need for effective emergency management. The few studies conducted for emergency management programs have urged coordinated

action among government agencies. California's SEMS program claims standardized coordination of agencies and governments as well as success in implementation. Further, the plan was written to emphasize flexibility and adaptability. This dissertation, therefore, sought a systematic examination of California SEMS' implementation to explain how implementation was affected by organizational capacity, incentives, and learning.

Organizational Capacity

Organization, planning, and resources were examined for both case study counties--San Bernardino and San Diego--to determine if implementation results may be established for these aspects of organizational capacity. Organizational capacity is also revealed by shared governance activities of collaboration, coordination, and cooperation among agencies and jurisdictions.

Each of these units of analysis requires leadership embracing a cooperative and diffused decision-making style. Schroeder describes this as a network perspective and asserts that this approach is necessary for effective emergency management, because political and administrative objectives are often at odds. As a result, leadership is also reviewed as part of organizational capacity.

Incentives

Inherent in SEMS is a negative incentive—that is, the lack of financial reimbursement—for those agencies and jurisdictions not complying with the policy's procedures. However, more positive incentives also exist both for individuals and organizations making use of SEMS' guidelines.

Incentives do not self-activate (Bardach). Individuals must first embrace the advantages of enhancing organizational expertise and professionalizing personnel. Motivation may be spurred through the availability of grants, while peer recognition and personal excellence serve as the driving forces for some individuals.

Learning

The accumulated historical experience of institutions discussed by March and Olsen is depicted in this study as learning. The learning may be portrayed by organizations through the incorporation of post-incident recommendations and modifications to policies or procedures. Other organizational learning demonstrations may reflect changes in values and goal objectives as well as the inclusion of input from street level bureaucrats.

Individual learning is more complicated to assess for this study; still, training efforts, both the kinds and

amounts, are one representation of individual learning. Another representation includes adaptation--how well individuals adapt to various types of incidents as well as to new roles, such as promotions.

Thus, the independent variables refer to the effects of organizational capacity, incentives, and learning that shaped SEMS' implementation, and the extent to which SEMS met its stated purposes throughout the process of policy design, development, performance, evaluation, and adjustments. The dependent variable for this study refers to the successful implementation of SEMS in emergency situations, which as defined throughout this study indicates meeting its stated objectives.

The use of the terminology independent and dependent variables should not be construed as a statement of causality among these variables. As is the case in all social science situations, the number of variables involved--whether necessary and/or sufficient--and their sequencing can be neither known nor determined. The author is simply hypothesizing that there is a relationship between identifiable and concrete events and that this hypothesis may be tested empirically through an examination of data evidence.

To explain these phenomena, research was organized to include multiple sources of evidences reflecting qualitative and quantitative approaches. Methods for collecting these data sources are reviewed in detail later in this chapter, while a brief summary of each data source utilized is outlined below:

1. Written documents. Includes government records; legislation; reports from government agencies, commissions, private organizations, research centers, and associations; and publications including material from government brochures;

2. Semi-structured interviews. Conducted with leading subject matter experts, emergency management authorities, and executives involved in the specific fires, as well as political and bureaucratic officials involved with SEMS;

3. Field observations. Conducted of emergency operations command centers for applicable jurisdictions;

4. Surveys. Targeted to relevant political and emergency management leaders;

5. Recommendations from government hearings. These were made by public officials, first responders, and private citizens as they reviewed detailed response aspects of the 2003 firestorms in southern California.

Research evolved from the assertions and subordinate questions presented. To reach answers, each required a modified investigative approach as described in the following section.

Data Collection

Data collection methods were determined by first identifying the attributes to be examined for the variables organizational capacity, incentives, and learning. Next, units of analysis were identified for each variable and attribute. Then, the measurable indicator was classified for each. The variables, attributes, units of analysis, and measurable indicators for the variables are highlighted below.

Variables And Attributes	Units of Analysis	Measurable Indicators Qualitative/Quantitative	Methodology to be Utilized
1. <u>Organizational Capacity</u>			
• Systemic	Interoperability; Centralized vs. diffused decision making and authority; Leadership--urges cooperation.	a. Consistent systems of operational planning, command/ communications; b. Local access to latest equipment, technology; c. Amount of joint vs. individual agency, training.	a = I, S, D*
• Shared Governance	Collaboration / coordination among public agencies and with private actors. Flexibility--kind and amount; Inter- agency, cross- jurisdiction interaction; Local expertise.	d. Formalized agreements; e. Uniformity of Incident Command System; f. Private actor Role g. Degree of inter-agency and cross jurisdictional standardization for training, terminology, equipment, staffing.	b = I, S, D c = I d = I, D, e = I, S, D f = I, S, D g = I
• Adaptation			
2. <u>Incentives</u>			
• Financial	Budget appropriations; Grants.	h. Funding changes affecting: requirements, sources, targets, amounts.	h = I, S, D
• Administrative	Regulatory capacity; Expand organizational expertise.	i. Professionalization of agency personnel; j. Results of Mutual Aid usage and Frequency	i = I, S, D j = I
• Social	Reputation; Acknowledgement.	k. Awareness, perceived value and acceptance for SEMS' participation	k = I, S
3. <u>Learning</u>			
• Policy	Policy capacity and design; Refinement or adjustments.	l. Post-incident recommendations with input from street level bureaucrats.	l = I, S, D
• Institutional	Organizational knowledge; Effectiveness of Operational Area <u>Lessons Learned:</u>	m. Staffing refinements; n. Changes in values and goal objectives.	m = I, S, D n = I, S
• Bureaucratic	Knowledge transfer; Innovation; Adoption.	o. Policy changes; p. equipment/service changes in tactics.	o = I, S, D p = I, S, D

I = Interview; S = Survey; D = Documents

These concepts are presented in a logic model entitled A *Conceptual Chain* in Appendix B of this dissertation. To test the first thesis, local government implementation of SEMS was investigated by utilizing the following sources:

1. Written Documents. Government official records were utilized as data sources for implementation. Archival data sources were reviewed for the years during which the fires occurred, including those from the jurisdictions involved for each fire being studied.

County records were examined to reveal budgets as well as the number of employees dedicated to emergency management. Then, budgets for the local offices of emergency services were obtained, as well as the number and types of employees for each office. Next, the budgets and number of employees for the fire departments were gathered. These numbers were then conveyed as a percentage of the overall total for the number of county employees and budgets.

For the next step in assessing written records, information was gathered containing 1990 and 2000 federal census data for California. Also obtained were the density indicators for the relevant periods and targeted counties. Specific data sought included population numbers, types of housing, building patterns (in particular building into

wildland areas), and socioeconomic data indicators of local tax bases.

Government Codes were studied, including sections 8550-8551 of the California *Emergency Services Act*, authorizing the development of integrated functions for emergencies. Reports and letters were examined from government agencies, professional associations, and private participating organizations--including materials such as government brochures. Documents originating from professional organizations involved in SEMS implementation were reviewed in emergency management. A sample of the organizations includes: National Emergency Management Association, California Association of County Governments, California League of Cities, California Peace Officers, California Fire Services, Bay Area Regional Governments, Southern California Association of Governments, SanDAG, and National Association of Governors.

Newspaper and media archives were scrutinized to garner local and regional news reports covering relevant wildland fires in Orange, San Bernardino, and San Diego counties.

Additionally, written documents were obtained from the state of California, including after-action reports for the 1991 Oakland Hills Fire as well as those for the 1993 and 2003 southern California wildland fires. Some after-action

reports were compiled by governor-appointed state investigative commissions charged with examining each fire. Additional after-action reports and summaries were studied from relevant agencies and jurisdictions, including the San Diego County Grand Jury, which also investigated handling of the Cedar Fire. In this stage, specific recommendations were coded from the 1993 after-action reports and then compared to those from the 2003 after-action reports. These recommendations are summarized in Chapter 8.

2. Interviews. Face-to-face interviews were conducted with nineteen different emergency management experts as well as relevant political and bureaucratic leaders.

Initial discussions were held with leaders of the state's emergency services organizations. These discussions were designed to review my understanding of the relevant issues for this study and to obtain pertinent background material. These initial discussions were helpful in providing the foundation and perspective for subsequent research interviews conducted with key emergency management officials pertinent to the case studies selected for this research.

The initial discussions involved meetings with Dallas Jones, Director, California Governor's Office of Emergency Services; Charles Wynne, Regional Administrator, California Governor's Office of Emergency Services; Robert Gerber,

Director, Anti-Terrorism Unit, California Governor's Office of Emergency Services; Constance Perrett, Division Chief, Office of Emergency Management, Los Angeles County; Ellis Stanley, Assistant City Administrative Officer, Emergency Preparedness Division, City of Los Angeles; Lou Moret, Executive Director of Southern California Association of Governments; California State Senator William Campbell, author of California emergency management legislation; Blair Springer, former Consultant, California Senate Emergency Services Committee; and Jerome Haleva, consultant and lobbyist for California and U.S. emergency management organizations.

Once confident that a solid grasp of the critical issues surrounding SEMS had been mastered, it was time to begin the process of preparing for the semi-structured interviews. This involved obtaining approval to conduct interviews from the Institutional Research Board (IRB) of the Graduate Center at City University of New York (CUNY).

Part of the IRB approval process necessitated passing an examination relating to interview protocol requirements. Additionally, the researcher was required to submit the list of questions and individuals for whom interviews were planned, along with a detailed description of the methodology involved in this study.

The next tasks undertaken concerned conducting a series of interviews with leaders of emergency management organizations for California, and the counties of Orange, Los Angeles, San Bernardino and San Diego, as well as relevant city officials within these counties.

Each interview was conducted face-to-face after an appointment had been arranged, and each interview took place at the office of the interviewee--with one exception which involved a state official who set the meeting at a time he was traveling to southern California. That meeting occurred at a Denny's coffee shop.

All officials who were interviewed signed consent forms, and all individuals requested that their names remain anonymous in addition to requesting that the conversations not be tape recorded. Nonetheless, it was understood that the information provided during the course of the interviews would be included in this report.

Interviews occurred between June 2002 and June 2006. All nineteen individuals interviewed were the leaders involved in affecting policy implementation for the 1993 and 2003 firestorms. Interviews lasted from 30 minutes to over five hours, with more than 80 percent of the interviews lasting three hours or longer. Meetings with each individual were accomplished by either the researcher's personal contact

or as the result of a request made by one of several mutually-known professional colleagues.

The researcher was employed for thirteen years by California State Senator William Campbell—often termed “Mr. Emergency Services,” reflecting his numerous legislative endeavors over the years to professionalize California’s emergency services. During employment with Senator Campbell, the researcher was actively involved in researching and assisting with legislation on behalf of emergency management. Moreover, for a number of years my father served as the Assistant Commissioner of the California Highway Patrol, where one of his responsibilities included coordinating state emergency services activities on behalf of that agency.

This background proved a strong benefit in gaining access to key individuals for this study. Further, it is believed that officials viewed the researcher as a credible professional, with whom they could be candid.

Careful notes were taken during the course of each interview, and all notes were meticulously transcribed within 24 hours of the interview. Further, this researcher is accomplished in taking shorthand; and this skill was useful during this study and allowed for extensive, accurate notes, generally on a word-for-word basis. This was a particularly valuable tool during this research, as all interviewees

requested that our conversations not be recorded. Once assured that the request would be honored, each individual approached the discussion in a very open and straightforward manner.

Interview questions were guided by the hypothesis for this study. The following are examples of research subjects investigated for evidence of their impact throughout implementation:

Organizational capacity

- Some counties within the state have emergency services departments dedicated exclusively to emergency management activities; others are structured within law enforcement or as a part of fire services offices. Has this been a factor in implementation success?
- How have efforts of multiple agencies been coordinated?
- How were planning, training and command/ control structured at vertical and horizontal government levels? How were these arrangements extended to relevant private groups?

Incentives

- How have government grants affected local government implementation variation?
- How has policy implementation feedback been translated into policy changes?
- How have levels of funding reflected requests from emergency services agencies?

Learning

- How was outcome shaped by factors such as voluntary participation in planning by private entities (e.g., hospitals or not-for-profits) or organized citizen volunteers?
- What implementation differences are revealed for emergencies occurring prior to and after SEMS enactment?
- How is political will characterized for affected counties?

Extensive advance preparation was completed by the interviewer prior to each meeting. Available documents relating to pertinent issues and events were studied. This provided the researcher with a strong foundation for forming the most relevant questions, allowed the researcher to maximize time by guiding questions to key issues, and enabled the researcher to verify the accuracy of information gleaned from other sources. This advance preparation also served to guide the interview into a deeper level of discussions issues in an effort to uncover complex considerations involved in emergency implementation.

In addition to face-to-face interviews, some telephone interviews were conducted. All interviews were semi-structured to allow for improvisation during the conversations. That is to say that they were guided by standardized, pre-written questions amended as required to

take account of the respondents' differences in backgrounds, experiences and expertise.

3. Surveys. An implementation-related survey instrument was developed and distributed to key actors. Data obtained were analyzed for patterns and compared to data gathered from the sources outlined above.

The surveys were sent to those involved in various aspects of California's National Disasters during the 1993 and 2003 wildfires. The survey questions were designed to seek information regarding policy variations since the adoption of SEMS. Information was sought for the 1993 and 2003 wildfires affecting *Organizational Capacity, Incentives, and Learning*. These survey data form the basis for the analysis described in Section C of this chapter entitled, Data Analysis.

Once the majority of interviews were completed, the researcher mailed the survey documents to targeted individuals. On June 20, 2005, the same survey was sent to two different groups of individuals. First the survey was sent to the members of the Governor's Blue Ribbon Fire Commission (BRC). Then the survey was sent to local emergency services officials and first responders in the southern California area involved in the 1993 Southern California Fires, as well as those involved in the 2003 Southland Fires.

The BRC is a group of thirty-five emergency management and political leaders in California appointed by the Governor. The Commission was assigned the responsibility of investigating activities surrounding emergency response to the 2003 Southland Fires.

The BRC members received the survey via U.S. mail along with a letter of introduction from Senator William Campbell, Chairperson of the Governor's Blue Ribbon Fire Commission. Senator Campbell's letter of introduction requests each Commission member to complete the survey and describes the significance of this research.⁵

A letter of introduction from Senator Campbell also accompanied the survey sent to the second group of local governing officials, consisting of southern California emergency services leaders, first responders, and elected office holders. Surveys and letters were sent to individuals in the above categories employed by the counties of Los Angeles, Orange, San Bernardino, and San Diego who held positions of emergency services managers, sheriffs, county administrative officers, boards of supervisors, and fire chiefs.

This survey sent to local governing officials is identical to the one directed to members of the BRC and

⁵ A copy of the letter prepared by Senator Campbell and sent with the survey is reproduced in this report within the section entitled Appendix.

consists of thirty open-ended questions designed to provide insight into implementation issues surrounding SEMS.

Emergency management implementation may be complex, highly specialized, detailed, and technical; and the professional role of an individual survey respondent may embody all of these characteristics. Thus, in order to allow survey respondents to fully discuss their knowledge and perspectives, open ended questions were selected.

Survey questions were developed over distinct phases. First, the matrix was reviewed that indicated the connection between variables, attributes, units of analysis, measurable indicators, and the specific measurements to be utilized. Then, after-action reports were studied for the 1991 East Bay Hills Fire, the 1993 Southern California Fires, and the 2003 Southland Fires. Next, after-action reports from individual agencies, professional associations, and governmental jurisdictions were examined, as well as newspaper accounts.

The recommendations found in these reports were compared to objectives identified for SEMS. Next, a summary was prepared by the researcher that synthesized the recommendations from the reports. (see appendix). Based upon these data, the researcher then drafted the survey questions.

The first series of questions was provided to the researcher's dissertation advisor and co-advisor. Subsequent

to their input, the researcher made some minor modifications and the survey was submitted to the CUNY Graduate School Institutional Review Board and the researcher's dissertation advisor for approval.

After receiving this approval, a pilot study of the survey was then sent to political leaders, agency officials and first responders involved with California emergency management. Once these comments and suggestions for minor editions were received, the final draft of the survey questions was prepared. This version was sent to professional staff members employed in emergency management. Feedback was quite positive to the final draft, and the survey was then finalized for dissemination.

Comments received from survey respondents indicated that completion of the survey involved a minimum of 3-4 hours of work from participants. Although completion of the survey required a substantial time commitment on the part of participants, the researcher was gratified to receive completed survey instruments from the state of California as well as each of the major counties involved in this research, as well as Los Angeles County. This was important because it provided the researcher with a rich source of data regarding each jurisdiction.

4. Field Observations. Site observations to governmental emergency command centers were conducted in specific phases. First, to review my understanding of the subject, preliminary site visits took place at various state, county and city emergency command centers. Next, site observations were conducted at each specific command center within the jurisdictions being studied. Site observation documentations were integrated with other data and analyzed with interview and survey data. The objective was to define patterns and trends to be scrutinized as part of the overall effort to determine factors affecting SEMS' implementation.

Preliminary site observations were conducted at the emergency operations command centers (EOC) for the City of Los Angeles and for the County of Los Angeles. Neither site was included in the case studies for this research. The reason for these observations was to garner a foundational perspective of emergency operations command centers as a basis for site observations at the case study locations. No formal protocol was utilized during the visits to Los Angeles city or Los Angeles county command centers.

Case study site observations took place at the emergency operations command centers (EOC) for San Diego county, San Diego City, Orange county, San Bernardino county, and the state of California. The protocol incorporated visual

observations of the command centers' logistics to determine if the command centers employed SEMS' guidelines for organizing the participation of various governmental agencies.

Once an emergency is activated by a specific jurisdiction, SEMS' procedures require each individual working in the emergency operations command center to wear a pre-determined color of vest designating that employee's functional responsibilities. For example, individuals included in the operational staff wear red vests; those in logistics wear orange vests; green vests designate financial responsibilities; blue vests indicate planning functions; and management personnel don yellow vests.

Additional case study observations were made regarding the physical location of each jurisdiction's command center. For instance, during the researcher's initial visit to the California Emergency Operations Center (EOC) in July 2002, the location was marked by freeway signage, although a subsequent visit in June 2006 was absent the freeway signage.

Unlike other emergency operation command centers reviewed for this study, the EOC for the city of San Diego is located in on the upper level of a public, commercial high-rise office building accessible by elevator. On the other hand, the command center for the city of Los Angeles is also

located in a multiple story building, but it is part of the city hall complex and is located in the basement of one of those buildings. A visit to the Los Angeles city command center was only accomplished subsequent to numerous requests including a background check of the researcher requiring submission of the researcher's social security number, driver's license number, and car license number.

Access to the command center for the county of Los Angeles required similarly rigid pre-admission standards, as well as the researcher's promise not to reveal the exact location of the unpublished address of the command center which is located away from county offices in a rural section of Los Angeles county on a high knoll providing visual ability. The command center is surrounded by locked gates and fences and is accessible by winding roads not visible to the ultimate location.

Access to emergency command centers for the city and county governments of Los Angeles is comparable to the limited access available at the Orange county EOC. This command center is removed from public access and built in an extremely remote area on one of the highest points in the county to provide unobstructed visual observation by emergency personnel as well as enhanced security. Access is granted by pre-arrangement; and upon arrival, visitors are

required to announce themselves at a locked gate monitored electronically from within the complex. San Bernardino county's command center is positioned in a semi-rural area separate from both the county Fire Department and Sheriff Department. Surrounded by fence and a locked gate, access is monitored from inside the command center. The center is located in the city of Rialto, away from the main county facilities.

The San Diego county command center is part of a county complex of buildings open to the public. The building for the command center has a locked gate that separates it from the county's surplus materials that are collected and disseminated outside the command center. Access to the command center building is monitored from inside the command center.

5. Hearings. A number of large-scale public hearings were held following the 2003 Southland Fires. Hearings were held by the BRC in each of the five counties affected by the firestorm from January through August 2004. The researcher was able to attend the hearing in Ventura county, where numerous state officials testified. Participation in this hearing provided additional access to key individuals and opportunities to gain additional information on crucial aspects of SEMS as they impacted these fires.

Data Analysis

One matrix was developed reflecting key policy characteristics for SEMS' implementation by local jurisdictions in San Diego and San Bernardino counties. These data included budgets for each county's emergency services program, the numbers, types, and status of employees, equipment, and training programs.

A second matrix was then created reflecting specific emergency situations and responses. This matrix revealed key factors for comparison of damage amounts, quantity and types of equipment used, extent of mutual aid, inter-agency and jurisdictional issues. The data were then ready for assessment to identify patterns, characteristics, and themes revealing a larger perspective of the research.

Finally, the contents of this dissertation were made available to a range of subject experts to review information included in the study. This step was taken to ensure accuracy of data utilized.

Role of the Researcher: Professional Field Experience

The researcher's understanding of the subject derives from several sources, including extensive personal interviews conducted as foundation for this dissertation in 2002. As stated previously, the researcher served as District

Coordinator for California Senator William Campbell for thirteen years and worked on numerous emergency services' legislative proposals. Recognizing his contributions to the state's disaster preparedness, the new California Operational Command Center for Emergency Services is named the Senator William P. Campbell Building.

Additionally, my professional background was beneficial for this project. My former employment as an on-air broadcast journalist and political commentator was good preparation for structuring and conducting interviews. Further, during the course of my California political career, I had several occasions to design and conduct surveys. In these capacities, I collaborated with state political and emergency services' leaders; legislators for state, county and city governments; consultants for emergency services organizations; and heads of local law enforcement and fire services departments. These individuals continue to make valuable contacts for me and to share information and perspectives.

Summary

The focus of this chapter was to identify the methods utilized in developing and assessing data for this research. A multiple case design was selected in order to identify common elements of the implementation process involving SEMS' implementation.

Inquiry regarding SEMs' implementation was directed to multiple stakeholders to identify dimensions of the implementation process involving organizational capacity, incentives and learning.

CHAPTER 5

ORANGE COUNTY: A LOCAL STORY

"Emergency Management is a result of local intent and political will."

The Political Environment

California's emergency management program is more than a response system. Like emergency management programs elsewhere, California's program is also a story of politics. If Tip O'Neill's aphorism is correct that "all politics are local," then so, too, is Jesse Unruh's observation that "money is the mother's milk of politics."

The story of California's current emergency management program involves both local politics and money--and both were in play prior to the 1991 Oakland Hills firestorm. Funding disputes for local public safety programs may be traced back nearly four decades, as two seminal issues altered the course of public safety financing for the state.

First, in 1971 the California Supreme Court heard the matter of *Serrano vs. Priest*, regarding the equalization of

educational funding. In its landmark ruling, the Court stated that property tax was an unconstitutional means of financing public education. The decision was contested in several courts for the next few years, but essentially remained intact.

Then in June 1978, California voters overwhelmingly passed state Proposition 13, a ballot initiative reducing residential property tax by nearly 60% and limiting the amount of future property taxes.

Nowhere was the impact of these two matters felt more sharply than at local government. Divested of a major revenue source from property tax, the California legislature moved quickly to revise funding formulas for major programs such as education. The result was the state appropriation of local government revenues, which in turn caused local jurisdictions to severely cut services and at the same time levy a record number of new user fees and license charges. New homes constructed subsequent to Proposition 13 were exempt from the measure's tax benefits; but according to the revised funding formulas, the state continued to keep these revenues. Tensions between state and local governments intensified.

Then a decade later, California suffered a fifteen-year series of record-breaking disasters and public crises. Below is a summary of some of the major occurrences that strained public budgets and political relationships:

1. *Summer 1989 Mediterranean Fruit Fly Infestation* and contamination declared for Los Angeles, Santa Clara, and San Bernardino counties.

2. *October 17, 1989 Loma Prieta Earthquake* Richter scale registered 7.1; affected West Oakland, San Francisco Bay Area, and Santa Cruz Peninsula; sixty-six people died; 3,700 injuries; and \$7 billion in damages;

3. *November 1989 Mediterranean Fruit Fly Infestation* and contamination declared for Orange County;

4. *June 1990 Fires in Los Angeles, Riverside, Santa Barbara, and San Bernardino counties;* \$300 million in damages; 3 deaths; 90 injuries; 22,000 acres burned;

5. *October 20, 1991 Oakland Hills Fire* Twenty-five deaths, 150 serious injuries, 2700 structures destroyed. Second worst fires in CA history (after 1906 San Francisco earthquake-related fire);

6. *February 1992 Severe Winter Rainstorms* in Southern California, five deaths; \$123 million damages;

7. *April 29, 1992 Los Angeles Civil Disorder* (aka Rodney King uprising); 53 deaths; 2,400 injuries; 140 separate fires; loss of 20,000 jobs, \$1 billion in property damage;

8. *October 27, 1993 Southern California Fires,* \$41 billion in structural damages;

9. *January 17, 1994 Northridge Earthquake* 6.7 Richter; \$40 billion in property losses; 57 deaths; 12,000 injuries;

10. *Winter 1995 El Nino Storms* In Northern and Southern California; \$1.3 billion in damages; all 58 counties were declared national disasters; 28 deaths;

11. *December 1996 - January 1997 Floods* Affected 300 sq. mi. of land; 23,000 homes and 2,000 businesses damaged or destroyed; 8 deaths; \$1.8 billion in damage costs;

12. *February 1998 El Nino Storms* State and federal disaster declaration for forty-one of fifty-eight counties. Over \$500 million damage and dozens of deaths (*California OES Origins and Development*, p. 40-44).

Beginning in 1992, and faced with serious revenue shortfalls, the state redirected \$4 billion from city, county, and special district property tax revenues to schools and community colleges. Thus, the state was able to decrease its use of the general fund revenue for education by depositing the revenues into a countywide fund known as the Educational Revenue Augmentation Fund (ERAF).

Also in 1992, the state legislature voted to place a measure on the upcoming statewide ballot that would dedicate a one-half cent sales and use tax to finance local public safety services. The November 1993 California elections included ballot measure Proposition 172 designed to provide local governments with a permanent revenue stream (one-half of one percent of state sales tax) for public safety to offset a portion of the \$2.3 billion in local government revenue losses resulting from Educational Revenue Augmentation Fund (ERAF).

The 1993 California election was on the heels of one of the worst fire sieges ever experienced in the state--the 1993 Southern California Firestorm--and Proposition 172 passed with a 58% vote from the statewide electorate. A direct result of the 1993 wildfires was extensive mutual aid costs incurred by a number of fire departments and local jurisdictions. Subsequent to the enactment of Proposition 172, questions arose regarding how local governments were appropriating the

money. Inquiries occurred after reports surfaced, such as San Bernardino county expending the money for midnight basketball to divert gang activity. Eventually, California Attorney General Dan Lundgren issued the opinion that the definition of emergency services could be determined by local officials.

While the attorney general's opinion resolved issues surrounding how money allotted for emergency services could be spent, more concerns arose regarding which agencies should receive which amounts. For instance, in Orange county's 2005 election, issues involving that county's *Measure D* ballot initiative pitted the Orange County Professional Firefighters Association against the Association of Orange County Deputy Sheriffs and other law enforcement unions. The dispute centered over the sales tax dollars earmarked for the deputy sheriffs and the district attorney. At stake was whether a portion of that money should be given to the firefighters.

After the 1993 passage of Proposition 172, the Orange county board of supervisors voted to split the new one-half cent sales tax revenue between the County Sheriff and District Attorney. Subsequently, a special district was created by the county and designated as the Orange County Fire Authority. Because special districts in the state were deemed exempt from the education revenue shift (ERAF), the new Orange County Fire Authority was funded primarily with property taxes.

Accordingly, law enforcement services were funded with the Proposition 172 one-half cent sales tax.

Proponents of Measure D, the Guaranteed Fire Protection and Firefighter Safety Funding Ordinance, argued that the measure would fulfill a promise to voters--namely, that Proposition 172 contained an "ironclad guarantee" that the money would be directed to fire protection. Further, the measure's advocates pointed out that none of the \$2 billion in dedicated public safety funds had been allocated to fire protection. This, while firefighters worked with 30 and 40-year old fire engines and helicopters; response calls that increased by 63% in less than 10 years; and with the addition of only three percent more personnel.

On the other hand, opponents of Orange county's 2005 Measure D pointed to the high salaries of Orange county firefighters, who earn median salaries and benefits of \$175,181 per year (2005). After 33 1/3 years of work, firefighters retire with 100 percent of their base pay. Moreover, opponents cited a Fire Authority budget they claimed was inflated by \$52 million in additional revenue due to sky rocketing property values.

Ultimately, Measure D was soundly defeated by Orange county voters in 2005. Funding issues, however, were not in

question when the county suffered its most serious fire storm during October 1993.

**Pre-SEMS: 1993 Firestorm in
Laguna Beach, Orange County**

Statistics justify the characterization of the 1993 Southern California Fires as one of the worst wildfires in southern California history: four fatalities and more than 150 injuries; over 1,200 structures destroyed; nearly 334,000 acres seared by 22 different fires that spanned six Southern California counties; a response cost and damage estimates in excess of \$41 billion.

The 1993 Southern California Fires were a series of distinct fires that burned simultaneously across more than 300 square miles. The most egregious of these blazes was the Laguna Beach Fire in Orange county, which raged for five days. When it was over, the Laguna Beach fire that destroyed over 400 homes and scorched 17,000 acres also utilized 306 fire engines that had been organized into 57 strike teams and one task force, supported by 19 bulldozers, 25 hand crews, 12 air tankers, 10 helicopters, 1,968 firefighters, 300 police officers, and 150 U.S. Marines.

A study conducted in 2006 by the California Department of Forestry and Fire Protection (CDF) reveals contemporary wildfires are disproportionately more likely to be caused by

human factors than lightning. According to the report, leading causes of wildfires in the state between 2000-2005 were attributed to faulty equipment usage (27%), followed by vehicle-related causes (14%), and debris burning (10%). At the bottom of the list were the following: smoking 2%; playing with fire 3%; campfires 3%; power lines 3%; lightning 5%; and arson 7%. The remaining causes were either categorized as miscellaneous or undetermined.

When one of the above causes of fire combines with Santa Ana wind conditions, the mixture often explodes into disaster. Like many Southern California wildfires before and after the 1993 blazes, Santa Ana winds were a major factor for the 1993 Laguna Beach Fire. This fire first started along Laguna Canyon Road, just past Interstate 405, in an unincorporated section of Orange county that provides access to the picturesque community of Laguna Beach from Interstate 405. The blaze was caused by "suspicious origins," and ignited a few days after fires had begun to rage in other parts of the state.

Organizational Capacity

Orange County Fire Department (OCFD) first received a report of the fire within their jurisdiction at 11:50 A.M. on October 27, 1993. At that time, many of the department's resources were already engaged at the Stagecoach Fire located in eastern Orange county's Anaheim Hills. (Note: During the

1993 Southern California Firestorm, Orange county experienced three separate fires that burned concurrently—the largest of which was the Laguna Beach Fire.)

Chip Prather, Operations Assistant Chief of the Orange County Fire Department, was on his way home from the Stagecoach Fire when he was redirected to the Laguna Beach Fire. Arriving at the site moments after 12:00 noon, Prather established the command post along Laguna Canyon Road and assumed the role of Incident Commander for the incident. Minutes later a unified command was established, as fire resources began arriving from the Laguna Beach Fire Department.⁶

Prather's 12:08 P.M. "priority request" for eight air tankers was not filled due to lack of availability. This answer became emblematic of responses to equipment requests. In later after-action reports, Prather cited the lack of air resources as a "significant deficit in the initial response" (Rohde, p. 105). One commander involved with the Laguna Beach Fire summarized conditions this way:

From the beginning and throughout the incident, the fire would be driven by fire resource availability, or more specifically the lack thereof. Whether the issue was air tanker or helicopter availability, arrival of engine

⁶ Within the Incident Command System, a unified command reflects a combined effort of all agencies with jurisdictional responsibility to manage the incident.

resources, or lack of overhead staff, resources seemed always insufficient or too late to address the rapidly expanding and urgent incident demands. As such, incident commanders were required to make a series of compromises in strategy and tactics to the detriment of values at risk. This situation is typical for large southern California fire sieges, especially for incidents occurring after an earlier major incident or two has siphoned much of the available resources (Rohde. *Command Decisions During Catastrophic Urban-Interface Wildfire: A Case Study of the 1993 Orange County, California, Laguna Fire*.2002).

A lack of resources for responding to disasters may result from the fact that agencies do not have the equipment or manpower necessary for response, or the absence of resources may be due to the fact that they are being utilized elsewhere. In either instance, resource availability often reflects budgetary considerations that required allocating a finite sum of revenue over a wide area of needs.

Resource availability is also one of the downsides of the mutual aid system. During wildfire sieges that span numerous California counties, it is not unusual for a department to have some of its resources already deployed in response to another jurisdiction's needs. As discussed in Chapter 4, the wildfires that regularly attack southern California generally begin as Santa Ana dry winds blowing into southern California basins from the eastern deserts.

However, Santa Ana winds most often arise subsequent to wind patterns emanating from the northern United States along the borders of Canada, Idaho, and Montana, and then blow down through Wyoming. These gusts have fanned a number of

wildfires in northern California, requiring mutual aid from the southern portion of the state yet-unaffected by the Santa Anas. One San Diego fire official expressed frustration at this aspect of mutual aid by pointing to the state OES, which he claimed regularly diminishes his department's resources to fight fires in the northern parts of California.

The scenario described in the paragraph above also figures into the story of the 1993 Laguna Beach Fire. Orange County Fire Department Battalion Chief Mike Rohde depicted the fire fighting efforts in Laguna Beach. He points out that the foundation for the response began a day before the Laguna blaze ignited on October 27, 1993:

For the OCFD, the siege began with the dispatch on October 26 at 5:00 P.M. of two strike teams of engines (10 engines) to the Green Meadow fire in Ventura county. That fire burned 40,051 acres from the city of Thousand Oaks to the Pacific Ocean and took 66 structures along its way. Orange county strike teams would be committed there under mutual aid until October 31 and would not be available to assist in Orange county's own fire disaster hours later (Rohde. p. 79)

Fires ignite and spread quickly, leaving no time to replenish resources. The 1993 Laguna Beach Fire is an example of this situation. Within an hour of being reported, the fire was burning over 100 acres per minute. The California Department of Forestry and Fire Protection (CDF) diverted three air tankers and an air attack supervisor from other fires to Laguna Beach. Almost simultaneously, the incident

commander ordered an evacuation of the city's schools by the Laguna Beach police.

About 12:30 P.M., the fire split into three major canyons surrounding Laguna Beach, the Laguna, Emerald, and Moro canyons. Fueled by heavy brush and chaparral, the fires quickly consumed available resources; and the incident commander requested additional engine strike teams (50 more engines—for a total of 90). With local resources fully utilized, future resources were required from outside counties, involving a drive of two hours at best.

Intelligence reports foretelling the fire's direction, as well as communications between the unified command and field operatives, were often non-existent. An hour and a half after the fire was first reported, "radio frequencies were 'saturated' by overuse and many communications were inaudible or missed" (Rohde p. 88). Other times communications were unclear, resulting in orders being misunderstood—and then acted upon. (Ironically, in the chaos of the fire, one incident was reported in which directions had been misunderstood and acted upon—with a better result than would have been achieved had the correct instructions been received.)

Complicating communications problems was the fact that in 1993 most "law enforcement agencies in southern California

operate in the 450 MHz and 800MHz bands, while fire agencies focus on 150 MHz and 800 MHz. Few law enforcement agencies in southern California have radios installed in their vehicles which are even capable of operation on the 150 MHz CALCORD channel. A notable exception is the California Highway Patrol [CHP], which has CALCORD equipped in each of the handheld radios carried by almost every state [CHP] Traffic Officer. Their vehicle radios, however, cannot operate on CALCORD" (*The Southern California Wildfire Siege* 1993. p. 24).

Beginning the first day of the Laguna Fire, challenges to the infrastructure also plagued firefighters. By 2:00 P.M. water pressure failed, a problem that continued for the next six hours. This was not an unanticipated hindrance. Concerned about a large fire, one Laguna Beach fire official had spent years trying to improve water flow into the city with the creation of new reservoirs, but his efforts were thwarted by political and environmental interests.

What was unanticipated was the required evacuation of water district offices as the blaze rapidly approached that building. This added yet another communications obstacle, as the incident commander sought information on the capabilities and limitations of the already overloaded water system.

Less than six hours after it began, the blaze had scorched more than 17,000 acres—or over 45 acres per minute.

The Orange county board of supervisors declared a local state of emergency at 4:00 P.M. This act preceded Governor Pete Wilson's declaration of a state of emergency the next day for Orange, Los Angeles, Riverside, San Diego, and Ventura counties for the wildfires afflicting these areas.

Within hours of the fire's origin, the first command post, which operated out of a vehicle along Laguna Canyon Road, was threatened. In the hour after the fire crossed Laguna Canyon Road, nearly 250 structures were destroyed--more than four a minute.

A second command post was briefly set up at a local school. This site was also quickly abandoned, as 100-foot walls of fire raced down the face of the canyon to the second command site. The final command post was established at Main Beach along Pacific Coast Highway in Laguna. The Main Beach site had drawbacks of its own--primarily, that parking availability was practically nonexistent along this narrow stretch of Pacific Coast Highway dotted with tourist boutiques and art galleries.

Law enforcement command posts, activated in separate areas, were intended to coordinate evacuation efforts. However, the overwhelming nature of the inferno quickly expanded their duties also to include rescue operations--

activities for which most law enforcement personnel had neither previous training nor experience.

Similar difficulties befell individuals employed by the county Animal Control Department and public utilities' firms. An Orange County Fire Department battalion chief was appointed liaison officer for the fire by the incident commander. As liaison officer, he was charged with coordinating activities of various professional and community service stakeholders for disparate organizations, including utilities, law enforcement, public works, animal control, volunteer participants, and the Irvine Company (the county's major landowner). This responsibility was assigned to a veteran fire official, but one who had no training or experience as a liaison officer in a major fire. In a detailed study of the fire, this official reported that he felt that emergency personnel need to demonstrate flexibility and be ready to taken on new responsibilities as situations indicate.

Under his direction as liaison officer, the animal control shelter had to be abandoned, and animals were relocated as fire threatened to overtake that facility. An ongoing challenge was getting food and water supplies to the fire fighters—with a success rate that was below acceptable.

Then, numerous reports surfaced of difficulties encountered by utilities personnel as they attempted to access key sites. Among the obstacles faced was lack of contact with the incident commander. With communications limited, utility officials were operating with limited information in making determinations about turning off gas. Although the Southern California Gas Company Emergency Response Center was activated for these fires, communications were often delayed. Without flashing lights and sirens on their cars, utility officials and other emergency response personnel found access to fire and command sites nearly impossible to achieve.

When SEMS was enacted in 1996, it included the Multi-agency Coordination System (MACS). For several years prior to SEMS' activation, MACS had been utilized in major emergency incidents involving multiple government agencies. Like many of the principles utilized by SEMS, the origins were from fire services. As stated previously in this dissertation, MACS is a process that had been used for fire fighting activities that allows for sharing information, prioritizing incidents, and allocating resources. What was determined, though, during the 1993 fires was that agencies beyond fire services were not clear in their understanding of how MACS functioned. A particularly vexing question was the extent to

which the "service representative to a MACS organization represents and speaks for the whole jurisdiction or just the fire agency" (AAR p. 16).

There were also significant coordination issues between law enforcement and the OCFD. One example involves evacuation efforts normally managed by law enforcement. The OCFD did "not have a prior relationship or established level of trust with Laguna Beach City Police" (Rohde). Tensions mounted between the two agencies, while the local city police were reluctant to move rapidly on a full city evacuation of 23,000 people as ordered by the incident commander.

On the other hand, reports laud the longstanding relationships among the offices of the Orange County Sheriff's Department (OCSD), the California Highway Patrol (CHP), and the Orange County Fire Department (OCFD).⁷

Incentives

Emergency management leaders interviewed for this study concurred with the depiction of the above issues when asked about the Laguna Beach fire. Incentives, though, are a different matter. What seemingly motivates one individual does not always provide impetus for another. It turns out,

⁷ Information gathered for this study suggests that the relationships among these agencies contributed significantly to the success of the operations.

the same can be said for organizations. The issue of mutual aid is a pertinent example.

A hallmark of fire services' response is the mutual aid system, neighbor-helping-neighbor. Then budgets entered the picture and the same system may be viewed as pitting neighbor-against-neighbor.

One top state fire official interviewed for this study summed up his frustration with mutual aid issues. He told the story of one ladder truck during the 1993 firestorms that was never put in service--just deployed as part of mutual aid by the state Emergency Operations Center from fire to fire within the state. When the truck finally arrived at an incident location, it was no longer needed--and thus referred (unofficially) by either the incident commander or a chief at the incident to another fire. Once the state Office of Emergency Services learned about this, a directive was issued that all deployed equipment must remain at the destination site for at least 24 hours in order to maintain correct records of equipment locations... an instruction which was not well received by all commanders, nor apparently acknowledged or followed according to this source.

These were not isolated examples. After-action reports indicate numerous similar incidents, and point to causes from communications errors to faulty recordkeeping or tracking

systems. A little background will help illustrate this dilemma more fully.

Once a state emergency is declared by the governor, the state Emergency Operations Center (EOC) is activated at the state Office of Emergency Services (OES) headquarters in Sacramento. This serves as the state command center for the incident and from this point OES coordinates the use of mutual aid resources. During the 1993 firestorm, blazes were breaking out simultaneously in all corners of the state, and resources deployed according to availability and requests from affected jurisdictions. Provisions of the California Master Mutual Aid Agreement state that mutual aid resources are provided at no-cost for the first 12-hours of operation. After that, the providing agency or jurisdiction may apply for reimbursement of the costs expended. FEMA reimburses up to 75% of the costs, and the state reimburses 75% of the remaining 25%.

According to agencies interviewed for this study, funding of mutual aid reimbursement may take 12-18 months. For many small agencies and jurisdictions, this may be a major problem in balancing budgets. So, too, is the fact that FEMA regularly conducts audits after awarding reimbursement, and frequently demands return of reimbursed funds for discrepancies in reporting.

A conversation with fire officials today about the 1993 wildfires will likely include grousing about the deployment of mutual aid resources. Indeed, a 2005 site observation by the researcher to the Emergency Operations Center (EOC) for Orange county underscored the role of financial incentives for the Orange County Fire Authority.⁸ Currently, the Orange County Fire Authority--like many other professional emergency response organizations--regularly dispatches finance employees to major incidents in order to correctly code mutual aid activities, the equipment utilized, etc.

Research for this study suggests that factors that served as incentives for individuals often had the effect of transforming organizations. That is to say, the role of relationships appears paramount in coordinating multi-agency, multi-jurisdictional resources. Pre-established relationships within and among agency officials translated into trust, credibility, and cohesive efforts when allocating resources and defining strategies and tactics. Rohde emphasizes this point in describing the role of the OCFD Duty Officer, who:

...relied on relationships to place added emphasis for critical resource orders through personal telephone contacts. He was significantly more successful in acquiring mutual aid than his counterparts in other studied fires, and he attributed these contacts and prior established relationships to his success.

⁸ Since the 1993 firestorm, the OCFD has now become the Orange County Fire Authority.

An expert described the powerful value of relationships with cooperating fire agencies, and he described regular meetings and associations with those who are responsible for commanding cooperative fires. This expert knows each responsible individual personally and has the phone numbers on his cell phone to ensure immediate contact when needed. These relationships are often formalized into mutual and automatic aid agreements on a local level. The well-defined mutual aid procedures within Orange county served to significantly increase the mobilization for the Laguna Fire, yet allowed county agencies to maintain necessary emergency coverage.

Learning

Subsequent to each major emergency incident in California, state guidelines require an in-depth study of response efforts. While a cross-section of individuals are surveyed in after-action reports, these are conducted primarily as investigations of specific aspects of the incident involved versus a comprehensive overview of the SEMS policy, such as is being undertaken in this dissertation.

Part of this research considers how well recommendations from post-incident studies become integrated into future procedures. Another aspect of this study examines how well the post-incident review process accommodates the input of individual responders or street level bureaucrats.

Careful examination of after action reports shows that painstaking efforts were made to obtain input from all levels of response personnel. The Governor's Office of Emergency Services contracted with the Terence Haney Consulting Group (OES Contract 6131-3) to "identify policies, practices and

procedures to improve systems for emergency management in the state" (AAR 1993 ii). In this capacity, the firm spent several months conducting interviews, a series of field surveys, and a workshop with senior staff from several of the larger 1993 fire. Also utilized were reports received from numerous state and local agencies, as well as media reports and transcripts from public hearings.

Additionally, after action reports were compiled by the individual agencies responsible for managing the fire. Finally, an assessment of the local-state-federal hazard mitigation team is detailed in "Hazard Mitigation Survey Team Report for the Southern California Firestorms October 25 - November 10, 1993, FEMA-1005-DR-CA."

In all of these documents, certain themes emerge. Namely, that individual responders suffered from a lack of training and an inability to communicate effectively with key personnel. To a lesser degree, insufficient personal protective equipment was an issue. These observations apply to field responders as well as commanders. However, clearly stated in all reports was the need for intensive training for commanders—requiring different information and strategies from that directed to the field responders.

As mentioned in the section of this chapter entitled *Organizational Capacity*, coordination among disparate

agencies and jurisdictions needed strengthening. Even local Emergency Operation Center (EOC) staff were found lacking knowledge about the kinds and amounts of resources available as well as how to direct deployment to various staging areas.

Command strategies were openly debated in the various after-action reports. One group of fire commanders advocated the system that utilized organization along branches versus divisions or groups. Other responders to the surveys supported the more traditional organizational structure, as was utilized in the Laguna Beach Fire.

Several participants in post incident interviews stressed the need for pre-fire plans to effectively create fire fighting strategies. The excessive ordering of resources illustrates the issue during the 1993 firestorm. For instance, after action reports for the 1993 Old Topanga Fire in Los Angeles county reveal that just 20% of the 1,100 engines ordered were utilized. Reports support the observation that all fire commands in the 1993 siege ordered considerably more resources than could be ascertained or even utilized during the time needed. Rohde developed a formula for mutual aid response that urges the following:

Once a local region or county responds to its maximum ability in the first hour, the average reinforcement from the Mutual Aid System averaged 10 to 12 additional strike teams in the next 2 to 3 hours. This meant that the maximum available resource for any fire problem studied averaged 15 to 20 strike

engines (75 to 100 engines) in the first 3 to 4 hours. This period coincided with the period of highest structural loss in most of the studied fires (*Rohde p.213*).

The discussion of learning in this section has focused on individuals and emergency services agencies. An examination of the 1993 Laguna Beach fire demonstrates that Laguna Beach eagerly incorporated the lessons learned from its worst fire to date.

The area of Laguna Beach facing the greatest initial peril during the fire was Emerald Bay, an exclusive beachfront community of what were in 1993 multi-million dollar homes claiming some of the best ocean views in the world. Well over half of all homes in this community were built with wood shingle roofs, and many homes along the rims of the canyon were propped up by stilts and pilings. The lush vegetation that surrounded many of these homes served as fuel to the rapidly burning fire. While response effort to the Orange county Laguna Fire area had been preplanned years before, the plans had not been updated, and they also had been lost over the years.

Today, Laguna Beach has adopted major changes to its ordinances affecting infrastructure and zoning regulations. Additionally, the city now has one of the area's most aggressive policies requiring the use of fire retardant building materials and vegetation standards.

Summary

This chapter examines the Laguna Beach Fire in Orange County. As part of the 1993 Southern California Fires, the Laguna Beach fire provides a foundational view for the manner in which a pre-SEMS implementation occurred. Aspects of coordination, inter-agency, and cross-jurisdictional response efforts were highlighted in this examination. Also discussed in this chapter were issues related to the funding of California local governments since Proposition 13.

The following two chapters contain an examination of the case studies from the 2003 Southland wildfires that occurred after SEMS' 1996 enactment. The case studies are designed to explore the research question of whether SEMS was successfully implemented in these incidents.

CHAPTER 6

CASE STUDY: 2003 SOUTHLAND FIRES IN SAN BERNARDINO COUNTY

Overview

The San Bernardino county response to the 2003 fires in that county has been hailed as a model for wildland urban firefighting. However, the local story for managing the 2003 fires actually began one year before the first spark ignited.

Like countless wildland fires before, the 2003 Southland firestorm was not unexpected. Heavy rains soaked southern California during the winter of 2002-03 and were followed by a long, dry summer, providing a foundation that predicted fire. Add the bark-beetle infestation that killed countless trees across slopes of the San Bernardino mountains, and that anticipation moved closer to a guarantee of fire.

One of the objectives of this study was to consider whether the learning of street-level bureaucrats can become incorporated into SEMS--the policy that claims flexibility, standardization, and coordination for all types of

emergencies. Emergency management officials in San Bernardino county had been through fires many times before the 2003 firestorm (some interviewed for this study said "too many times to count"). A handful of local San Bernardino officials decided to take response efforts to a new level of coordination.

That decision led to the formation of the Mountain Area Safety Task Force (MAST). The MAST project utilized SEMS' principles and structures, but went further and emphasized prevention efforts. It provided an umbrella under which government agencies at the federal, state, and local levels would join forces with not-for-profit organizations and private industry to collaboratively organize a response effort to the fire that "everyone knew" was coming. The sentiment among San Bernardino county firefighters, who initially suggested the formation of MAST, was that awareness of the problem did not equate with adequate preparation and coordinated emergency response.

The mission of MAST was threefold. The first objective was to train the public on fire safe practices--with an emphasis on fuel reduction around communities, designed to minimize the impact of potential fires on the mountain communities. The second objective concentrated on coordination efforts among emergency response actors, who would be called

into play should a major firestorm erupt. These stakeholders included representatives at all levels of government, as well as officials from utility firms, insurance companies, and community service and not-for profit organizations. The third objective of MAST involved treatment of the dead forest trees, both on a short-term and long-range basis.

One of the first meetings of the inter-agency, cross-jurisdictional group was called by San Bernardino county assistant administrative officer John Goss and attended by agency representatives from the California Highway Patrol, the county Sheriff, CalTrans, county public works office, and county and state offices of emergency services to establish inter-agency plans for the impending fire. By November, the agencies decided to formalize their group into the Mountain Area Safety Task Force (MAST).

MAST followed the SEMS' structure and was organized along the relation of functions to operations, plans, logistics, finance, public relations, and community liaison. The executive/policy committee for MAST served as the unified command. The assistant county administrative officer, who chaired the committee, also served as coordinator for local and state elected officials as they developed their plans. The structure for the MAST organization is similar to that of the "network perspective" for inter-agency collaboration

theorized by Schroeder *et al* in *Evolution of Emergency Management*. In this context, Assistant County Administrative Officer John Goss served as the "central" actor and catalyst to enable the formation of MAST.

In February 2003 MAST began a series of repeatedly well-attended town hall meetings across San Bernardino county, where officials met with local residents to train the public on pre-fire planning, fire safety practices, and evacuation plans. Particular attention was paid to mountain communities situated in the highest risk areas. At this point, MAST was expanded to include volunteer organizations (such as the American Red Cross and fire councils) and private firms (including insurance companies).

A five-point action plan was created by MAST that included: (1) developing activities to assure public safety such as clearing hazardous trees from routes into and away from mountain areas, and providing emergency information to the public; (2) obtaining funds by working with legislators at all government levels; (3) reducing fuel levels and establishing fuel breaks by creating defensible spaces around structures; (4) establishing a commercial use or disposal options for waste wood; and (5) developing plans for long-term forest sustainability.

At the community gatherings, MAST representatives demonstrated supportive leadership as defined by Katz as they discussed the needs for maintaining a fire-safe perimeter around residences and controlling the types of vegetation surrounding homes and on properties. Pamphlets were provided to individuals, as were maps demonstrating the best evacuation routes should that be necessary. Residents were informed of shelter locations that would be opened and the best routes to the shelters; written instructions were distributed listing the types of supplies to bring to the shelters, and directions were given for animal care and evacuation.

As part of the MAST preparations, a Joint Information Center (JIC) was created to research, coordinate, and disseminate information to the public and media. This proved a valuable resource during the fires. Receiving an average of 1,450 calls daily at the center throughout the fire storm, JIC combined jurisdictional perspectives and activities while serving as a one-stop resource center for local information.

The public education campaign was a highly-publicized, well-coordinated effort repeated over a fourteen-month period with initial efforts beginning prior to the December 2002 announcement of MAST. The public education program was reinforced with information disseminated via the media by means of press conferences, expert interviews, and public

service announcements. A large number of fire officials from local, state, and federal agencies spoke on the subject of preparing fire-safe perimeters around homes and businesses by maintaining vegetation clearance zones.

Next, a well-orchestrated direct mail campaign buttressed these efforts by sending information directly to residences. Pamphlets and flyers detailed vegetation clearance standards, urged citizens to establish family emergency plans, to plan evacuation routes, and to prepare emergency kits for prompt retrieval during evacuations.

Supportive leadership from local public officials directing a public information undertaking of this type and scope had never been conducted before. Particularly noteworthy is that the program began a full fourteen months prior to the 2003 firestorms of October 2003, and took on efforts beyond public education.

While interviewing subject experts for this study, each of the officials in San Bernardino county spoke of a prescient knowledge that foretold the coming 2003 Southland firestorms. Individuals interviewed each acknowledged this was a major impetus in creating and participating in MAST. That belief translated into actions that transcended bureaucratic and political boundaries. Interviewees conceded that earlier bureaucratic and administrative rivalries had existed in prior

years among many MAST members. Yet indicators of a future disaster led each official to predict catastrophic consequences if a new paradigm were not constructed before the next fire season.

During one interview for this research, an agency leader reported that the MAST model was established because stakeholders involved in the project believed they were "doing the right thing and taking the right steps." To frame their motivation in the typology of Daniel Elazar, the founders of MAST characterize the "moralistic" political subculture. That is, those interviewed stated they believed the role of government is to advance the public interest; government service is considered public service; and bureaucracy is seen as public good.

MAST members interviewed for this study explained that although SEMS was designed to deliver inter-agency standardization, collaboration, and coordination, SEMS only affected California state agencies and state political subdivisions. Increasingly--and wildland fire response is one example--federal agencies, not-for-profit organizations, private entities, and other groups have become essential components in implementation. Thus, the Mountain Area Safety Task Force planned for and sought to utilize the participation of all levels of stakeholders--local, state, federal, and

private entities. In this official's view, these steps were "right."

When asked questions regarding which agency would assume leadership for both MAST as well as response efforts (incident management) to the predicted fire siege, this agency leader stated, "We put those questions aside during our pre-planning and joined efforts to accomplish together what we all knew could not be achieved without mutual support." This was the response from one of the core initiators of MAST. The implication in his response was that there may have been previous areas of disagreement. Still, the actors in this instance recognized that the only way they would be able to successfully respond to the scale of the impending fire was to join forces and resources.

Meetings conducted by the researcher at the California Department of Forestry and Fire Protection (CDF) office in San Bernardino revealed details of some of the collaborative programs undertaken. The U.S. Forest Service performed a series of fly-overs of the San Bernardino National Forest in San Bernardino county and the nearby Cleveland National Forest in adjoining San Diego county. Aerial photographs were taken, and later CDF joined forces with ESRI (a private geographic information services firm) to create colored maps designating

areas of tree mortality--with shades of pink and then red indicating the highest levels of mortality.

Prior to the fires, the maps were utilized by the U.S. Forest Service, CDF, and the San Bernardino County Fire Department to determine which areas presented the strongest threats for future fires. The maps were regularly updated to provide "real time" information for appropriate stakeholders. Further, versions of the maps were uploaded onto MAST's highly-publicized website as part of the public education campaign. During the fire season the website was updated several times daily with fire conditions, evacuation routes, and emergency information.

Based upon these data, staging areas for future response efforts were selected. Next, preliminary plans were developed and disseminated by identifying these sites to relevant stakeholders.

The maps (referred to by MAST as protection plans) proved enormously helpful prior to and during the fires. In the preparation phase, the maps helped officials to develop plans identifying high risk areas, staging and infrastructure locations, as well as evacuation routes for residents. Moreover, the detailed maps were utilized during the height of the fires by the 10,000 plus firefighters who responded to

mutual aid calls representing some 350 different fire departments unfamiliar with the region and the mountains.

Supporting the MAST efforts in San Bernardino were the area's fire safe councils. California established the fire safe council programs in 1993 as a means for communities to voluntarily organize local partnerships in their efforts to promote fire safe areas. Participants in the eight fire safe councils within San Bernardino county included representatives from emergency services organizations, such as fire and law enforcement, utility companies, insurance firms, and professional associations, including the California Association of Nurserymen, the California Building Industry Council, and the American Society of Landscape Architects.

Environmental Factors

Geographic and Socioeconomic

The traditional fire season for southern California is in the fall, and the inevitable occurrence of wildfires during this time of year is well documented. Conditions in 2002-03 created a setting for extreme wildland fires, which are characterized as "forests or rangelands with high or overloaded fuel conditions; extensive areas of tree mortality resulting from insect infestations; and extensive areas affected by persistent drought" (Nasiatka, p. 4).

All of these conditions existed in southern California during the years immediately prior to the 2003 fires. Spawned by a combination of dry chaparral, a four-year drought previous to that year's heavy rains, and mounting areas of tree mortality, extreme wildland fires were readying for a strike in San Bernardino county. The California Department of Forestry and Fire Protection identified and ranked the fire fuels throughout the state. In Figure 1 the fuel ranking is illustrated for San Bernardino County.

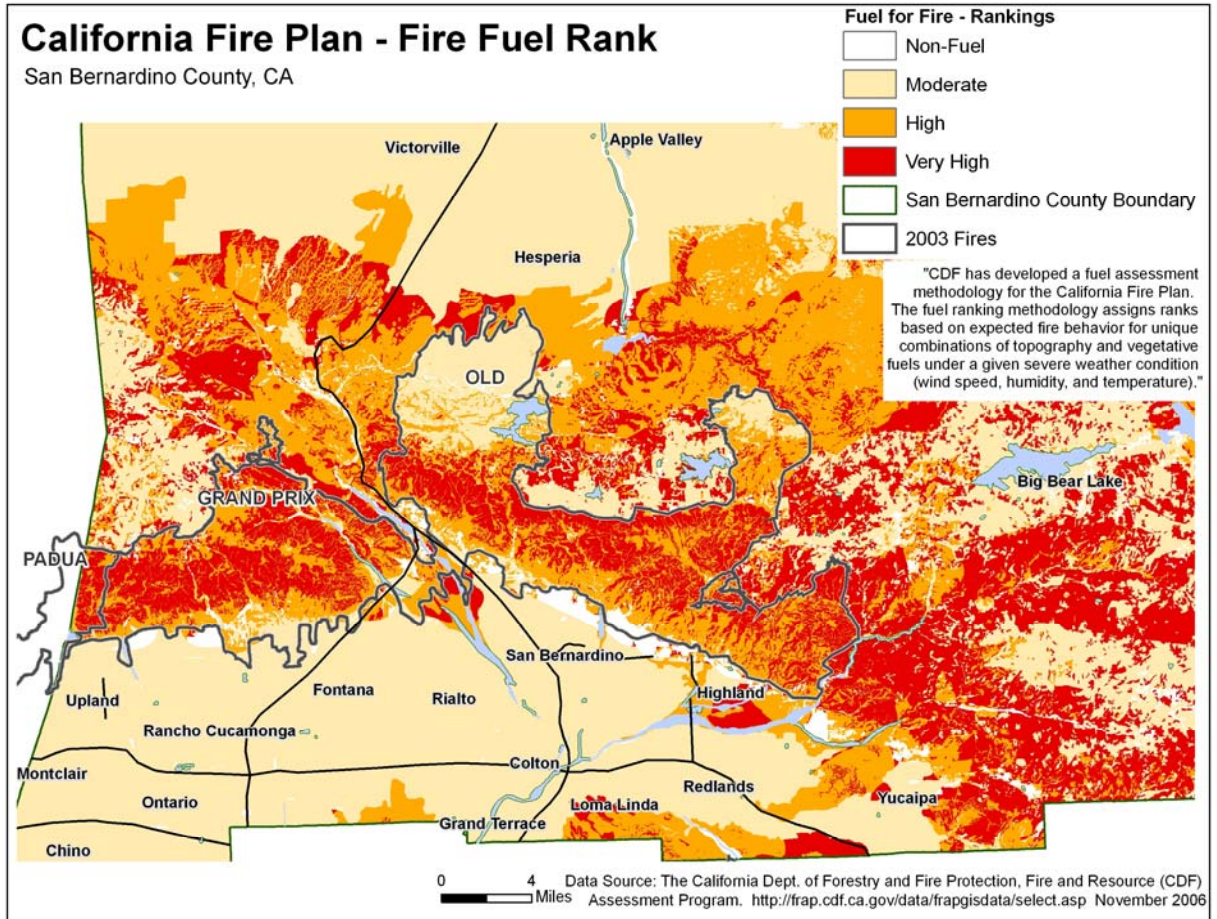


Figure 1. San Bernardino County: Fire Fuel Rank

Map Source: Maps prepared by New Urban Research.

Nearly 90% of the county's 20,000-plus square miles is desert, with the remainder located within the San Bernardino Valley and the San Bernardino Mountains. The county land mass of 20,000-plus square miles is equal to thirteen times the size of Rhode Island and comprises the largest county within the contiguous United States. San Bernardino is also ranked by the American Lung Association as having the worst air pollution in the country. Located east of Los Angeles county and north of Riverside and San Diego counties, the region

experiences high summer temperatures and dry air conditions, without the benefit of ocean breezes that cool the beach communities of Los Angeles, Orange, and San Diego counties.

In 2000 the county population of just over 1,710,000 residents lived within 528,000 households; creating an overall population density of approximately 85 people per square mile. Residential concentrations were greatest in the county's largest city of San Bernardino (183,000 residents), with three other cities within the county having populations exceeding 100,000--Fontana, Ontario, and Rancho Cucamonga. Three more incorporated cities recorded populations between 75,000-100,000 inhabitants--Chino Hills, Rialto and Victorville. The remaining seventeen incorporated cities and twenty-seven unincorporated communities had fewer than 75,000 residents each.

The population density of the county for the year 2000 is demonstrated spatially in Figure 2, while the housing unit density is demonstrated in Figure 3.

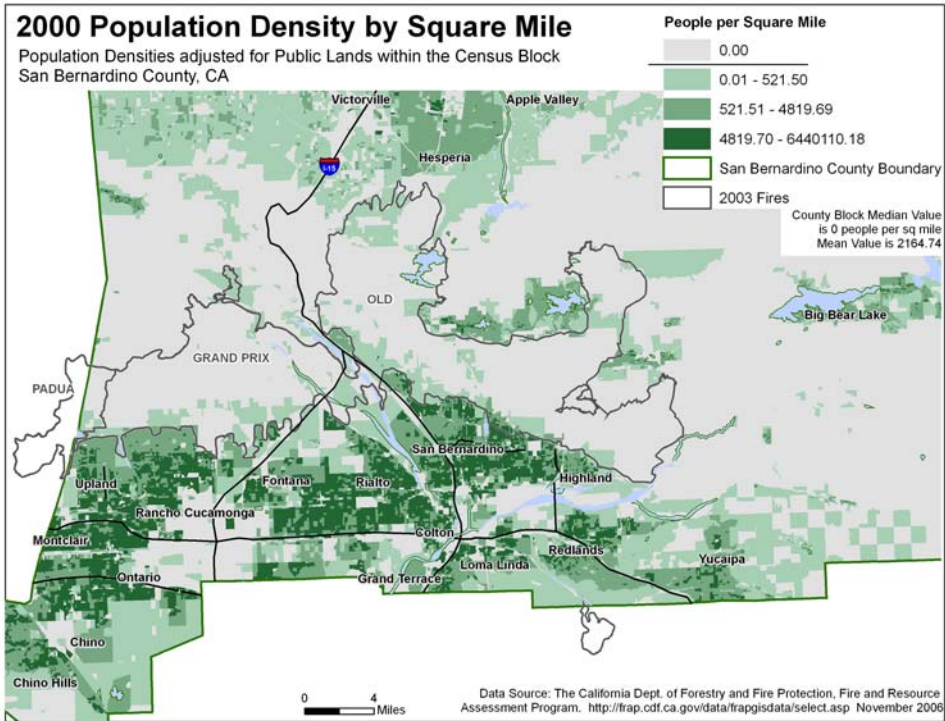


Figure 2. San Bernardino County: Population Density for 2000

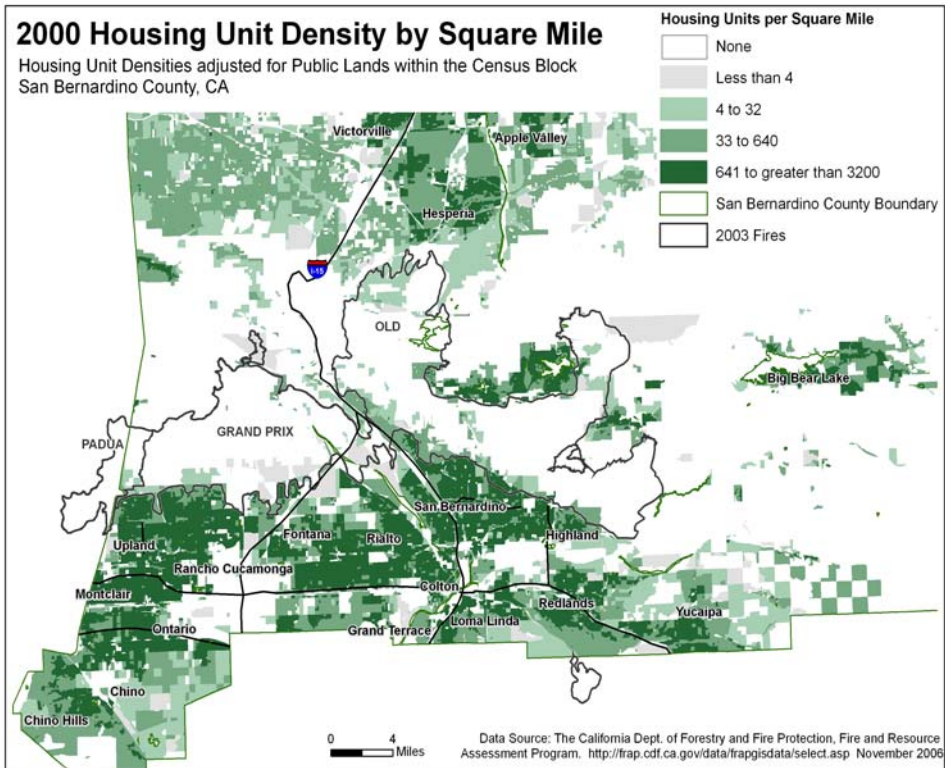


Figure 3. San Bernardino County: Housing Unit Density by Square Mile

The median household income in the county was \$42,000 in 2000. This is below the median statewide household income of \$47,500 for that year, although the home ownership rate of 64.5% in San Bernardino county exceeded the statewide average of 56.9%. This ranking in part is due to the lower cost of home ownership in the county versus neighboring Los Angeles, Orange, and San Diego counties. The median cost of an owner occupied home in San Bernardino county was \$131,500--well below the California average of \$211,000 for the same period (see Figure 4).

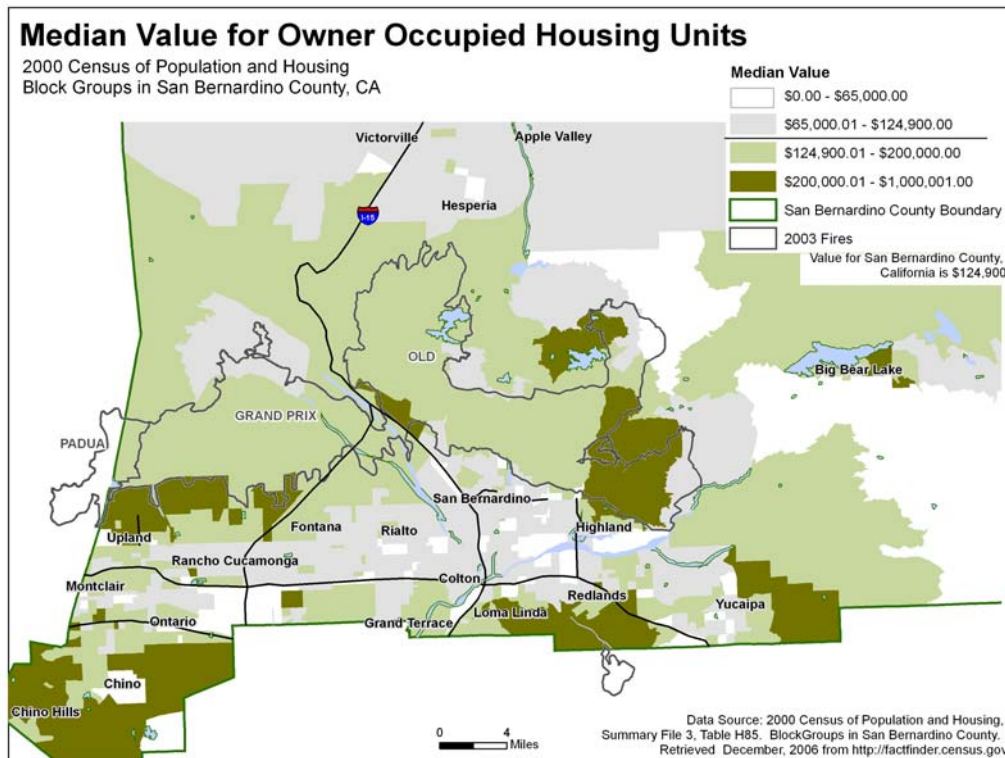


Figure 4. San Bernardino County: Median Value for Owner Occupied Housing

As a result of lower land costs in the Inland Empire (San Bernardino county and Riverside county), the area experienced rapid growth in terms of housing units and population in the ten years prior to the 2003 firestorms. These increases are reflected by a 20.5% population growth for the county versus a 13.6% statewide increase. For the three years prior to the 2003 firestorm, building patterns in the mountain communities essentially kept pace with previous construction rates for the same areas, and demonstrated a 2-3% annual growth.

Census data for the past twenty-five years reveal similar construction patterns across the county (see Fig. 5).

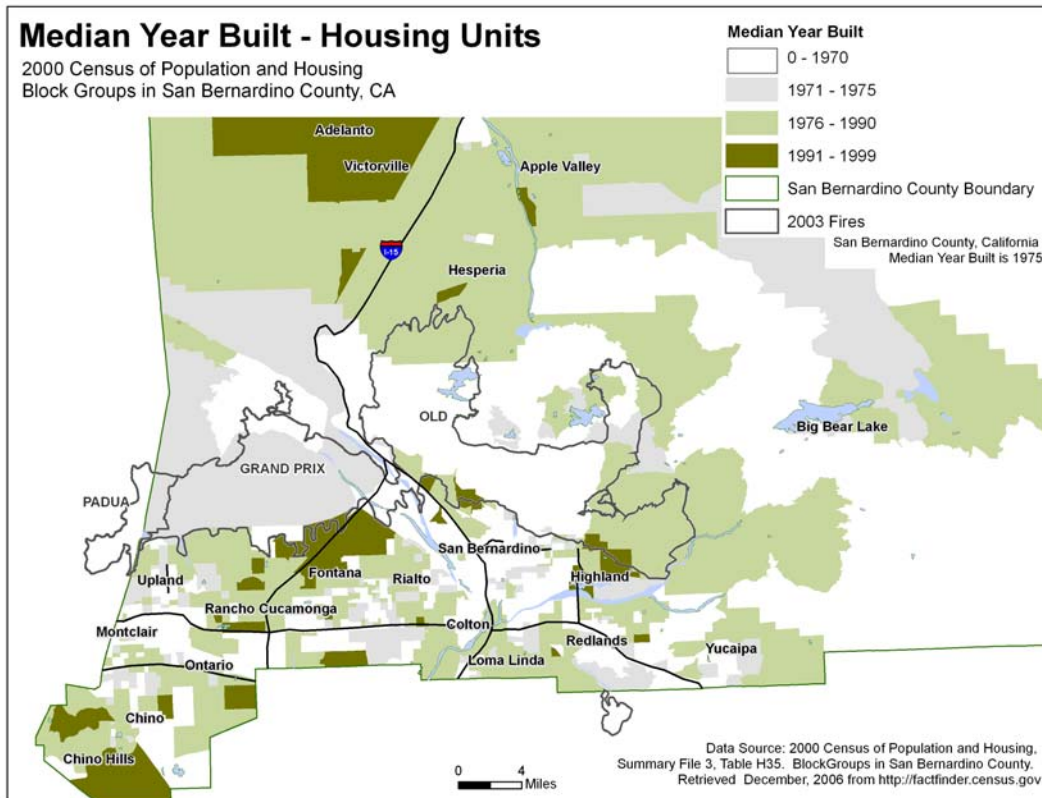


Figure 5. San Bernardino County: Median Year Built - Housing Units
Political Governing Structure

Like other California counties, San Bernardino county is governed by the five members of its county board of supervisors, elected for four year terms on a non-partisan basis. (The only exception in California is San Francisco county, with eleven supervisors and a city mayor).

In its early years, state government in California performed relatively few functions, and activities associated with government service were designated to the counties. Counties, thereby, became the jurisdictions assigned to construct roadways, maintain property records, and provide services to the disabled and poor.

In San Bernardino, as in many other California counties, these activities have been expanded. As both geographic and political subdivisions of the state, counties derive over half their revenues from state or federal coffers. Accordingly, California counties incur wide-reaching state oversight, although they also experience a fair degree of local autonomy. The state allows three categories of county governments--general law, charter, and consolidated city and county. Only San Francisco is a consolidated city and county. There are twelve charter counties, including both San Bernardino and San Diego counties. The remaining forty-five counties are general law counties.

Individuals seeking the office of board of supervisors from general law counties must be elected by district. Supervisors in charter counties have the choice to select supervisors by districts or at large; and San Bernardino county opted to elect its supervisors by district. In either case, district lines are adjusted according to census data.

The board of supervisors functions as the legislative and executive branches of county government, with oversight on programs for county residents living in the incorporated cities and the unincorporated areas of the county. As in other counties, San Bernardino's urbanized unincorporated areas often demonstrate service needs similar to those of incorporated cities. These needs have often resulted in the formation of special districts.

In San Bernardino, as in all California charter counties, the board of supervisors selects a chief administrative officer to manage administrative functions, including implementation of board decisions and development of the county budget. A legal distinction exists for the positions of county manager or county executive. These titles may be used only by charter counties; a county manager or executive enjoys more authority than a chief administrative officer, who is essentially the agent of the board of supervisors. San Bernardino's administrative officer legally

qualifies for the title of county manager or executive, but the formal title is County Administrative Officer (CAO).

During the year of the 2003 firestorms, the San Bernardino county board of supervisors oversaw a \$2,591,900,000 county budget and employed 18,100 individuals.

Also mandatory for California counties is a Local Agency Formation Commission (LAFCO), which is charged with hearing proposals relating to municipal incorporation and the creation or termination of special districts.

San Bernardino county utilizes two different governing structures available to it under provisions of the California Government Code for delivery of special services. The first relates to the County Service Area (CSA) Law (Government Code section 25210), whereby the county provides services to urbanized unincorporated areas through a CSA, and residents are not charged who live in rural sections and who do not obtain these services.

This enhanced service delivery is financed by users of the services--taxpayers living within the delivery area. These are the most common types of special districts within the state. After the passage of state Proposition 13 in 1978, San Bernardino county substantially increased its utilization of CSAs in order to manage fire protection, prevention, hazard abatement, and fire code enforcement (Government Code

section 25210.5). Because Proposition 13 limited property tax availability, the state legislature in 1989 enacted a statute permitting county boards of supervisors to levy and collect special taxes within a CSA, so long as the tax is approved by two-thirds of the voters prior to enactment (Gov. Code section 25210.6a). Formation of a CSA must first be approved by LAFCO, and then by the county board of supervisors with boundaries and services defined.

A Community Services District (CSD or special district) is often regarded as a sort of mini-government in its own right. Like CSAs, the number of special districts has increased substantially since Proposition 13, particularly in rural areas. California Government Code section 616000 allows CSDs to exist for fire protection as well as for the provision of numerous other services, such as mosquito abatement or airport maintenance.

The entities are financed via the levy of property taxes, general or special taxes, special assessments, and fees directly related to the benefit received. Formation is begun by a petition process requiring 10% of the signatures of the intended district's registered voters and filed with LAFCO. If approved by LAFCO, the county board of supervisors holds a hearing on the proposal. If approved, the CSD--unlike

CSAs--becomes an independent district, governed by its own board of directors (3-5 members) from district residents.

Currently, San Bernardino county includes eight separate fire districts as well as a number of combined community service districts that jointly provide fire protection and other community services such as water or lighting. By far, the largest is the San Bernardino County Fire Department.

Comprised of 67 fire stations and over 900 employees, the San Bernardino County Fire Department serves more than 328,000 residents across 16,000 square miles of unincorporated areas and five cities. In San Bernardino county, the Office of Emergency Services is a division of the county fire department. During a declared emergency for the area, the Emergency Operations Center (EOC), which is located in Rialto and is separate from county administrative offices, operates as the command center for officials.

As part of this research, a site visit was conducted to the Emergency Operations Center (EOC) to increase understanding of the organization and management of the facility. San Bernardino County EOC regularly hosts inter-jurisdictional and inter-agency training exercises to practice response activities and to identify any potential gaps in their approach to emergency services.

In interviews with department staff members, individuals were asked which preparatory activities they considered most important. Three subjects were identified as most significant, and included the following: regular training with agency and jurisdictional entities; good relationships defined as the ability to identify which person to call upon in another jurisdiction when an emergency situation arises; commitment to customer service defined primarily as community outreach and relationship building.

The San Bernardino County EOC facility is secured by locked gates and fence requiring departmental approval for admission. While the facility is older, it is, nonetheless, well organized along SEMS' guidelines for functional responsibilities.

Multi-Agency Coordination

By spring 2002, more than one million trees in the San Bernardino National Forest had either died or would soon die (Goss. *Public Management*. March 2004. Vol. 86, No. 2.). Over the years, San Bernardino county emergency management officials had worked closely with their counterparts in neighboring Riverside county, which shared San Bernardino's environmental conditions, as well as its anticipation of a pending catastrophic fire.

In April 2002, the San Bernardino county board of supervisors, following the lead of Riverside county, declared a local state of emergency. Various factors converged to create this condition. As previously mentioned, the area had experienced a drought for several years; second, the forests had been infested by bark beetles and other pests that attacked the trees; third, tree thinning had essentially ceased due to changing government policies and a lack of funding. The result was that "in April 2002 the county's mountains were a tinderbox, ready to explode into flame" (*ibid*).

In 2002, San Bernardino county mountain communities housed over 100,000 fulltime or part time residents in approximately 50,000 homes plus countless vacationers in the resort communities, hotels, commercial sites, and campgrounds of Lake Arrowhead and Big Bear. All totaled, the cumulative assessed valuation of these properties was estimated at nearly \$8 billion (<http://www2.icma.org/pm/8602/goss.htm>).

The 2002 requests from San Bernardino and Riverside counties did not receive a state response of additional funding until March 7, 2003, when Governor Gray Davis proclaimed a state of emergency for Riverside, San Bernardino, and San Diego counties. Citing the hundreds of thousands of dead or dying trees as a result of drought and bark beetles, the governor directed the California Department

of Forestry and Fire Protection (CDF) to begin clearing evacuation routes for mountain residents. The governor's office also worked with Congressman Jerry Lewis (Riverside) in successfully requesting that the Federal Emergency Management Agency (FEMA) redirect \$3.3 million in unused federal hazard mitigation money to the three-county area.

In addition to the MAST activities discussed earlier in this chapter, the group coordinated with the county fire marshal, who managed a countywide program including crews that cut and removed dead trees from specific blocks. Reports indicate that by utilizing the block removal program, costs were cut by over 60%.

Tree removal efforts were expanded in the summer of 2003 by Southern California Edison, which received instruction from California's Public Utilities Commission to remove over 300,000 trees along high power-line rights-of way.

With the mountain communities served by just three narrow, winding two-lane roadways, law enforcement officials were constrained in designing evacuation plans that would accommodate the egress of some 100,000 individuals while also allowing ingress to emergency vehicles for the same areas. Officials prepared for alternate routes that might be needed, and then disseminated the information to the public via the public education campaigns.

The Fire Department and the county Sheriff designed an evacuation trigger point system. In this plan, when the fire reached the first trigger point, a call was issued for voluntary evacuation; when the fire reached the next trigger point, evacuation was mandatory. In an article in *Public Management*, the assistant county administrative officer, recalled the evacuation process for 110,000 inhabitants:

While there were traffic jams of cars coming down off the mountains, no one was trapped or injured; and there were no serious traffic collisions. Evacuations did not block incoming emergency vehicles responding to the fires. As important, two acute-care hospitals, several skilled and long-term nursing facilities, as well as homebound individuals were evacuated. The county jail was evacuated, along with the Moonridge Zoo in Big Bear. That's right, lions, tigers, and bears, as well as two bison, had to be transported away from the peril (Goss. *Public Management*).

Once evacuated, individuals needing housing were directed to one of the many pre-determined shelters, the largest of which was in an airport hangar that accommodated over 1,000 people. During the first 72 hours of the fires, long before the blazes were under control, county staff set up shop in the airport according to plan. The Fire Emergency Local Assistance Center hosted 49 different county, state, federal, city, and private agencies to provide recovery assistance to fire victims. Outfitted with phones, computers, desks, chairs, and child care facilities, the Center occupied 20,000 square feet of space. Representatives from Wal-Mart and Target were on hand to give away gift cards to evacuees.

Food stamps, gas, and food vouchers were distributed; private law firms offered pro-bono legal advice.

Even with all this advanced planning, devastation from the fires exceeded expectations.

*2003 Southland Fires: Implementation
of SEMS in San Bernardino County*

The 2003 Southland Fires, which burned across five different counties in southern California, hold the harsh ranking as the most devastating wildland fire disaster in the state's history. During the fire's peak, more than 15,000 personnel were involved in battling the blaze that at one point spanned over forty continuous miles and ultimately charred over 750,000 acres; caused billions of dollars of damage; destroyed over 4,000 homes, 35 commercial buildings and 1,100 outbuildings; created a toll of over \$20 million in suppression charges; injured more than 250 individuals; and claimed 24 lives (Campbell, p. 1; Nasiatka p. 1).

The location of the Grand Prix Fire and the Old Fire within San Bernardino County are displayed in Figure 6.

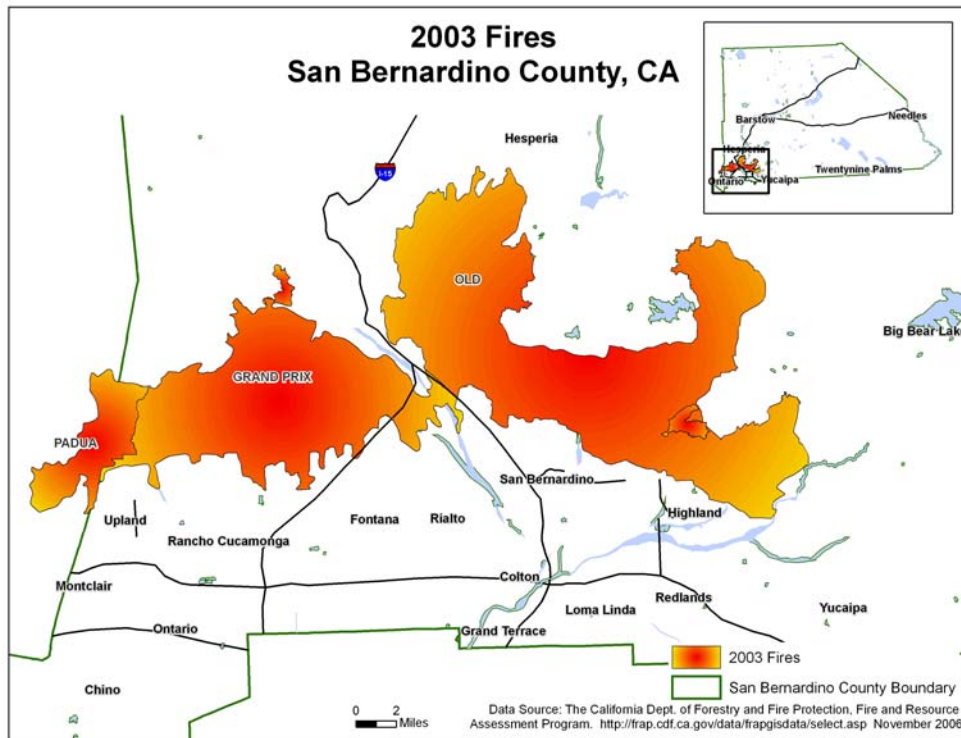


Figure 6. San Bernardino County: The Grand Prix and the Old Fire

The Old Fire and the Grand Prix Fire

On Tuesday, October 21, 2003, anticipation ended and the fight of a lifetime began. It was early afternoon when the Grand Prix fire was spotted near Rancho Cucamonga in San Bernardino county burning in dense, dried out chaparral. Already, three separate fires had broken out simultaneously in three different southern California counties--Riverside, San Bernardino, and San Diego--and were burning rapidly and unpredictably in temperatures exceeding 100°.

As the Grand Prix Fire continued, power lines from Los Angeles Water and Power and Southern California Edison became threatened. "The decision was made to transfer command to a

Federal Regional Team" (*The Story*. 2004. p. 13). Reference to a "federal region team" meant a request had been placed for a Type 2 Incident Management Team (IMT) of firefighting specialists, with specific training on various aspects of wildfire management.

For emergency management, there are five types of specially trained Incident Management Teams (IMTs) available to direct responses to national incidents. Type 4 IMTs are officers from emergency services, law enforcement, and fire departments in a larger, more populated area. Type 4 IMTs are activated normally within the first 6-12 hours of an incident affecting a city or county that is anticipated to escalate to a Type 3 and go beyond local emergency resources. Type 3 IMTs are comprised of trained personnel from various agencies and jurisdictions within a state. They generally respond throughout a state or its major regions. Incidents involving Type 2 IMTs involve a team that is certified at either the state or federal level. In the U.S., there are 35 Type 2 IMTs, and they operate within the U.S. Forest Service. Type 1 IMTs are also certified nationally or by the state, and are utilized in the most severe emergencies. These sixteen teams are the ones with the most experience, and they operate through the U.S. Forest Service.

Once a federal IMT is employed, the National Interagency Fire Center (NIFC) assumes the lead in resource management. The NIFC headquarters in Boise, Idaho, has divided the country into eleven geographic areas to manage resources and incident command activities. Southern California comprises one of the eleven geographic areas in the nation. Known as South Ops, the area headquarters is located in Riverside, California. The site is home to sophisticated intelligence-gathering technology and predictive services. For instance, prior to the 2003 firestorms, South Ops closely monitored and reported on fuel conditions and weather patterns.

Advance warning of impending Santa Ana winds provided the intelligence to redeploy fire resources previously sent to northern California back to southern parts of the state. One day prior to the first fire outbreak, eighteen U.S. Forest Service and CDF air tankers plus twenty-one helicopters were readied in southern California. Local and state officials involved in the fires and interviewed for this study spoke of welcoming the federal teams and eagerly receiving the benefits and expertise of IMT specialists. This is not to say that there were no turf issues or problems from the rapid combination of federal, state and local teams. For instance, two issues that remain problematic involve (1) federal work-rest cycles which require regular lengthy rest

breaks, and (2) the different communication channels used for emergency transmission equipment. Both of the systems used by state and federal agencies are different from that utilized by most local personnel.

Nonetheless, those interviewed believed the advanced planning and resource deployment from the federal teams provided much needed assistance. Still, it was not enough.

Several officials interviewed for this study also expressed frustration with budget cuts and government policies that either prohibited or hindered thinning the dead trees and dense fuel that had accumulated. The feelings seemed to suggest that even though these fires were going to be catastrophic, there was a chance that mitigation prior to the fire outbreaks could have minimized their effect.

By Friday, October 24, three days after the fire began, the Grand Prix Fire had scorched nearly 13,000 acres and was less than 20% contained.

A second major San Bernardino county fire--called the Old Fire--broke out the next day on Saturday, October 25, miles from the Grand Prix Fire. This blaze proved to be more fierce than the Grand Prix Fire. By 3:00 P.M., the Old Fire had charred over 7,000 acres. Evacuations were ordered, and a shelter activated at nearby Norton Air Force Base in San Bernardino. Before the end of the day, 300 homes had burned

within San Bernardino city limits, and electricity was off in mountain communities surrounding Lake Arrowhead.

The Old Fire scorched more than 12,000 acres in one day, and the inferno was less than 5% contained. On Sunday morning, October 26, 2003, Governor Gray Davis declared a state of emergency for San Bernardino county.

Two hundred foot walls of fire bore down on firefighters in their attempts to battle the blaze. On October 26, the Old Fire and the Grand Prix fires converged. Decisions made that day are indications of the challenges faced.

Specifically, a Federal National Incident Management Team (Type 1 IMT) was sent to the Grand Prix Fire to relieve the Federal Regional Team (Type 2 IMT) and assume authority for the Unified Command. Then, a Federal National Team was ordered by the U.S. Forest Service for the Old Fire.

As a result of erratic winds and poor visibility due to smoke surrounding the Grand Prix Fire, some aircraft were grounded. This was a problem that intermittently plagued officials throughout the fire. California Military Aircraft (MAFFS, C-130s) air tankers were requested from the California National Guard by the CDF. The Multi-Agency Coordination System (MACS) moved to preparedness level 5, Mode 4. In the SEMS structure, MACS combines facilities, equipment, personnel, procedures, and communication into a

common system to coordinate agency resources and support to emergencies. MACS also utilizes a numerical preparedness level from 1-5, with 5 being highest.

Throughout the siege, many dividends were realized from MAST's eighteen months of planning. Incident commanders hailed the program's effectiveness and cited their early work as now allowing them to conduct their jobs more effectively by concentrating on key response tactics.

By the end of the week (Friday, October 21), the weather finally provided a break. However, mandatory evacuations remained in place for residents impacted by the Grand Prix Fire until November 4, while those living in regions affected by the Old Fire could not return home until November 6.

When finally contained, statistics provide an indication of the fire's devastation and the gargantuan effort mounted to control the blazes. The Old and Grand Prix fires received assistance from the California Highway Patrol, CalTrans, Southern California Edison, California Air National Guard, and the American Red Cross. A unified command was established among the U.S. Forest Service, San Bernardino County Fire Department, San Bernardino County Sheriff, and the California Department of Forestry. Untold numbers of volunteers--either individuals or community organizations--donated time to help

with activities at the Joint Information Center, community shelters, and even with evacuation and fire fighting efforts.

At its conclusion, the Old Fire consumed 91,300 acres.

At its height it utilized 469 engines, 90 crews, 71 bulldozers, 17 helicopters, and 766 overhead.⁹ At one point, 4,200 firefighters were assigned to the fire and defended over \$7.5 billion in residential and commercial property. Residents in 33 different communities were evacuated and the estimated fire suppression cost approached \$38 million.

With just under 70,000 acres burned, the Grand Prix fire was not as large. That fact was little comfort to those on the front lines, which involved 2,500 firefighters at its peak. Nearly 200 homes were destroyed, and residents in eighteen communities were successfully evacuated. The estimated fire suppression cost of almost \$12 million reflected a maximum one-day equipment utilization of 178 engines, 36 crews, 14 helicopters, 30 bulldozers, and 328 overhead.

Organizational Capacity, Incentives, Learning

Most agencies responding to the fires conducted after-action reports and reviews of their involvement. From these

⁹ Composed of state or federal assistance teams trained in extreme firefighting techniques and utilizing resources for extreme fire management, although federal employees are generally recognized to have the most advanced training.

studies as well as responses to this dissertation's survey instrument, data from media sources, and interviews with key individuals involved with the blazes, observations may be made about the organizational capacity, incentives, and learning related to SEMS.¹⁰

Organizational Capacity

From the review of all available data, it is apparent that the MAST program contributed enormously to the successful response efforts in San Bernardino county during the 2003 firestorm. MAST was organized along the SEMS structure; however, it went beyond the confines of state and county agencies and special districts. MAST provided the structure for coordinating the activities among federal agencies, public utilities, community charitable organizations, tribal governments, private firms, and citizen groups. By including each of these disparate groups into the initial planning phase, all stakeholders "bought into" the plans being developed and shared responsibility not only for the creation of the plans, but also for their execution.

Contemporary disasters require a wide range of participation from a variety of entities, and one of the real

¹⁰ A copy of the survey response received from the county of San Bernardino is reproduced in this report within the section of this dissertation entitled Appendix.

strengths of MAST was seeking--and incorporating--input from all stakeholders for the impending fire disaster.

Local firefighters are credited with conceiving the concept of formalizing the multi-disciplinary group. Still, the San Bernardino County Board of Supervisors and administrative office played a pivotal function. It was through the powers and authority of these offices that opportunities were advanced and participation was encouraged from disparate groups.

One of the strengths of SEMS appears to be its flexibility in terms of shared governance and adaptability, whereby collaborative efforts were possible and encouraged among public and private agencies. Formalized agreements in this situation reflect partnerships among all levels of government and private actors as well.

At the same time, the SEMS program demonstrated the elasticity to embrace a new paradigm with the MAST pre-planning. One example of the success was the advent of the Joint Information Center, which utilized public information officers from numerous jurisdictions and agencies, versus the old model requiring the media and public to contact a number of different organizations to obtain different parts of the story. The Joint Information Center has been urged to expand in future emergencies to include even more groups.

Other successes experienced during the fire response are directly attributable to the early planning. Examples of success include the excellent cooperation among law enforcement and fire services' agencies, as well as the orderly and informed manner by which the public complied with evacuation orders. The disciplined evacuation of citizens is credited with not causing any injuries during the mass departures and also allowed for safe ingress of fire apparatus.

Another contribution made by informed citizens was their participation in the tree removal program by the property owners and community groups, such as Boy Scout and 4-H troops. These efforts augmented those of local, state, and federal governments, as was described by Berman and Wang who argued that that involvement of citizen groups would promote success of new policies. The planning also embraced the contributions of the fire safe councils and their direct efforts to support community safety.

Nonetheless, after-action reports from specific agencies indicate the need to more clearly define the roles of the incident commander and the Emergency Operations Center. San Bernardino county officials report the lines of authority were not always clear to fire service personnel in the field (Maxfield. 2004. *San Bernardino County Fire Chiefs'*

Association Lessons Learned Report: Fire Storm 2003;
Campbell. 2004. *Governor's Blue Ribbon Fire Commission*).

Most of the organizational capacity issues needing refinement are challenges that were present in other disasters. Sometimes the issues continue to exist because technology has not been developed to fully respond to the problems. Other times, new actors or resource availabilities create new coordination challenges. Other times the issue has not reached the agenda of policy makers or has not received the funding necessary to fully implement the necessary changes.

For instance, in the latter category was the problem for some of identifying local agencies' roles within the Unified Command structure. Some agencies that did not participate as fully in the planning cycle expressed concerns regarding being left out of developing the operational plans. This points to the systemic issues researched for this study.

Further evidence of systemic unevenness is suggested by the ongoing difficulties with communications equipment. This problem is not confined to San Bernardino or the 2003 firestorms, but instead is an ongoing issue across jurisdictions involving a lack of interoperability. Even when local and state governments operate with the same communication system (and they do not always), the federal

system is a completely different communications system. When federal teams arrive on the scene, new radio frequencies are necessary and most responders have not had training in the equipment, even if they are fortunate enough to be issued the federal equipment at the incident.

With any disaster of this magnitude, it is inevitable that responders will not all have the same level of training. Still, numerous reports support the need for additional training for firefighters at all levels--in the field as well as commanders, a large number of which have recently retired.

Another lack of interoperability was revealed in staffing patterns. The federal work-rest cycle requires a federal incident commander to enforce a 2-to-1 work-rest cycle. However, local and state incident commanders are not held to this standard. Thus, during the demands of an initial attack, they do not always adhere to the federal guidelines, presenting a conflict during unified command (Maxfield).

Finally, a new challenge was experienced during the San Bernardino fires because, as one agency head stated, "We simply had never thought about it before." That challenge was the task of returning citizens to their homes once the fire was contained and danger to residents had passed. As this official described it, there was such concern about designing plans to get the large numbers of people off the mountains in

such limited roadways and under emergency conditions that all preparation went into that effort. And, from all accounts, it paid off. What they had not thought about was how to transition people back to their homes in an orderly manner without incurring massive traffic jams. The official claimed that they would have that worked out for the next one.

Incentives

People who plan to rush in to help during disasters, when others are running for their lives, are motivated by incentives beyond financial, administrative, or social.

This is not to say that the availability of grants did not provide the impetus for the county fire department to obtain new equipment nor for the CDF to remove dead trees. Knowing that their agencies would be reimbursed for overtime and mutual aid costs eased the choices of neighboring--and sometimes distant--agencies and jurisdictions when asked to provide assistance. Being part of a group of professionals rising to new challenges clearly provided impetus. Nonetheless, every individual interviewed and studied for this research in some way insisted that the true motivation came from "doing the right thing."

This case study demonstrates that incentives provide an impetus to modify behavior. In the theory of inducements givers and takers are assumed to be unitary actors, which is

to say that the actor is necessarily an individual, but an entity capable of rational behavior (Stone p. 265). Moreover, the use of inducements does not require the understanding of the causes of the problem, but tends to center upon the concept of an autonomous unitary actor for a narrow policy strategy (p. 269). Incentives may be constructed as a policy instrument viewed as a potential reward or punishment.

In San Bernardino county officials utilized both rewards and punishments as impetus to modifying individual public behavior. Similarly, incentives were at play in motivating officials of governmental entities to modify behaviors. Most approaches to contemporary emergency management response are rooted in complex organizational systems with long histories of social and political relationships (ibid).

However, the founders of MAST spoke of creating the new MAST organization because it was the "the right thing" to do. Of course, "the right thing" will mean different things to different people. For this group it meant that they had been through enough previous fires to recognize the need for planned, coordinated action with organizations beyond state agencies for months and years prior to an emergency in order to be truly effective during emergency response. It also meant that given their fiscally conservative attitude toward program costs that they most likely interpreted the "right

thing" as one that would not be an additional tax burden to the public. Thus, they reached out to federal agencies, not-for-profit organizations, and private entities such as insurance firms and utilities to begin their coordination.

Of course, the group sought and obtained grants from powerful legislators as well as the governor. Still, the unspoken punishment and reward presented by the MAST founders was this: the organizations needed to start collaborating and sharing resources, or the upcoming fire would most likely cause an enormous and lengthy disruption to the economic security (jobs) in the area as well as to the lifestyles of individuals living there.

It was through the months of public education and preparations that government officials were able to instill in the public the advantages of individual participation in planning for an impending disaster, as well as the steps to take once a fire broke out. The record demonstrates that the public took advantage of the efforts to provide this education.

First, fire safe councils in the county joined in the educational efforts of MAST organizers. Initially formed in 1993, California fire safe councils are community organizations voluntarily organized by local individuals and organizations to speak with one voice about fire safety. The

second way in which the public demonstrated its knowledge about fire prevention was in the wide-scale effort undertaken by individuals to clear brush and debris from their personal property. A third indication of public awareness was evidenced by the large turnout of individuals at community and town hall meetings. Fourth, the smooth evacuation of mountain communities in a short period of time supports the notion that the public heard the message from public officials. Finally, the website created by the MAST organization recorded an unanticipated high volume of use by citizens seeking information on fire prevention projects, volunteer opportunities, tree removal guidance and assistance information, a calendar of events, and an interactive make-a-map function that enabled users to create maps for specific areas (ESRI, p. 3).

Moreover, behind the story of San Bernardino county's preparation for the 2003 wildfires was an attitude by elected and appointed public officials that the "buck stops here." This value was coupled with a steadfast commitment to shaping the outcome of future disasters. Individuals in San Bernardino interviewed for this study referred to the professional nature of their organizations and took obvious pride in their reputations. Additionally, these discussions revealed a willingness of the organizations involved to allow

other agencies and departments to expand their areas of expertise by participating in collaborative training, preparations, and execution of response activities. These preparation efforts characterized the network perspective described by Schroeder *et al.*

Learning

The San Bernardino county experience in the 2003 firestorm denotes SEMS' accommodation of learning from distinct sources. First, recommendations from post-incident reports include observations from government agencies as well as private organizations and individuals. San Bernardino county demonstrated political leadership by taking the lead for early planning. Meetings with county and state officials confirm they incorporated recommendations from disparate sources, such as modifications to fuel management ordinances.

One of the most significant lessons learned was the critical role of public participation, which was essential to successful implementation.

Finally, it is obvious that a new value system is present in the San Bernardino emergency management community--and it seemingly confirms that successful emergency management implementation is an ongoing process that must necessarily cross jurisdictional boundaries.

Summary

The San Bernardino county case study as presented in this chapter presented the framework for conducting an analysis of the organizational capacity, incentives, and learning associated with that county's implementation of SEMS during the 2003 Southland Fires. A significant focus of the chapter involved examining the county's approach to intergovernmental activities for emergency management.

Further, this chapter highlights the importance of political office holders and top bureaucratic officials demonstrating specific types of political and emergency management leadership in organizing and shaping intergovernmental and cross jurisdictional collaborations. During the emergency response efforts associated with the San Bernardino fires, officials stated the relationships established during the pre-incident phase for emergency planning was instrumental in creating a positive outcome. The development of MAST, the utilization of technology, and the sharing of resources, objectives and information with all stakeholders serve to embody the network perspective.

CHAPTER 7

CASE STUDY: 2003 SOUTHLAND FIRES IN SAN DIEGO COUNTY

Overview

A major focus for this study was to consider if SEMS was effectively implemented within different California counties. The same 2003 Southland Fires that bolstered San Bernardino county as a model in its preparations have dogged the reputation, planning, and leadership of San Diego county. This chapter will reveal that San Diego county's implementation suffered large gaps in organizational capacity.

The wildland fires that swept across five southern California counties in October 2003 foisted their greatest wrath in San Diego county, earning the dubious distinction as the state's worst disaster.

Just knowing that over 60 different agencies have responsibility to provide fire protection in San Diego county creates forewarning of obstacles for collaboration, coordination, and standardization. These 60-plus disparate agencies were operated by various city governments, special

districts (fire or multi-purpose districts), volunteer departments, military bases, sovereign tribal nations, the federal government, and the state of California.

The 2003 Southland Fires in San Diego county highlighted issues surrounding this structural arrangement and offers insight on the dangers of meeting only minimum standards of SEMS' policy guidelines. Wildfires during the autumn months are practically routine occurrences in southern California. Figure 7 illustrates the fire fuel ranking for San Diego County as determined by CDF.

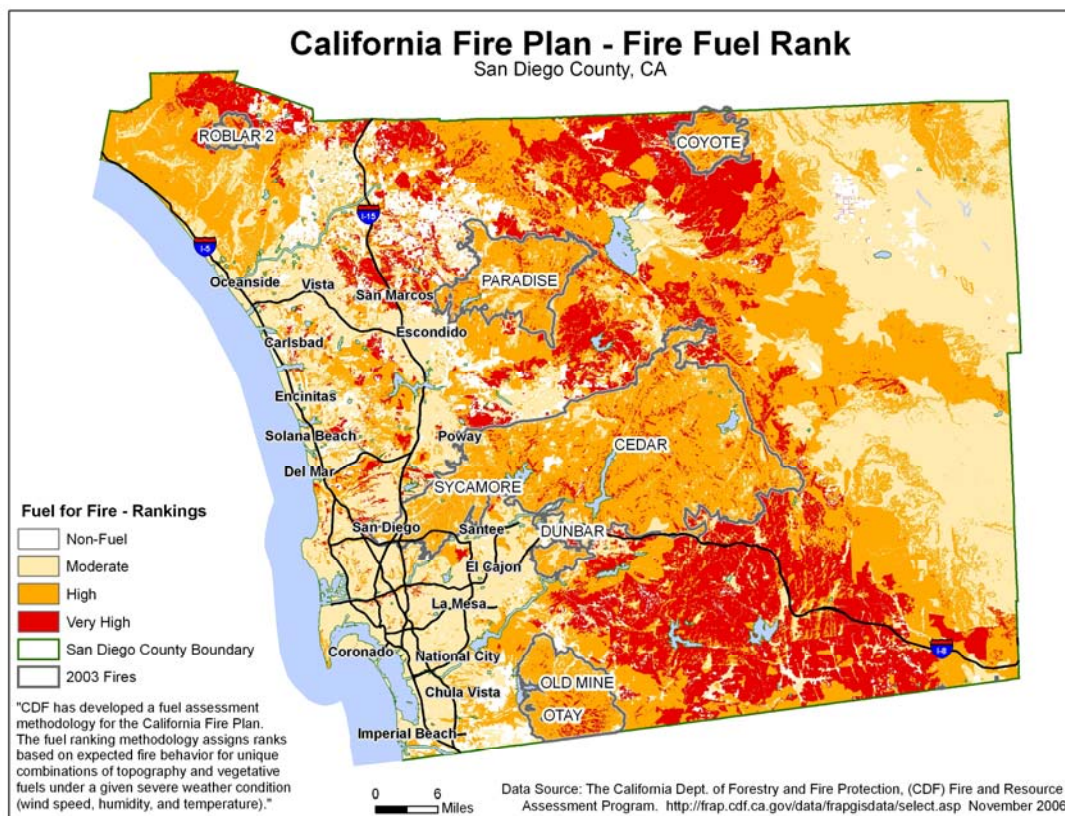


Figure 7. San Diego County: Fire Fuel Ranking

On the morning of Sunday, October 26, 2003, the San Diego City Fire Chief first realized a major fire was burning in the area when he woke up and opened his front door. Outside, the pungent smell of smoke hung in the air as an omen of the catastrophe that was unfolding.

The manner in which the fire chief learned about this blaze may symbolize the organizational capacity that existed within the county for emergency services. On the other hand, it may simply reflect one distinct incident within a city department that offers no correlation to overall organizational capacity.

In recalling the event, the chief seemed more annoyed than shocked that he was not notified at home of the blaze. Recently hired from Anaheim in Orange county to head up the city of San Diego's Fire-Rescue Department, Chief Jeff Bowman quickly gained a reputation for being outspoken.

At the height of the 2003 Cedar Fire, Bowman was interviewed by *Los Angeles Times* reporters (Perry. October 31, 2003. p. A1) and said, "One of the first things I noticed when I got here" was the fact that the city had no helicopters. Water-drops from helicopters onto wildland fires are standard response protocol for wildland firefighting and are especially effective early in a conflagration. "We had to do something in this community to get air support," Bowman

explained to the reporters about his push to get the city of San Diego to lease a helicopter.

In fact, the city complied with the chief's demand, and leased a helicopter for the four months prior to the outbreak of the Cedar Fire. According to the *Los Angeles Times* report:

One week before the fires broke out, city officials allowed the lease to run out amid disagreement over whether the city or the county should pay the bill (*ibid*).

Evidence obtained during this research demonstrates that this was but one in a long series of poor decisions. It is important to note that this decision was made for the Fire Department in the city San Diego. The county of San Diego--unlike every other county in the state with similar geographic, economic and demographic compositions--did not have a fire protection agency of its own.

Environmental Factors

Geographic and Socio Economic

Both the county demographics and the natural resources of the area appear to justify the existence of a countywide fire department. When reviewing county demographics, it is obvious that the area is a prime fire hazard. It is also clear that the third largest county in the state (4,500 sq. miles) cannot count on quick reinforcement from other urban counties to fight fires. San Diego county borders the Pacific

Ocean for 70 miles to its west, the Sonoran Desert to its east, the Cleveland National Forest to its southeast, snow-covered mountains to its northeast, and Mexico shares its southern border.

Topographical variations give rise to great climatic differences, and the mean annual temperature of 64.4° may be misleading. Extreme climatic variations exist between coastal areas with ocean breezes and the inland communities along the hot, dry foothills. It is across the southern California foothill communities nestled among the natural forests that the greatest number of wildland fires has occurred.

In 2003, the population of the county was just over 2,930,000, reflecting a 10-year annual growth averaging 4.2%, more than one-half percent below the statewide average of 4.8%. Still, some areas of the county experienced much greater expansion rates, especially in the city of San Diego (see Figure 8). (Economic Research. Department of Finance, State of California. *California County Profiles: A Companion to the 2001 California Statistical Abstract*. 2001).

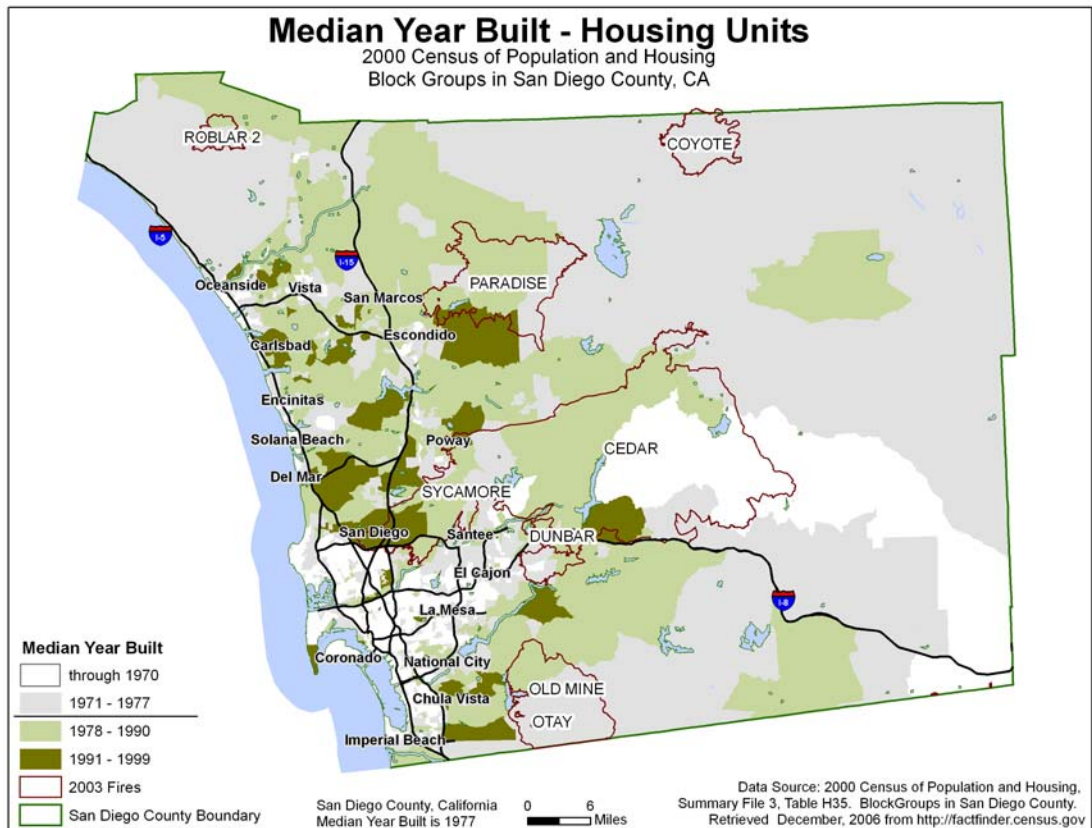


Figure 8. San Diego County: Median Year Built for Housing Units

Some of the most rapidly growing communities are in parts of the county's most geographically-vulnerable areas, and those considered most fire-prone include the hillside and mountain regions. The period between 1990-2000 saw a 25% housing growth for San Marcos, bringing the city's population to nearly 67,000 by the time of the 2003 fires. The cities of Vista, Oceanside, Carlsbad, and Escondido each experienced 25% development rates during 1990-2000. This translated into a population for Vista that reached 93,000 during the year of the 2003 firestorm; 172,000 for Oceanside; 92,000 for

Carlsbad; and nearly 140,000 for Escondido. These data are demonstrated as housing unit density per square mile in Figure 9. (California Department of Finance, Demographic Research Unit, California State Census Data Center, *Population Estimates for Cities, Counties and State, 2001-2006 with 2000 DRU Benchmark*).

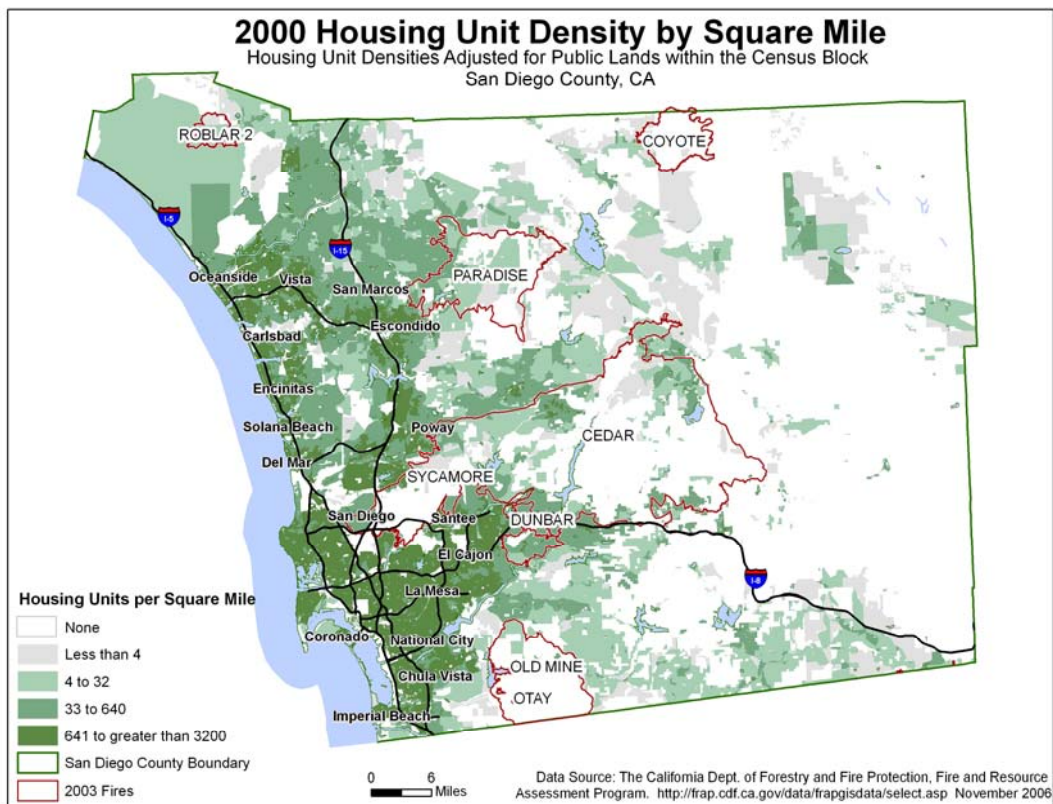


Figure 9. San Diego County: Housing Unit Density

A total of 995,000 households existed in San Diego county during 2000--averaging 2.73 persons per household, .15% persons less per household than the statewide average. This created a county population density of 670 persons per square mile, compared to the statewide average of 217

persons, and San Bernardino county's density of 85 persons per square mile. The population density per square mile for San Diego County is spatially illustrated in Figure 10.

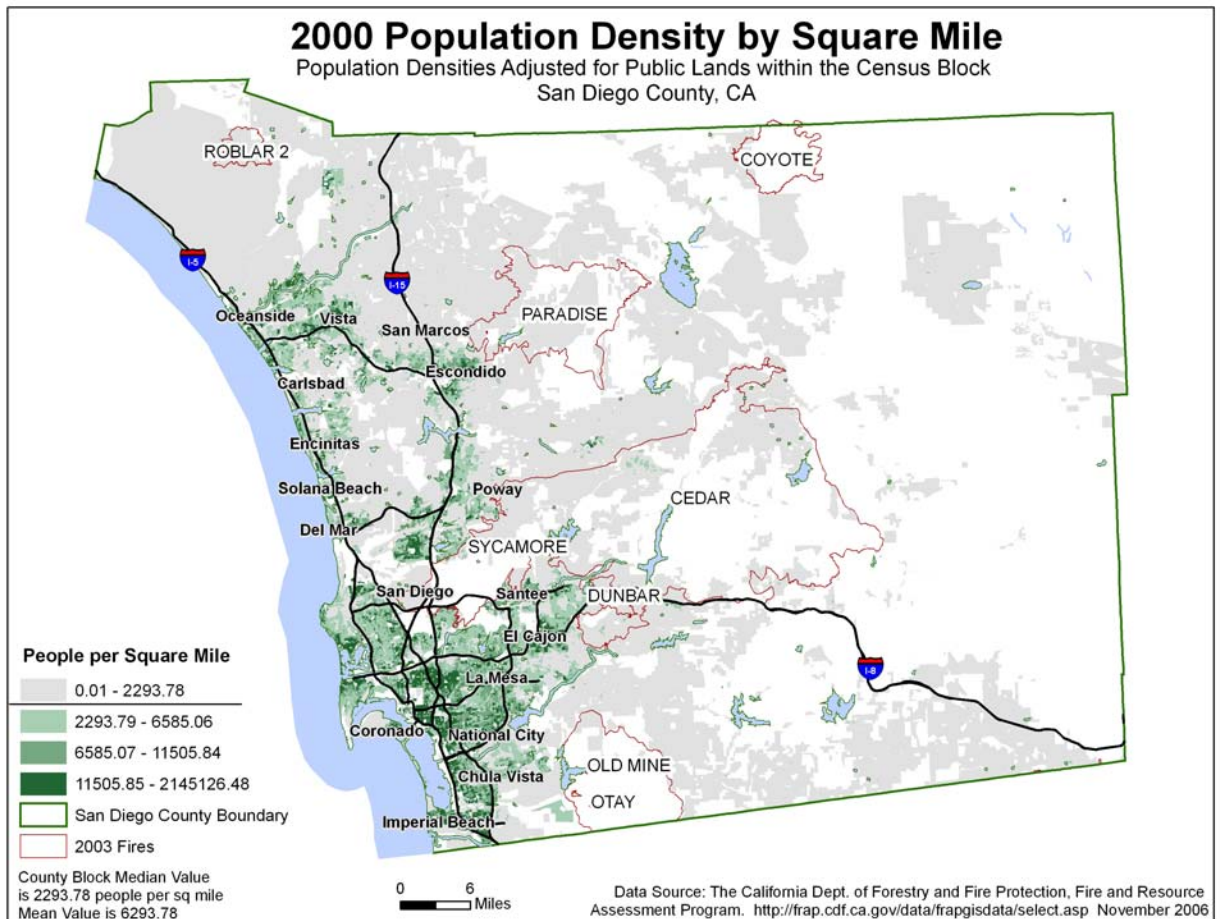


Figure 10. San Diego County: Population Density

Nearly 30% of San Diego county residents above the age of 25 reported having a bachelor's degree or higher in 2000 (U.S. Census. 2003), 3% above the statewide average. The county median household income for 1999 was approximately \$400 less than the statewide average of \$47,500 (U.S. Census.

2000). Still, the income was \$5,000 more per household than nearby San Bernardino county.

Homeownership rate for San Diego county was a full 1.5% below the statewide average of 56.9%. This lower figure is thought to reflect the \$16,000 higher median value of owner-occupied homes in the county (\$227,000) versus the state average of \$211,000 (U.S. Census. 2003). The county's median home value was also \$80,000 per unit more than San Bernardino county's median home price of \$131,000 (*ibid*). Figure 11 illustrates the geographic location and value of owner occupied housing units for the county.

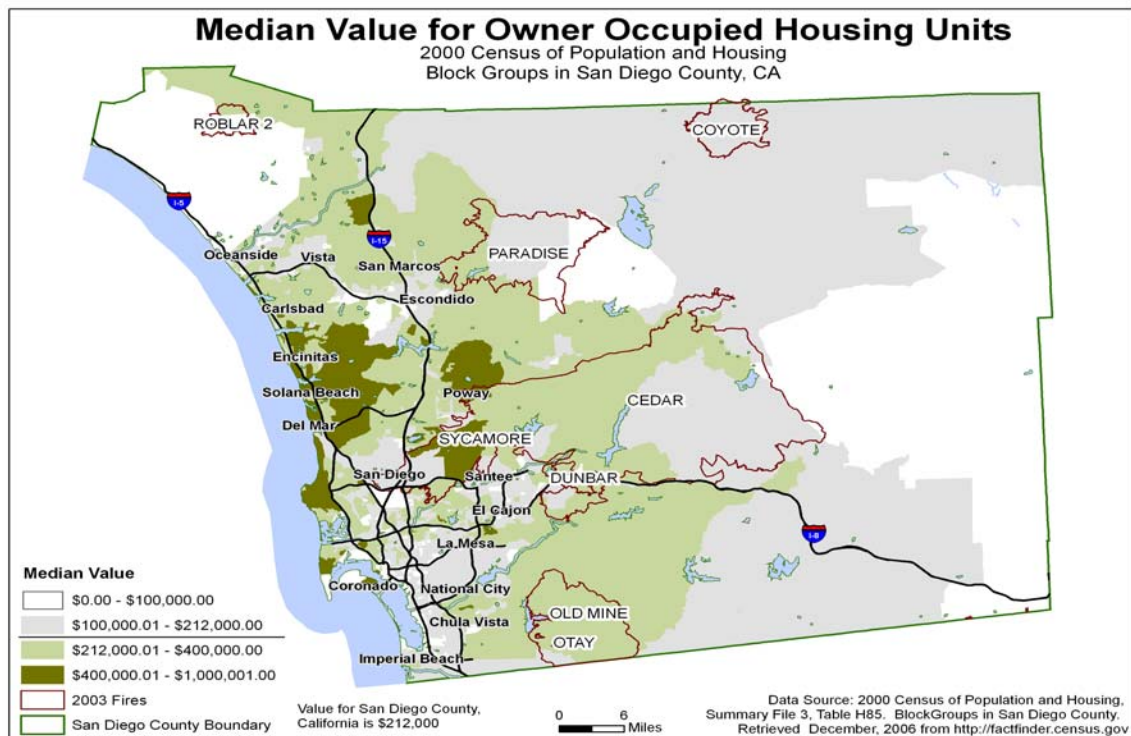


Figure 11. San Diego County: Median Value of Owner Occupied Housing

Thus, San Diego's property tax base still exceeded that of San Bernardino. Moreover, a 2002-03 report issued by the office of the state Legislative Analyst showed that the San Diego county general fund retained 14% of the property tax dollars collected. This compared to 11.9% of the property tax revenues gathered in San Bernardino county and retained in their county General Fund (California Legislative Analyst); and, of course, San Bernardino county supported an effective countywide fire protection department.

The city of San Diego, with a 2003 population of 1,275,000--was by far the county's largest metropolitan area. Located in the southwestern corner of the county, it is just 15 miles from Mexico and borders the Pacific Ocean. San Diego is also the state's second largest city and the country's eighth most populous city.

San Diego county, with a population approaching three million in 2003, ranked nationally as the 14th largest metropolitan for population (http://www.dataplace.org/area_overview/?place=x69622). The county is home to a total of 18 incorporated cities, 59 unincorporated communities, seventeen different sovereign Indian tribal councils, a nuclear power plant, and several U.S. Navy ports, Marine Corps bases and Coast Guard stations. One-third of the U.S. Naval Pacific Fleet is located within the San Diego Bay.

Moreover, the county is also the site of the world's most heavily traveled international border crossing; some 64 million individuals in 2004 traveled between Tijuana, Mexico, and the city of San Ysidro in San Diego county.

As stated previously, every county within California with this socio-economic foundation includes a countywide system of fire protection...except San Diego. Instead, San Diego county's fire protection includes a patchwork of some 60-plus different fire agencies operated by various cities, special districts, county service areas, the military, volunteer departments, Indian tribes, the state, and the federal government.

Although each of these entities has entered into mutual aid agreements according to SEMS' guidelines, the disparate agencies lack a mechanism by which an incident commander may assign resources throughout the area without state officials taking command. Within San Diego county, numerous other indicators point to under-prepared departments.

One noteworthy benchmark is data for fire protection agencies serving comparable sized communities. In 2004 the city of San Diego had a population of over 1,300,000 and a fire department budget of \$119.4 million. That contrasts with

budgets in similar sized Sunbelt metropolitan areas as follows: (1) Miami, FL: pop. 1,500,000 and fire budget \$226.3 million; (2) Phoenix, AZ: population 1,399,000 and fire budget \$165 million; (3) Orange county, CA: population 1,290,000 and fire budget \$166.6 million; and (4) Washington, DC: population 1,200,000 and fire budget \$153 million (*Firehouse Magazine, National Survey Run. 2004*).

The figures above represent a considerable gap between spending on fire protection by San Diego and comparable municipalities. For instance, in 2002-03 Los Angeles spent \$107 per resident on fire protection, while San Diego spent \$85. Further, the 880 uniformed fire services personnel in the San Diego Fire Rescue Department reveals a ratio of less than .69 firefighters per 1,000 or one to 1,469 city residents. (The figure for residents does not include the tourist population.) The national median for cities of more than one million residents is 1.31 firefighters per 1,000 residents (National Fire Protection Association). In contrast, San Francisco has one firefighter per 421 residents; the city of Phoenix has one firefighter per 997 residents and the city of Los Angeles has one firefighter per 1,126 residents (DeClercq. *San Diego City Firefighters*. (<http://sdfire.org/index.cfm?category=1&Section=1&pagenum=140&titles=0>)).

Moreover, San Diego is surrounded by more fire prone areas than either Los Angeles or San Francisco.

Thus, for San Diego these figures represent approximately 35% fewer firefighters per 1,000 residents than is the average for large cities. Extensive overtime has been utilized in San Diego as a tactic to make up for the shortage of firefighters. While this approach increases salaries for fire service personnel and allows the city to avoid the extra costs of employing fulltime workers, it does not build the personnel resources necessary to combat large-scale fires, such as in the 2003 firestorm. Fire protection resources for San Diego include 45 different fire stations; 880 uniformed personnel; 45 engines; 11 ladder trucks; 29 ambulances; 74 medics; and 7 chiefs.

If Elazar's political subculture typology were applied to San Diego political officials based upon how they approached the problem of fire protection prior to the 2003 fires, their characterization would be Individualistic. This category is defined as a limited role for government primarily to areas encouraging private initiative; dirty politics is assumed to be a fact of life; and a negative view of bureaucrats exists.

Against this backdrop are a number of governing structures that directly impact the implementation of emergency management services for the county of San Diego. As discussed in chapter 4 government codes define State Responsibility Areas; thus, the state is only required to assume command decisions if a fire breaks out within State Responsibility Areas, such as occurred in the Paradise and Cedar fires in 2003.

Nonetheless, in researching the San Diego case study, the subject of free-ridership was a theme that was repeated by numerous leaders of fire fighting agencies, emergency management departments, and individuals interviewed for this dissertation. The opinion of these individuals was that it was well known in fire fighting circles that San Diego had counted on outside help (from the state, the federal government and nearby counties) for several decades to protect its citizens.

Political and Local Governing Structure

County Government

As one of the state's twelve charter counties, San Diego opted to elect its five member board of supervisors by districts for four year terms. According to state law, San Diego county board of supervisors--like boards of supervisors in all California counties--function as the executive and legislative branches of county government. These roles are in

addition to serving in a quasi-judicial capacity, such as is required for hearing cases involving violations of county ordinances, which may result in the imposition of fines.

In 2003, the year of this case study, the San Diego county chief administrative officer managed a workforce of 17,900 employees operating within 40 county departments. He also oversaw an annual budget in excess of \$4 billion.

As provided by state charter, San Diego county's Local Agency Formation Commission (LAFCO) functions as a regulatory agency with county-wide jurisdiction. Its stated mission is to discourage urban sprawl and encourage the orderly formation and development of local government agencies. The eight-member commission in San Diego consists of one council member from the city of San Diego, two council members from other cities within the county, two members of the county board of supervisors, two members of special districts, and one public member selected by the members of the Commission (<http://www.sdlafco.org/mainpages/aboutlaf.htm>).

While LAFCO serves a quasi-legislative role in overseeing changes to jurisdictional boundaries, SANDAG is the county entity which serves as the forum for regional decisions and projects involving public resources. Composed of representatives of the 18 cities in the county as well as

county government, SANDAG plays a key role in developing strategic plans and allocating public resources.

San Diego county supervisor Greg Cox provided detailed responses to the survey distributed as part of this research and estimated to take anywhere from three to six hours to complete. Supervisor Cox offered insights to the county's emergency planning activities and how these efforts are coordinated among local, regional, state and inter-governmental entities.

For instance, Supervisor Cox writes that activities at the local/intergovernmental level are planned by the Unified San Diego County Emergency Services Organizations. Established in 1961 as a Joint Powers Authority, the organization includes the county and all 18 incorporated cities, which functions as the San Diego Operational Area under the SEMS structure. The Unified Disaster Council (UDC) serves as the governing body for the organization. One member from each of the 18 incorporated cities and one member from the county make up the UDC. Supervisor Cox writes that while the fire protection districts are not part of the UDC, they do participate along side UDC members in planning and training exercises.

Supervisor Cox reports that at the regional level for emergency planning, the state's coordinator for the state Office of Emergency Services Southern Region works closely

with regional members. The state Office of Emergency Services coordinator's activities include receiving and disseminating information to regional members and conducting quarterly meetings with counties and cities. Regional members include representatives of the state Office of Emergency Services, the California Department of Forestry and Fire Protection, the California Highway Patrol, CalTrans, the National Guard, as well as representatives of the counties and cities within the SEMS mutual aid or administrative region. Additionally, members of federal agencies are frequently participants in regional planning meetings and exercises.

The points made here were substantiated in interviews with government officials and subject experts knowledgeable about San Diego county and city fire services and emergency management. While information obtained during these interviews support the county's survey response, the data also characterize the level of innovation and leadership exhibited as either poor or minimal in terms of creating programs and activities aimed at disaster prevention.

City Government

For the city of San Diego, emergency management issues are but one aspect of the municipality's mounting troubles.

Newspaper reports from the past decade reveal a city government in crisis. In April 2005 *Time* magazine rated San

Diego Mayor Dick Murphy (first elected Mayor in 2000) among the three worst "big-city" mayors in the country. Three months later he resigned amid corruption charges, which previously had led to indictments of two city council members. The city's problems, though, began well before these headlines made the newsstands. Instability of city finances was traced to 1996 and the city council's decision to under fund the employee retirement plan, while increasing pension benefits. The practice was endorsed again in 2002 by another council vote.

In 2000 Murphy campaigned for mayor on a platform that promised to complete construction of a \$474 million baseball park that had been halted by a lack of money as well as numerous lawsuits. (The park eventually became Petco Park, home of the San Diego Padres). During his first mayoral speech of January 2001, Murphy outlined his strategy to finish building the ballpark in two years with plans that began with forming an independent nine-person Blue Ribbon Committee on City Finances. According to a *San Diego Union-Tribune* report, "Three months later, six of the committee members were Murphy campaign contributors and a seventh was the spouse of a contributor. An eighth would soon land a six-figure salary at city hall and the ninth was an executive whose company had just inked a 10-year deal to televise Padres games" (Hall. August 14, 2006).

The committee's report was given to a council committee two weeks after the closure of the ballpark bond deal in February 2002 and five months after the report was set for release. One member of the committee, Richard Vortmann, became a member of the Pension Reform Committee and then the city's pension board. In an April 2002 note he faxed to his colleagues on the Blue Ribbon Committee, Vortmann stated:

The committee's unstated concern over the ball park financing and any impact to the city's credit rating in general are now behind us. It is clear the city has deferred to future taxpayers far more dollars than our report assumed. I have a growing and daunting concern that we possibly did our city a disservice by not ringing a very loud bell" (*ibid*).

In early February 2004, *Moody's Investor Service* lowered its assessment of San Diego's fiscal outlook to "negative" from a previous rating of "stable." Citing the city's intentional under funding for eight years of the San Diego City Employees Retirement System, Moody's stated the pension's low reserves also contributed to its decision (LaVelle. *The San Diego Union-Tribune*. February 4, 2004). In August 2005, "Moody's lowered San Diego's general obligation bond rating to A3 from A1. Other types of San Diego bonds also were downgraded."

Further, in September 2004 *Standard & Poor's Rating Services* suspended credit rating for the city, due to San Diego's lack of audited financial statements. Then, in

February 2005 *Fitch Ratings* reduced the city's credit rating to a status just above that of junk bonds (LaVelle. August 14, 2005).

There is no question that the city's financial situation directly impacted fire protection. Prior to the 2003 fires, San Diego had eked out a little money to replace some of its antiquated fire engines; but nothing was available to enlarge or upgrade its aging fire stations nor to expand the number of fulltime employees. To put the San Diego resources in perspective, contrast the number of fire stations and engines available to that city with those of comparable municipalities in California.

A 2004 report published by the National Fire Protection Agency (NFPA) entitled, *A Needs Assessment of the Fire Service: California*, provides documentation of California communities. The report states that for metropolitan areas of one million or more residents, the average number of fire stations in the state was 101; and the average number of fire engines was 138, more than 60 percent of which were under 15 years old (Hall. NFPA. June 2004. p. 35-6). San Diego had only 44 fire stations in 2003, although an additional station was opened in 2004 (City of San Diego Fiscal Year 2005 Proposed Budget p. 472). Moreover, San Diego City Fire

Department had 45 fire engines and 11 ladder trucks in 2003 (*Firehouse*. June 2004. p. 59).

In spite of these facts, research for this study revealed that San Diego suffered from more than financial shortcomings. A telephone interview conducted as background information is telling. This interview was with the former top aide of a leading San Diego elected official. As part of the discussion, the absence of a countywide fire protection agency was explored by the interviewer.

In a telephone conversation with the former top aide of a leading San Diego elected official, which was conducted as background for this study, these issues were raised. There was no money to expand programs and the "county got out of the fire protection business in 1974," was his response. However, when asked why local officials had not at least initiated efforts to coordinate activities among the disparate fire protection agencies within the county, the aide's response was, "If you were Bill's [Senator William Campbell] chief of staff, then you know that things happen. The agenda changed. We didn't have the money, and other things happened."

The city's political agenda may have changed, but the standards of the Commission on Fire Accreditation did not. In February 2006, San Diego received the news that the Fire

Department did not receive national accreditation. Numerous deficiencies were cited as reason for the decision. Among the factors that influenced the rating were the shortage of fire stations, engines, trucks, and staffing. Additionally, the lack of permanent employees was a factor, as was the overly large coverage area for which each fire station was responsible.

Among the recommendations made by the commission was a strategy to improve fire-rescue response times, including replacing or building up to 29 new stations with current equipment, and hiring an additional 500 staff members.

There is little doubt about San Diego's financial difficulties contributing to loss of accreditation. In 2005 Kroll Inc., a risk-management firm headed by former Securities and Exchange Commission chairman Arthur Levitt, undertook an eighteen-month examination of the financial problems plaguing San Diego. While releasing the findings of the Kroll report, Levitt stated city officials watered down the Blue Ribbon Committee report assessing the city's financial problems in order to obtain bonds to construct the new baseball stadium, and declared "In my judgment San Diego's problems are not economic, they are political" (Kucher, Baker, Vigil. August 8, 2006).

The web site of the city's current Mayor, Jerry Sanders, sums it up this way as he writes, "Our city government is broken, there's no other way to put it" (<http://www.sandiego.gov/mayor/>). Contributing to San Diego's broken government today is an unfunded city pension deficit estimated between \$1.4 and \$2 billion, coupled with burgeoning benefits for city employees. The impact of these issues for the 2003 fires in San Diego county are discussed in the summary of this chapter, as well as in Chapter 8 of this study.

Special Districts, Tribal Nations and County Fire Protection

The sheer number and types of governing jurisdictions in San Diego county no doubt contributed to the difficulties incurred during the 2003 Southland Fires. This compounded obstacles created by (1) the absence of a unified, countywide fire system, and (2) a city fire department fraught with problems.

Within San Diego county, fire protection is provided by sixteen separate and independent fire protection districts; eighteen different cities; five municipal water districts that offer fire services; seven county service areas; the CDF providing wildland fire protection to State Responsibility Areas within the county; the U.S. Forest Service in Cleveland National Forest; a combined program covered by the U.S. Fish and Game and the U.S. Wildlife Services; and several military

installations. Additionally, seventeen different federally-recognized tribal nations either contract with one of the entities listed above for fire protection or provide the service to their own tribal members (San Diego LAFCO. *Funding Fire Protection*, 2003. San Diego LAFCO. *Macro Report*. 2005).

Further complicating the issue is that thirteen different fire companies operate as fully volunteer operations. This is an improvement from 1980, when the county included thirty-five volunteer fire companies (*Fire and Emergency Services in San Diego County*. 1988. p. 4). State laws (Health and Safety Codes) provide that volunteer companies are not permitted to generate public funds, even though they are considered autonomous organizations with the powers to adopt their own bylaws and elect officers.

This means that volunteer companies must count on fund raising efforts to help balance their operating budget. The Campo Fire and Rescue Station 86 (San Diego county) is one volunteer department that relies on pagers to contact its 20-member volunteer force, and hosted a series of fundraisers between July 2005 and July 2006 to offset a deficit to their \$44,000 annual budget. Seven thousand dollars was raised that year by hosting a pancake breakfast, dinners, fudge sales, donation cans, and a winter firewood drawing.

The political jurisdictions and government agencies located within San Diego county have complied with the "letter of the law" and overarching SEMS' directives of participation in: (1) the Mutual Aid System; (2) inter-agency and cross-jurisdictional coordination; (3) Operational Area; (4) Incident Command System; and utilization of (5) Response Information Management System (RIMS) the internet based system for resource orders, and (6) the Operational Area Satellite Information System (OASIS), where SEMS data and telephone satellite lines are provided to SEMS' operational areas.

Thus, SEMS' minimum standards were technically satisfied. Still, this study confirms a wide disparity between SEMS' implementation in San Bernardino and San Diego counties.

Subsequent to the 2003 Southland Fires, the San Diego Local Agency Formation Commission updated and reissued an earlier study entitled, *Funding Fire Protection: An Overview of Funding Issues Facing Fire Protection Districts* (<http://www.sdlafco.org/document/FireFunding03.pdf>). In this report, the county reiterates its previous positions concerning the absence of a countywide fire protection agency:

There is no state mandate to provide structural fire protection; consequently, there is no obligation for local governments to divert scarce public resources to fund structural fire protection. In San Diego county, funding fire protection has traditionally been considered a local issue. When communities incorporated or as areas of the county developed to the point where structural fire protection was desirable, communities have incorporated or

formed special districts and taxed themselves to provide fire protection services (San Diego Local Agency Formation Commission. 2003. *Funding Fire Protection: An Overview of the Issues Facing Fire Protection Districts*. p. 29).

It could be argued that taking this position after the 2003 Cedar Fire--the state's most deadly disaster--is evidence that hindsight is not always 20/20.

Nonetheless, LAFCO had plenty of company when taking that view--namely, the majority of the 2004 voters in San Diego county who cast ballots just three months after the state's most catastrophic fires to reject fire improvement measures in their locales.

The 2003 San Diego County Fires

Ninety-seven percent of all wildland fires in California are extinguished in the first day with limited destruction.

California Department of Forestry and Fire Protection

Roblar 2 Fire in San Diego County

The 2003 Southland Fire Siege was not among the ninety-seven percent. The initial outbreak of the firestorm for San Diego began in the northern portion of the county at Camp Pendleton Marine Base. Around noon, on October 21, 2003, a fire started on the base's practice range. Named the Roblar 2 Fire (a previous Roblar Fire burned the area in 1985), it was not a particularly unusual fire for a large wildland fire, except for this: it was not only the beginning of the five-county 2003 fire siege for southern California; it also was

the first of four deadly fires that would threaten San Diego county for two full weeks.

Figure 12 illustrates the locations of the major San Diego County wildfires in October-November 2003.

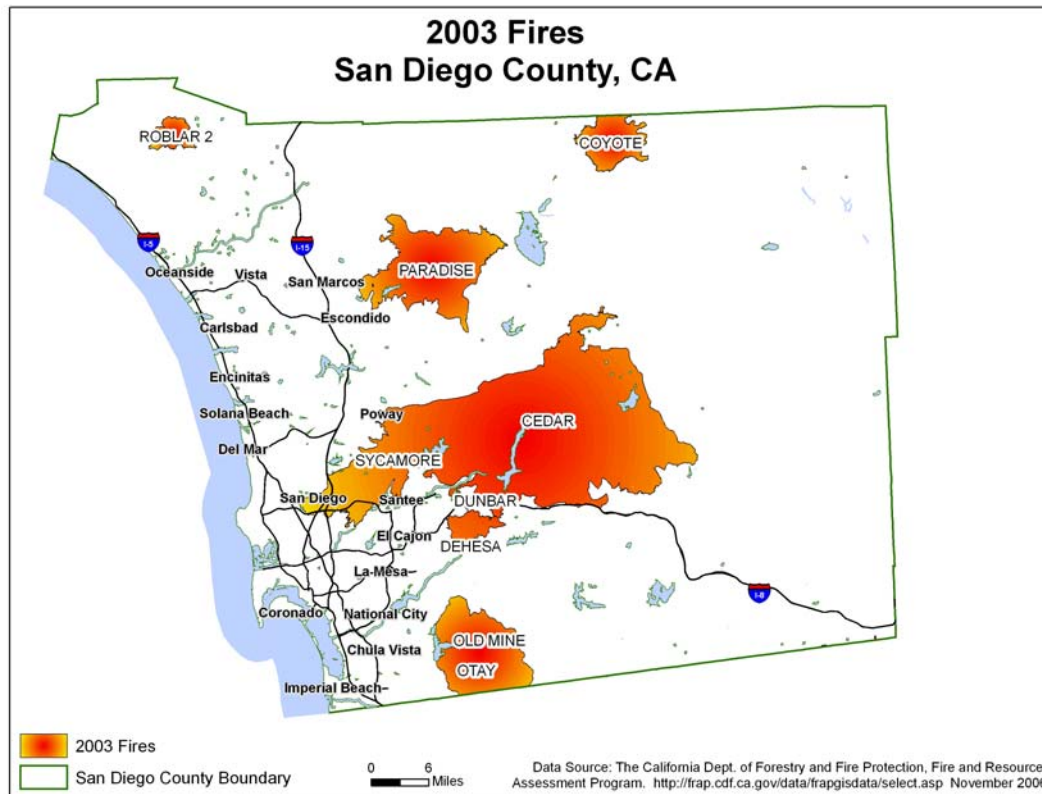


Figure 12. San Diego County: Wildfires October-November 2003

Roblar 2 Fire ultimately consumed over 8,500 acres from October 21 until November 4, 2003. After the 1985 Roblar Fire, the Camp Pendleton base commander created a large fire fuel break that extended over 100 miles. When Roblar 2 ignited, federal firefighting agencies responded, as did state and local government resources. Because the fire began

on federal land, a federal regional team was called in to head up response efforts during the first day of the fire.

The existence of the fuel break and the strategies employed by the federal regional team are credited with containing the fire, which resulted in neither the loss of any lives nor the destruction of any private residences. Nonetheless, evacuation was ordered and conducted for one nearby community in the fire's path.

Cedar Fire in San Diego County

On October 25, 2003, the Cedar Fire started. The devastation caused by this blaze no doubt will serve as a benchmark for future southern California wildfires. The largest fire in California history claimed over sixteen lives (fourteen deaths were caused from people trapped while trying to escape the conflagration). With 200-foot walls of fire reported at stages of the blaze, an unparalleled path of destruction was left in the wake of the inferno. Over 275,000 acres were burned; 2,300 homes destroyed; and almost 600 commercial and other structures were lost to the fire that consumed \$30 million in suppression costs and utilized 4,300 firefighters at its peak.

The Cedar Fire began rather innocuously in the early evening hours of October 25. It turned out that the fire was ignited by a lost hunter trying to send a signal of his

whereabouts in a remote section of the Cleveland National Forest. Like many of the other 6,000 plus wildland blazes successfully suppressed that year by CDF, this one was spotted initially by a CDF airplane.

The portion of the Cleveland National Forest where the fire was first reported has rugged terrain with limited access, especially at night. So, response efforts were slated to begin early the next morning when aircraft could safely fly, and the 340 firefighters on hand would be reinforced with additional teams. After all, nights are typically the quiet time for fires. It did not work out that way this time.

The Santa Ana winds picked up about midnight, quickly spreading the fire beyond the Cleveland National Forest into neighboring communities. It was in these first few hours that thirteen residents were trapped by the fire and killed trying to evacuate. From there, the fire picked up intensity.

It is also about this time of morning that Chief Bowman first stepped out of his home and realized that something was terribly wrong. Explanations vary regarding why the Chief had not been notified of the exploding situation overnight; but the records are clear about one thing--fire officials on duty the night of October 25 had been extremely busy.

Fire agencies within the San Diego area had responded earlier that week to the needs of neighboring southern

California counties. These counties experienced the first outbreaks of the 2003 Southland Fires, six days prior to the start of the Cedar Fire. On October 24, in anticipation of a large-scale fire within San Diego, the San Diego Unit of CDF and other San Diego area fire departments, issued a directive to all local fire stations to remain staffed with all remaining resources, and not to participate in any further mutual aid requests. It quickly proved to be a good decision.

However, once underway, the Cedar Fire rapidly devoured everything in its path--including public confidence in first responders. Early news reports questioned why water-drops had not been made by helicopters during the first hours over the burning mountains. Answers to that question could not be heard over the roar of the flames and the even louder sounds of growing political and public fury.

Experts explained that there were primarily three reasons that the nearby Navy helicopters had not been utilized for water-drops during the first night of the blaze. They were: (1) the 1932 Economy Act. Passed during the Depression and designed to protect civilian jobs, a provision of the federal law requires firefighters to utilize all available private contractors prior to asking for military support; (2) by California statute, CDF is in charge of all aerial firefighting activities, and it had cited perilous

weather conditions and the dangers of incompatible radio frequencies; and (3) water drops need to be buttressed by ground personnel to be effective, and ground personnel could not safely access the area until daylight.

Within one day, the Cedar Fire had burned 182,000 acres --and at its height grew at a rate of 12,000 acres per hour!

Suppression plans changed constantly. The fire response efforts were divided: a federal team directed the efforts for the eastern half of the fire; while a state team headed up by CDF coordinated the efforts along the western half of the fire. With two command zones in place, some initial confusion ensued for responders who were uncertain where to report, but that proved to be a short-lived glitch quickly offset by a more efficient management of the huge workforce that eventually went beyond 4,200 individual responders.

During the first day of the two-week Cedar Fire, the Federal Aviation Agency (FAA) was forced to shut down and ordered evacuation of its Regional Terminal Radar Facility at Miramar Marine Air Station due to the approaching fire. Poor visibility from heavy smoke was the reported cause of a crash involving two small airplanes in San Diego county. San Diego Gas & Electric Co. shut down a major transmission center and cut off electricity to 80,000 plus locations in the San Diego area. Amtrak passenger service and rail freight service was

cancelled, while many freeways and numerous roadways were either closed or impacted. Schools, universities, and businesses closed. Evacuation centers began opening throughout the county. Governor Davis declared a state of emergency in San Diego county.

Elsewhere on October 26, various California fire agencies responded to and suppressed some 213 new wildfires throughout the state.

As the Cedar Fire grew, so, too, did the media coverage. More than one top official interviewed for this study spoke of dueling obstacles. On one hand, erratic wind patterns and a lack of resources required commanders constantly to update and refine tactics for fighting the fires. On the other hand, mounting political pressure, caused in part by ongoing broadcasts of burning images, created political demands for suppression tactics which could not be met safely.

For instance, elected officials as well as members of the public called for the use of military resources--in spite of laws concerning the use of military resources and the amount of time necessary to train and deploy personnel for firefighting. Training rules initiated by CDF had precluded the use of military helicopters in the past; however, military equipment was allowed for the first time during this

fire as two helicopters were deployed from Miramar Marine Corps Air Station.

At the peak of the fires, incident commanders and agency heads worked not only to fight the fires, but to battle the mounting criticisms being hurled at them regarding the manner in which the fires were being fought.

As an example, CDF aircraft equipped with the Modular Airborne Fire Fighting System (MAFFS) have rigid flight cut off times that correspond with sunrise and sunset. (Federal and military aircraft are bound by these same rules.) The reason for this inflexible policy is to insure flight safety; however, the policy also does not permit adaptation to specific conditions of individual incidents. Air support is only one aspect of firefighting, and as stated previously must be reinforced with ground personnel to be effective. Still, the public and the media expect a large, ongoing show of air tankers in a blaze such as this. Commanders spent an inordinate amount of time responding to local political demand for the use of military aircraft, particularly after a local congressman's house was burned.

During a fire, unmanned aerial vehicles (UAVs) may also provide the opportunity to view both people and flames to determine if fire activity exists within specific areas. Lt. Col. John Crocker Air Guard Operation, California Military

Department, testified in a hearing that "I think it goes without saying that UAV capability might have been useful." Crocker stated UAVs were ordered for the Cedar Fire, and offered these comments about the experience:

With no finger pointing whatsoever, I will point out that on the 30th [October 2003] we made the request for Predator UAV. In the time it took to process it, we lost roughly the state of Rhode Island (*Blue Ribbon Fire Commission p. 38*).

No doubt additional resources of all types would have been quite useful early in the fire. It is during the first hours of a fire's outbreak that the most effective response "is to throw everything you have at fighting the fire," according to several officials interviewed for this report. However, demands by public officials for more resources began midway during the fire's course, and seemingly did little to alleviate the problems at hand. As an example, calls for additional air support were short-sighted because the heavy smoke in the area had created unsafe flying conditions. Still, pressure intensified from elected officials to go out of state to secure additional MAFFS aircraft--this, in spite of the fact that commanders did not indicate a need for the equipment. Commanders reported that receiving these politically-initiated directives in the midst of the fire storm affected their abilities to develop and implement quick, decisive actions.

Further, when additional resources arrived from other counties, the sudden, large--and often unanticipated--influx of equipment and personnel sometimes proved overwhelming to staging areas. As stated in Chapter 3, California SEMS includes a detailed cataloguing of resources which is utilized for disaster deployment. Still, the rapidly escalating damages from the Cedar Fire required instantaneous personnel decisions for equipment requests that were not always moved through proper channels.

Moreover, widespread criticisms from the public and elected officials adversely affected the morale of fire fighters, who were working long hours--some working shifts of 48 hours at a time without rest. Firefighter fatigue became a major concern, and logistical gaps left large numbers of firefighters without enough food or supplies.

Otay/Mine Fire in San Diego County

On the heels of the Cedar Fire, the Otay (Mine) Fire broke out in the southern portion of the county to the east of the city of San Diego. The fire started along Mine Canyon Road on Otay Mountain along the Mexican Border, an area just south of the Cedar Fire. Beginning on October 26 and lasting for three days, Santa Ana winds moved the Otay/Mine blaze across 46,000 acres as temperatures reached the 100° mark with single-digit humidity.

The fire quickly grew to over 10,000 acres within six hours--and with multiple fires in the county, resources were at a premium. A state incident command team was ordered, as 300 homes were threatened in the Otay Fire region.

Paradise Fire in San Diego County

October 26 is also the date the county's fourth fire started. The Paradise Fire began north of the Cedar Fire near Escondido in the area of Valley Center, where multiple casinos are located. Within twenty-four hours, this fire escalated to 30,000 acres, and by October 27 included another 10,000 acres. Resources were still limited, and crews on this fire--like the Cedar Fire--worked 48 hours without relief.

Here is how the four county fires stacked up on October 27:

Roblar 2 Fire had burned 8,600 acres and was 85% contained;
Cedar Fire had burned 201,000 acres and was 0% contained;
Otay/Mine Fire had burned 46,000 acres and was 90% contained;
Paradise Fire had burned 40,000 acres and was 15% contained.

The Cedar and Paradise fires continued to rage in San Diego county. On October 29, both fires reversed directions due to changes in wind patterns, and switched courses from easterly to westerly routes. Fire departments operated by Sycuan, Rincon, and Viejas Indian Reservations were active in fire suppression for the Paradise Fire. Meanwhile, land

located within the reservation of the Barona Band of Mission Indians served as a command center for the Cedar Fire.

Communication and coordination was an enormous problem throughout the fire. "Robert E. Lee had better communications at Gettysburg than we did," reported Chief Darrell Jones at the 2003 Blue Ribbon Fire Commission Hearings, as he quoted Cedar Fire Incident Commander David Hawkins.

Lack of information availability led to numerous other obstacles, as commanders attempted to organize a response to the San Diego Fires. Incident commanders count on intelligence information gathered from aerial support to provide data about a fire's path, speed, velocity, and intensity. Without this information, command decisions are often made in the dark.

In addition to the radio interoperability issues that occurred with different types of equipment when local, state, and federal agencies responded to the same incident, commanders were faced with firefighters who sometimes did not have any equipment. Those who did have radios were often carrying two and three different types of equipment--partly due to interoperability, partially due to transmission limitations caused by the area topography.

San Diego City Firefighters' President Ron Saathoff told reporters at the *San Diego Union-Tribune* (Thornton. Nov. 1,

2003) about a deputy chief going to a supply store to purchase equipment for firefighters because the department's storeroom ran out. They were dropped off at the Cedar Fire with only a hose because no trucks, radios, jackets, or equipment were available. City buses were used to transport firefighters to and from the fire frontlines. Area maps were not available for out of town firefighters, further complicating the response process.

Another difficulty with communication efforts resulted from frequently blocked transmission signals caused by canyons and mountain ranges. When a major cell phone transmission center was burned down, that further hindered communication for a large number of responders.

Dispatchers at the Paradise Fire reported numerous initial shortages in resources, both staffing and equipment. A major challenge existed in getting not only enough handheld radios, but also frequencies for the incident. The city of San Diego sent a request to all employees to donate pagers and cell phones. Within a day, they had collected and distributed over 500 pieces. Then, due to the area's topography, the CDF command channel was used as a tactical frequency, resulting in channels that were nearly always busy, even for priority communications.

Staffing the response effort to the Paradise Fire was a major issue with fire crews throughout the state, because many were already deployed at other incidents. Dispatchers sent numerous requests for assistance, but initially could not obtain enough resources or staffing.

However, as the week moved on and fires in other areas approached containment, all previous requests were filled--even those that had been cancelled. This created a new set of issues. For instance, one evening a camp grew by 25 unexpected hand crew strike teams (consisting of 30 personnel per team). The camp's food unit managed to serve 1600 dinners that evening and 2200 breakfasts the next morning.

In spite of all this, it might have been worse. At one point, the Paradise Fire was on a direct path to merge with the Cedar Fire and was about two mountain slopes away when winds subsided. The break in the weather gave firefighters an opportunity to contain the blazes.

County Emergency Operations Center (EOC)

The County Emergency Operations Center (EOC) opened only five hours after evacuations first began for the Cedar Fire. However, the EOC did not always have lines of communication with fire and field activities throughout the county's four large fires. Sometimes communications gaps were due to a lack of radios in the field, and sometimes communications were

garbled or non-existent due to transmission problems caused by the area's topography. Other times communications lapses occurred because efficient systems and plans had not been set up with key actors.

The fire did not slow down for commanders to develop plans that had not been prepared prior to the first outbreak. The Cedar Fire in particular moved at an astonishingly rapid rate and for much of the foothill areas ingress and egress was possible only via one narrow, winding roadway.

Further, the county's Emergency Alert System was the only communications tool available to the San Diego Emergency Operations Center for notifying large numbers of local residents about the impending fire dangers. The Emergency Alert System (EAS) was created as a warning system for nuclear attacks by the federal government during the Cold War era.

During the fires, San Diego officials decided not to use EAS to warn residents. The system required a message of less than 90 seconds to be disseminated as a blanket alert to area residents through radio broadcasts. The concern was that a mass alert for large areas would cause serious traffic congestion if significant numbers of residents started to evacuate simultaneously. Thus, loud speaker messages and alerts from helicopters supplemented door-to-door warnings. These proved ineffective: of the thirteen residents killed by

the Cedar Fire, at least twelve lived in two of the neighborhoods outside the city that received no warning of a fire heading for them (Perry. *Los Angeles Times*. October 31, 2003).

When the firestorm in San Diego county ended, a full 13% of the county landmass had burned. The inferno that scorched 376,000 acres also cost sixteen lives and destroyed more than 3,200 structures. Ten percent of the fire occurred within San Diego city limits, where 400 structures were destroyed.

Even before the end of the fire siege, measures were being proposed in legislative bodies to offset future disasters. On October 31, U.S. Senate approval was gained for a bill authored by Senator Diane Feinstein to expedite a fuel reduction program within California. The proposal was a modified version of the earlier Bush administration plan for forest thinning. The bill's revisions were developed by a bipartisan coalition of western senators to streamline the process for thinning hazard fuels in California's 20 million acres of national forests. Prior to final approval, Senate Minority Leader Tom Daschle of South Dakota said, "It is not exactly the plan I would have crafted, but we cannot allow the perfect to be the enemy of the good. As we see today in California, the risks of delay are too high" (Pegg, 2003).

Organizational Capacity, Incentives, Learning

Due to the catastrophic nature of the fires in San Diego county, numerous government agencies and commissions were convened to conduct studies on specific aspects of the response efforts. These reports were analyzed for this research. Additional information that was utilized includes responses to the dissertation survey, participation at public hearings, media coverage reports, interviews conducted with key officials, and government documents.¹¹

Organizational Capacity

This study has already reviewed organizational capacity in San Bernardino and Orange counties. The Los Angeles County Fire Department (LACoFD) provides another example of a politically-influenced agency. LACoFD enjoys the reputation as a professionally run department, providing service to 57 cities that contract with the department, which includes 163 engine companies, 31 truck companies, and 79 paramedic units. Additionally, LACoFD is credited with establishing the nation's first 911 emergency calling system and the country's second firefighter paramedic program. Moreover, the department is recognized for its very solid relationship with the Los Angeles City Fire Department, and is viewed as an

¹¹ A copy of the dissertation survey response prepared by San Diego county is reproduced in this report within the section entitled Appendix.

early model for creating cross-jurisdictional, collaborative programs.

While it is clear that San Diego county did not benefit from a unified fire protection system such as those in neighboring counties, San Diego has also been criticized for not adequately preparing and coordinating the resources under its purview.

For instance, prior to the 2003 fires, the San Diego Operational Area (within the SEMS organizational structure) had identified specific individuals to serve as agency representatives to the County Emergency Operations Area when a county-wide emergency occurred. However, during the Cedar Fire, the representative from CDF was also designated as the Incident Commander for the state-operated western zone of that blaze, and thus was unavailable at the Emergency Operations Center to perform critical communications and coordination functions with collaborating departments.

Further, prior to this fire siege, the county Emergency Operations Center had never operated as a command center during an actual emergency. Training activities were extremely limited for all county response organizations. Additionally, the Emergency Operations Center was not prepared for retrieving or disseminating information. At one point during the fires, an Emergency Operations Center

official reported that it was getting most of its information from news reports.

In the 1970s the county closed its limited fire services department. Officials began urging those in unincorporated sections of the county without fire protection to annex into a community offering those services or to start a new, independent fire district to obtain protection for their area.

Without the county taking a leadership position to consolidate or unify the disparate fire services agencies, coordination will not occur. Further, until these jurisdictions and agencies begin to operate in concert, it will not be possible to tackle the other lapses that appear in organizational capacity due to this breach.

Nonetheless, this dissertation would not be complete without including other results of this study that reveal challenges or gaps in organizational capacity for SEMS within San Diego county.

In the twenty years leading up to the 2003 fires, California Department of Forestry and Fire Protection (CDF) forces had been reduced by 25 fire engines and 36 fire crews, leaving less than 200 crews and 340 fire engines to support its statewide efforts. Additionally, the CDF unit in San Diego (as well as those units in Riverside and San

Bernardino) receives funding based on an eight-month fire season. Numerous scientists have argued that the fire season in California has now extended to a twelve-month cycle (Duane. Franklin).

The absence of political leadership has had a desultory effect on the development of a unified fire protection system and ultimately the implementation of SEMS for San Diego county. Further, the exercise of effective leadership may be constrained or impacted by both the nature of the political culture and the nature of the voters. First, San Diego voters are not conservative in the sense of Orange County voters. In fact, the majority of registered voters in the city of San Diego are Democrats, and unions have made considerable inroads in the municipality.

Figures 13 and 14 demonstrate current data regarding registered voters and campaign contributions. Figure 14 indicates the financial influence of San Diego Republicans (San Diego County Republican Party and Lincoln Club contributions), while the other political actions committees listed point to the growing role of labor.

	DEM	REP	AIP	GRN	LIB	NLP	P&F	MISC	DECL	TOTAL
Dist. 1	30,873	37,113	1,784	639	562	153	95	341	24,442	96,002
Dist. 2	31,600	29,922	2,188	1,151	798	201	176	457	22,508	89,001
Dist. 3	32,592	12,755	1,481	1,099	609	240	273	258	15,609	64,916
Dist. 4	28,215	13,305	1,006	173	199	602	202	213	10,833	4,748
Dist. 5	23,881	35,967	1,675	359	449	128	127	331	20,157	83,074
Dist. 6	28,058	27,722	1,900	597	604	183	156	497	18,102	77,819
Dist. 7	26,439	26,301	1,487	495	470	159	157	314	14,595	70,417
Dist. 8	22,594	10,975	827	263	217	239	221	167	10,411	45,914
CITYWIDE	224,252	194,060	12,348	4,776	3,908	1,905	1,407	2,578	136,657	581,891

Figure 13. Voter Registration in the City of San Diego

Source: San Diego City Clerk

San Diego County Republican Party	\$ 856,842
LandGrant Development Corp.	382,172
San Diego City Fire Fighter Local 145	363,291
San Diego County Democratic Party	347,077
San Diego-Imperial Counties Labor Council	321,793
Atlas Hotels	294,717
San Diego Police Officers Association	198,147
Hotel Employees and Restaurant Employees International Union	163,864
The Lincoln Club	137,481
American Federation of State, County and Municipal Employees	108,961

Figure 14. Expenditures for San Diego City
elections: 2000-06 Totals

Source: San Diego City Clerk

San Diego voters, though, are not viewed as main-line Democrats and often vote against the kinds of proposals that are promised to benefit large segments of the population. Indeed, San Diegans in general could be characterized as independent-minded and somewhat mistrusting or not wanting to be involved with government. This view of voters extends from the observation of one top state official in describing San Diego politicians as having island mentalities or island cultures.

Perhaps the strongest demonstration of the "independent mindset" of San Diego voters is revealed by results of the March 3, 2004, San Diego county election, when voters rejected Proposition C, a proposal to raise the hotel room tax by 2.5% to 13% with a portion of the revenue earmarked for the Fire Department.¹² Money from the transient occupancy tax would have been shared with police, tourism, and park and coastal maintenance. Opponents to the proposal claimed too many limits were placed on how money could be spent by city officials, while some political analysts reflected that the measure may have been confusing as it was written:

¹² San Diego hotel room occupancy tax, which was at 10.5% at the time of the election (and remains in 2007), was among the lowest in the nation for major destinations.

Proposition C. Transient Occupancy Tax Increase to Fund Emergency Services, Roads, Parks, Tourism, and Other Specified Uses--City of San Diego

Shall the City increase the transient occupancy tax (TOT) paid by hotel and motel visitors by 2.5%, and shall these funds, along with some current TOT funds, be earmarked to fund Fire-Rescue and Police emergency services, equipment and facilities; road improvements; park and coastal improvements; tourism promotion; and library and arts programs; and shall public audits be conducted of the uses of these funds?

Six weeks after the defeat of Proposition C, three San Diego city council members began drafting a similar measure for the November ballot which this time enumerated that departments would share equally the 2.5% increase in transient occupancy tax until caught up on maintenance items, equipment purchases, and other deferred costs. Placed on the November ballot as Proposition J, this measure was defeated by a 3-2 margin.

On the same November 2, 2004, ballot was Proposition C, an advisory measure to assess public support for consolidating 35 fire protection agencies within the county.¹³ Supporters of the proposal (spearheaded by county supervisor Dianne Jacobs, who opposed the transient occupancy tax), pointed out that San Diego is the only large county without its own fire department. The initiative passed with 81% of the voters' approval for the advisory measure.

¹³ Proposition C on the March 2004 ballot would have increased transient occupancy tax, with a portion of the new money ear marked for fire services. The March 2004 Proposition C was defeated. Since the passage of Proposition 13 in 1978, California ballot measures initiating new or additional taxes must pass with 2/3 of the vote. Proposition C fell short by 5 percentage points.

Unincorporated areas of San Diego county account for nearly two-thirds of the county's land mass, representing a geographic dimension equal to twice the size of Rhode Island. The unincorporated population of 458,000 (2003) comprises about 16% of the county's 2.8 million residents. Prior to the March 2004 election, county Supervisor Pam Slater, who represents a large section of the city of San Diego as well as the heavily fire damaged communities of Scripps Ranch and Tierrasanta, said her constituents "have sent a flood of emails saying they won't pay to 'subsidize' the backcountry" (Gao. p. 4).

The defeat of propositions C in March 2004 and J in November 2004 cannot be attributed simply to self-serving interests of city residents unwilling to subsidize fire protection for high-risk rural residents. Rural residents in the eastern section of the county were among those hardest hit by the 2003 fires, yet less than a year earlier rejected four out of five measures to improve much needed emergency services there.

Other portions of the county's backcountry have historically delivered similar election results. Three county fire service areas had ballot measures on the March 3, 2004, ballot requesting funds for structural fire service improvements. Proposition M in County Service Area 111

Boulevard Fire District received only 44% affirmative votes; and Proposition N in County Service Area 112 Campo Fire District garnered just 27% positive votes. Meanwhile, Palomar Mountain Fire District in County Service Area 110 amassed 77% of the vote favoring Proposition L. Later that year during the November 2, 2004, election Pine Valley residents turned down Proposition AA to improve fire safety in their area. A similar measure Proposition P shared a similar fate in Escondido, as did Proposition S in National City.

The record of San Diego county's citizens not supporting even minor tax increases to improve public services led one local political science professor to make this comment when assessing the odds of passage for propositions C and J for the November 2004 election ... "[They will] still run into opposition from the 25 percent of backcountry residents who seem determined to vote against anything smelling of a tax increase, even to save old Granny from the wolves" (Luna. *Local ballot propositions from A to Zzzz*. October 17, 2004. *San Diego Union-Tribune*).

The San Diego city council seemingly shared the penchant of local citizens to reject tax increases, and suggested instead that visitors pay the proposed tax increase for residents' public safety improvements.

It has been noted in this study that some observers claim San Diego voters are conservative. The natural conclusion is that "less government" is desirable. However, neighboring Orange county is even more politically conservative; yet, immediately after the 1993 fires in that county, voters supported tax increases to improve its fire system. Eileen Padberg, one of southern California's leading political campaign managers for the past twenty-five years, was interviewed for this study, "There isn't a campaign I can remember in Orange county that didn't begin by seeking the endorsement of top law enforcement [county sheriff and district attorney] and fire officials--even bond campaigns. This remains true today even with the rise in Democratic Party voter registration in Orange county. Residents here support law enforcement and fire protection. It is different in San Diego county. When running a campaign there, law and fire endorsements don't have the same impact. Voters there are much more independent."

One difficulty implementing the concept of less government is that most people want eliminated only those programs not directly benefiting themselves. Does a preference for local government evolve from the Jeffersonian idea of local control? In part, but the area's development also plays a role.

Independent settlers have long been attracted to San Diego. Since Gaspar de Portola established the first California mission here in 1769, residents have been fond of referring to life in San Diego as an outpost. Accordingly, the area developed with norms that reinforced individual values. San Diegans' propensity for not wanting to pay taxes is well known; so is their pride in considering themselves small-town citizens. A common expression today around San Diego calls the metropolis the "city of villages" meant to reflect the many independent communities throughout the San Diego region.

Finally, two different theories advanced over forty years ago have application for this study. First, as stated earlier in this chapter, in Daniel Elazar's typology of political subcultures, San Diego politicians fit the Individualistic model. It also follows that the citizens of San Diego fit this characterization which has a reliance on the marketplace and views government in a limited role primarily in areas that support private initiative. Dirty politics are accepted as a way of business, and a negative view of bureaucracy is assumed.

Philip Converse linked his evaluation of citizen performance to a person's political understanding and ultimately to the person's ideological belief system.

According to these typologies by which the citizens of San Diego fit into the Individualistic model and incorporate the belief system that less government is best, it is not surprising that they have not supported increased tax measures.

Incentives

During this study of San Diego county, it became apparent that incentives for elected officials have a direct bearing on emergency management for the county.

For the past three decades, San Diego voters have rejected dozens of proposals placed on local ballots to raise taxes aimed at either improving current districts or creating a unified county fire protection system. Accordingly, elected county and regional (LAFCO) officials have not taken steps to establish a coordinated system, citing the wishes of the electorate.

Some call San Diego county a conservative county and point out that its residents tend to support the notion of less government; others just say San Diegans are cheap (Perry. *Los Angeles Times*. October 31, 2003). The reluctance of the now numerous independent districts in the county to give up control has created further obstacles to establishing a coordinated system.

In county hearings after the fires, Supervisor Dianne Jacob said, "I want to know who and what failed us and hold these people accountable. This should never, ever happen again." Jacob believes placing all districts under one command would strengthen fire service protection, and has urged LAFCO to develop a plan to merge smaller fire district or start a new county fire department.

During the course of the hearings, suggestions were made to limit development in the back country and mountainous regions of the county. Supervisor Bill Horn, who represents the north county, rejected that idea, suggesting instead that more prescribed burns take place in undeveloped areas in order to lower the fire danger.

In Chapter 2, free-ridership was discussed. The concept was mentioned again earlier in this chapter as a topic that continued to be introduced during interviews with emergency management leaders as an explanation for why San Diego did not have a countywide fire protection system. It was claimed by several individuals interviewed that this was a factor that most certainly existed in San Diego. This study uncovered numerous examples of the local mindset that seemingly prevailed, whereby policies and agreements promoted the notion of "someone else will take care of..." fire protection. Someone else included the CDF, independent and

volunteer fire districts, the state of California, incorporated municipalities, agencies of the federal government, the National Guard, the military, tribal nations, and neighboring jurisdictions. Political Science Professor Steve Erie (University of California, San Diego) said this:

San Diegans are cheap. We've come to rely on the kindness of outsiders in terms of mutual aid. It's the result of politicians who follow rather than lead (*ibid*).

It is enough for those seeking political office to share geographic boundaries with the citizens they hope to represent, while the successful office seekers generally share similar values with the citizens they represent. Because of analogous philosophies and values between citizens and the representatives they elect, at times it is not always clear who is leading with policy issues.

However, the 2003 fires in San Diego County exemplify the irony of individual shrewdness undermining collective rationality, the common pitfall for free riders. Moreover, free riders occur as a void in political leadership. As has been reviewed in this chapter, Diego suffered from both conditions.

In conducting research for this dissertation, it was learned that financial incentives exist for more than just California governmental jurisdictions and agencies. Financial

incentives are also in place for individual homeowners to maintain safety zones in and around their properties.

On an individual basis, insurance companies offer incentives to homeowners whose properties comply with fire resistant standards for building materials, such as fire proof roofing materials, closed eaves and eave vents, as well as double pane glass or window glazing for glass protection. In order to encourage individuals to incorporate these activities, first the incentives must be pointed out to them. As Schneider and Ingram first argued, and later Bardach asserted, incentives do not self-activate; and insurance companies are generally clear when offering such incentives to homeowners.

Other financial incentives were offered in the form of sanctions to San Diego homeowners living in high-risk fire areas. These required relevant homeowners to establish a 100-foot defensible space of vegetation clearance around their homes or face a fine. The difficulty, as Chief Bowman pointed out, was the lack of enforcement. On the other hand, in Ventura County where a 100-foot clearance was also required the program met with great success. Fire fighters first sent a warning to homeowners who had not met the 100-foot standard. When agents returned, they completed any untended clearance themselves, then sent the homeowners the bill.

Insurance companies also enforce a form of reverse-financial-incentive for properties located in very high risk areas. In some instances, insurance companies such as State Farm require vegetation clearance of 200 or 300-feet as a condition of obtaining homeowner insurance.

Learning

"When you send crews into a threatened neighborhood when everybody else is trying to get out, the ability for them to do their job is not based on the fire truck they're on; it's based on their background, education and experience that allow them to function safely in that kind of environment." This statement made in 2004 by former California Fire Marshal Ronny Coleman, refers to the process by which individual learning occurs for first responders. Integral to the learning progression is ongoing training. There are no statewide training standards or requirements for ongoing training for California's 62,000 firefighters.

Most firefighters specialize in a specific response activity defined as structural, airport, emergency medical, or wildland services. Due to complexities in preparing for these different types of fires, a large number of agencies, organizations, and jurisdictions are involved in delivering training programs. This is yet another reason that agency

learning is an important and necessary component of effective implementation.

In spite of this, many of the agencies, not-for-profit organizations, and private firms mentioned in this study had neither experience nor training with emergency procedures prior to the 2003 fires. This is where a strong, pro-active county Emergency Management Office can take the lead in calling for frequent inter-agency and jurisdictional training and table-top exercises.

Subsequent to the 2003 Southland Fires, the San Diego county Grand Jury initiated investigations into the EOC activities for the fires. The *San Diego Grand Jury Report 2003/4-08* filed May 25, 2004, was entitled, *The San Diego County Emergency Operations Center: Seeking Better Communications*. The report noted the limitations of the emergency alert system, and recommended exploring other means of mass communications of warnings, like the "reverse 911."

An article in the *North County Times* reports the following about the grand jury report:

Grand jury says San Diego county command center operated poorly during fires -- Seven months after the devastating October firestorms, San Diego county's grand jury has announced it agrees with the observations of many North County residents and officials ---- that the county's emergency operations center did a poor job of disseminating information about the disaster to the public. The 14-page report released Tuesday also said the grand jury determined that the federal Emergency Alert System was an inadequate tool to warn the public about catastrophes such as the wildfires, and urged county supervisors to

look for new warning systems such as the "reverse 9-1-1" system the board voted to buy in March (Conaughton. *North County Times*, May 27, 2004).

As part of this research, a site observation was made to the San Diego County Emergency Operations Center (EOC) in June 2005. Over the course of research for this dissertation, site observations were conducted at emergency operations centers for several California counties and cities, as well as the one for State of California in Sacramento. The one in San Diego is unique. One of the first things noticed upon arriving there was that it not only shares land with other county departments, but adjoining the EOC office is the county department for surplus and unretrieved items, such as bicycles picked up off the streets, etc.

During the course of interviewing a top official at the Emergency Operations Center, questions were asked about the protocol for communicating evacuation notifications to residents. The official asked if the county--since the 2003 fires--had developed partnerships to disseminate evacuation information for future disasters with local telecommunications firms, such as Internet providers, to post evacuation information on their web pages, or for cell phone providers in the area to send both text and audio messages to local subscribers, as well as with television and radio stations to broadcast either announcements or display a printed message.

The response from the Emergency Operations Center official was that they would not be doing those things, that instead they would just utilize reverse 911.

This is the action that was suggested by the Grand Jury Report (referenced above). Still, other methods are available in calling for public evacuations, such as those implied in the question. The official's willingness simply to follow the Grand Jury recommendation indicates a further lack of innovation. Potentially more seriously, it suggests the possibility of an absence of independence from other entities, in this situation the Grand Jury recommendation, which by no means constitutes subject matter expertise.

The state of California cannot mandate unfunded programs. (*California Government Code of Regulations*; Chapter 1 SEMS: Title 19 Public Safety No. 2401). Accordingly, SEMS is constrained from requiring a specific number or types of training activities within an Operational Area. In conversations with SEMS officials, they indicated that their emphasis on "Best Practices" is as far as they can go in encouraging an Operational Area to initiate the training sessions which are attributed to successful response programs.

The 2003 fires demonstrated effective departmental learning for the Ventura County Fire Department. Ventura is

another southern California county that has experienced numerous blazes in past years. Prior to the 2003 fires, county officials adopted and aggressively enforced a policy mandating vegetation clearance of 100 feet around structures located in high risk fire zones. At the conclusion of the 2003 firestorm, only 38 homes were lost in Ventura, although over 172,000 acres were burned by fire.

In San Bernardino county, where the ordinance for vegetation clearance permits only a 30-foot defensible space around properties, more than 1,000 dwellings were lost in the 2003 fires. On the other hand, San Diego county ordinances called for 100-foot clearance zones around homes in high-risk fire areas, but budget problems limited the enforcement of these rules. Fire reports, analyses and photographs are replete with story after story of full neighborhoods that succumbed to the blazes, with the exception of a lone house that survived intact and had been constructed with fire retardant materials and surrounded by 100-foot buffers.

San Diego Fire-Rescue Chief Jeff Bowman spoke of the resistance that fire marshals and inspectors encountered when trying to enforce county ordinance for defensible spaces. "We tried to implement several local building code and brush management changes. If you can imagine, the very people that

came forward to fight us on those proposed changes were the ones that lost their homes, almost to a person."

In examining effective implementation for SEMS, it is also relevant to consider the learning process for the public. Once again, as with other aspects of implementation studied for this dissertation, evidence supports the conclusion that educating the public is an ongoing process best accomplished as the result of extended, directed activities emanating from the offices of elected officials. This is a function tied to political leadership.

Summary

The case study in this chapter examined the implementation of SEMS for activities associated with the 2003 Southland Fires in San Diego county. Aspects of implementation were examined within the clusters of organizational capacity, incentives, and learning.

The findings demonstrate the significance of the political process for implementation. The leadership void in San Diego led to gaps in organizational capacity for the county. While numerous aspects of organizational capacity contributed to the emergency response outcome in San Diego, most of these shortcomings stemmed from the absence of a coordinated countywide system of fire protection, resulting from a lack of political leadership.

Subsequent to the 2003 fires, public officials in San Diego claimed their primary reason for not creating a countywide fire system was caused by a lack of revenue, largely created by changes in local government funding formulas resulting from Proposition 13. However, San Diego county announced in 1974 that it was no longer in the fire protection business. This occurred a full four years prior to passage of Proposition 13. Although initially, the county encouraged the creation of the numerous special districts, by the late 1980s county assistance to special districts ceased.

Beginning in the late 1990s, the city of San Diego became mired in financial problems due to the under funding of its public pension program and the construction of the baseball park. This situation further hindered the expansion of the San Diego City Fire Department and what is the county's largest fire department.

Interviews with public officials in San Diego county supported the notion of the free-rider concept for the jurisdiction. At some point during the discussions, each individual interviewed offered statements indicating that the prevailing view was that fire protection for the area would be provided and covered by another jurisdiction.

CHAPTER 8

IMPLEMENTATION OUTCOMES AND POLICY IMPLICATIONS

"Unless and until public policymakers at all levels of government muster the political will to put the protection of life and property ahead of competing political agendas, these tragedies are certain to repeat."

Senator William Campbell, Chairman
Governor's Blue Ribbon Fire Commission 2003

Introduction

On the basis of the examination of SEMS, the purpose of this study was to ascertain how organizational capacity, incentives, and learning affect the process of public policy implementation. To accomplish this objective, specific aspects of California's emergency management program were studied to determine whether critical factors and processes could be identified that impinged upon or contributed to the successful implementation of SEMS.

This study was informed by primary assumptions gleaned from the literature on policy implementation. My analysis contends implementation is an ongoing process (Pressman and Wildavsky). A second perspective utilized in this research

extends from the notion offered by Ripley and Franklin that defines successful implementation as a process leading to "desired performance and input." Another assumption was that successful implementation for emergency management requires a flexible program as advocated by Dynes in his argument for increasing pre-disaster activities.

In order to assess the SEMS program, this study conducted research utilizing three analytical clusters of variables associated with emergency management policy. These variables were organized along dimensions of organizational capacity, incentives, and learning among the actors and organizations involved in the implementation of California's SEMS. Another assumption includes the belief that policy tools play a key role in providing insight into the functions of each of these variables. While different tools are more effective than others for specific aspects of the implementation process, this research confirmed the usefulness of policy tools as motivating forces for all stakeholders (Bardach; Comfort; Schneider and Ingram; Stone).

Further, both top-down and bottom-up perspectives were relevant in the examination of SEMS' implementation. Implementation functions that emerge from the policy making process must necessarily reflect decisions at the top and the bottom. Still, the results of this study demonstrate that a

network approach bears a more significant influence on successful implementation outcomes (Hjern; Bardach). In this way, all stakeholders are involved in each aspect of the process.

Finally, a directed system of shared governance is critical to the successful outcome. Successful emergency management implementation requires collaboration and coordination among public agencies and private actors throughout the process.

Using San Bernardino and San Diego as case studies proved useful in shedding light on many of these issues. Because such discrete outcomes occurred in each county during the same 2003 firestorm, differences could be assessed surrounding each county's activities for organizational capacity, incentives, and learning.

***Case Studies: SEMS' Implementation in
the 2003 Southland Fires***

San Bernardino and San Diego Counties

For wildfires the relationship has been established between dried fuel sources and foehn (Santa Ana) winds. The bark beetle infestation was another major factor in 2003 creating hundreds of thousands of dead trees in the forests (without prescribed burn offs), which then developed into major fuel sources. Other contributing factors were new

developments along the forests. Studies show that when vegetation clearance zones around structures are consistently enforced in communities (such as in Ventura county), that fire damages to structures go down dramatically because fires don't spread as quickly.

When temperatures reach near triple digits (95-100 degrees), humidity is in single digits (6-8%), and extremely erratic wind gusts in double digits, it is impossible to stay ahead of a fire. It is also too late to begin plans to fight a wildfire. Plans need to have been well organized, reviewed, practiced, and understood by all stakeholders ...including the public, long before these forces intersect.

When the first flame ignites--whether the result of a lost hunter trying to signal his location to potential rescuers as was the case in igniting the Cedar Fire, the state's most destructive wildfire, or the result of arson such as in San Bernardino county's Grand Prix Fire, or any other cause--first responders move into action. Later, media shots will capture some of the frenzy as first responders race to the front of the blaze to complete assigned duties, never asking if political leaders have completed their assignments.

As evidenced in the previous two chapters of this study, emergency management implementation for San Bernardino

and San Diego counties shaped the disparate effects of the 2003 Southland firestorm in those counties. There is no question that the Cedar Fire in San Diego was a stronger, more intense blaze. Nonetheless, data gleaned from these studies suggest a large discrepancy in the attitudes, approaches, and activities of public officials in the two counties, which is seen to have directly contributed to the different outcomes.

San Bernardino county's organizational efforts in preparation for the 2003 Southland Fires continue to be cited as an example of innovation spurred by local leadership and commitment. On the other hand, San Diego county still has not made progress in developing a unified system since the occurrence of the 2003 Southland Fires.

Which conditions contributed to such different results? A complete understanding of each requisite factor leading to effective implementation remains a challenge. Nonetheless, major themes and insights have emerged as a result of this study, and in particular from the case studies of San Bernardino and San Diego counties. Tip O'Neill's observation that "all politics are local" certainly has application when examining how San Bernardino and San Diego counties implemented SEMS and the local emergency management program for each jurisdiction.

First, committed political leadership was demonstrated (Katz) in San Bernardino county, where top county administrators, locally elected officials, and leaders of public agencies at various government levels joined forces with a common dedication and purpose. Their objective was to create a collaborative system for disaster preparation in San Bernardino county that included all levels of government, as well as stakeholders from the not-for-profit and private sectors, including individual citizens and citizen groups. The authority of the individual offices was exercised to ensure utilization of all possible resources to accomplish this objective.

By undertaking this activity, political and administrative leadership was demonstrated. As defined earlier, this study considers leadership to include exerting influence to get others to take actions that otherwise would not have occurred. The implementation of emergency management policy in San Bernardino county bolsters Katz's argument that top level officials are in the best position to offer leadership leading to allocation of resources and rewards.

Meanwhile, San Diego county suffered from overwhelming structural limitations. However, those may not have been the core of the county's problems. As mentioned in the previous chapter, a conversation with a top California emergency

management official described San Diego as having an "island culture."

Even city government is characterized by a neighborhood focus at the council level, with the city manager effectively running the city. Some political observers attribute this effect to a natural result of term limits requiring office holders to concentrate on short-term district considerations versus city-wide issues (Rand, p. 12). When considering San Diego's social and political culture, these are significant factors, and no doubt contributed to the fact that no elected official stepped forward to develop a political-public partnership.

Heifetz contends that leaders must be able to mobilize groups. He points to an important characteristic of the public as the need to be involved in the learning process as a means of developing a sense of responsibility for the issue at hand. This activity would have been most likely to mobilize the public while advancing the item to the political agenda in order to create a countywide fire protection system (Kingdon). The findings from this research reveal that the lack political leadership was the largest impediment facing San Diego.

Earlier decisions relating San Diego's baseball park and the employee pensions produced a barrier over which officials

could not climb. Both news accounts and government records indicate that not only was there a lack of money, but that political officials were busy responding to deteriorating financial conditions while other areas readied for the fires.

The aide's unresponsive answer to the follow-up question actually provided insight to this query. A countywide fire protection system had not risen to the political agenda since the county declared itself out of the fire protection business in 1974. However, by the year 2002 as San Bernardino and neighboring counties began preparations in response to predictions to the upcoming fire, officials in the state's second largest city were busy trying to salvage their political careers by defending previous political decisions--namely the baseball park and the unfunded pension plans of employees.

San Diego's elected representatives have often retreated to the position that the voters had repeatedly indicated they did not want to pay for a countywide fire system. Yet the cases of San Bernardino and Orange counties demonstrate that with strong, enduring political leadership, the voters will support such a proposal. Thus, it may be assumed that in San Diego with the proviso that all other things are equal that similar election results will follow.

However, just as office seekers do not simply submit their names to ballots and then automatically win elections without serious campaign efforts to educate the public about their candidacies, so, too, do ballot measures require similarly intense efforts. And just as serious office seekers, who may not have won their first bids for public office, will re-double their efforts at the next election, so, too, must that thoroughness and dedication be demonstrated when seeking approval of ballot measures. This was not done in San Diego.

Instead, San Diego county--with 60-plus agencies offering some form of fire protection service--adopted the approach that each agency would manage its own functions.

The case studies demonstrated that during the height of the 2003 firestorm, commanders tried to play catch-up to establish channels of communications, logistical organization, and resource allocation. It was too late to develop successful plans of collaboration.

Local Tax Base

The 1978 passage of Proposition 13 created a number of funding issues for local governments. As discussed in Chapter 5, Proposition 172 on the 1993 statewide ballot provided a guaranteed funding stream of one-half cent from sales tax revenues to local governments for public safety. Eleven years

later in 2004, Proposition 1A was placed on the statewide ballot just twelve months after the devastating 2003 Southland Fire Siege.

The measure, which passed garnering a whopping 83% of the statewide vote, prohibits the state from shifting local government funds into the state general fund. Effective January 1, 2006, the measure guarantees the revenue source to local governments.

The information on San Bernardino and San Diego's socio-economic environment found in chapters 6 and 7 of this dissertation provided data for the counties' property tax bases and stated that the percentage of the property tax retained by San Diego county is higher than that for San Bernardino county. Under provisions of legislation that defined local government funding formulas subsequent to Proposition 13, San Diego county retains 14% of its local property tax revenue, versus San Bernardino county's retention of 11.9%. (see Chapter 6 for San Bernardino county data).

On the surface funding availability seems similar for each county. However, a state law prohibits using property tax funds for fire districts created after 1978. Thus, the option for San Diego of establishing a new countywide special fire district with property tax funds is precluded by state

restrictions. Of course, special districts may charge fees for services, but, again, this type of proposal has been repeatedly rejected by local voters.

A drive through San Diego belies these grim reports. Surely, there is not much wrong with a such a shining, prosperous looking city regularly bursting with new office buildings that showcase the latest architectural designs, complete with prospective tenants lined up to outbid one another for the opportunity of an address with ever-rising rental rates overlooking the great Pacific Ocean and gleaming convertibles at sunsets. That's the image that many have of San Diego, and it is more than an image. It is the way San Diego looks on most days of the year. It may also be the reason that even the locals found it hard to take the steps necessary to meet the warnings of future disastrous fires prior to 2003. Perhaps this was also why Fire Chief Bowman was so easily moved aside as he repeatedly warned that San Diego was in terrible shape and did not have the resources to protect its citizens when (not if) a moderately severe wildfire occurred.

San Diego: Your attitude is showing

Just as political office holders reflect similar values and attitudes as the residents who elected them, so, too, do

the policies and decisions made by the office holders extend from their values and attitudes once elected.

San Diego had financial, structural, and attitudinal problems that clearly impacted the 2003 fires. The city's financial situation as well as its structural condition reflected decisions and choices made by its elected officials. Numerous examples demonstrate an attitude that did not prioritize public safety. For instance, the emergency command center had out of date maps for a county with one of the highest growth rates in the nation. These maps were given to out of the area fire fighters bussed in to defend their property and lives.

The same government offices kept out of date telephone books, so that when calls were placed in the height of the blaze, wrong numbers were often reached. These were not financial decisions. Nor was it financial that the Chief of the San Diego Fire and Rescue was not called at home to notify him of the Cedar Fire. Instead the assistant chief, who was on duty that night, phoned the mayor to notify him of the blaze--who also never notified Chief Bowman.

It was not a matter of money when Emergency Command Center officials decided not to sound the alert Emergency Alert System while residents slept to notify them of the inferno racing toward them and warning them to evacuate. The

officials later said they did not want to create traffic congestion. It was not a result of finances that the same Emergency Command Center remained closed for most of the first day of the fire, or for the first two days of the Cedar Fire that the Emergency Command Center relied on the media for information and communication.

Moreover, it required neither capital outlay nor financial expenditures for either the city or the county to initiate meetings designed to coordinate activities among the 60-plus agencies designated to provide fire protection in the county--especially when predictions were announced. After the 2003 fires, when San Diego county still did not have a county fire department, it was an "interesting" decision that led the sheriff to purchase two firefighting helicopters, while the city of San Diego--with the largest fire department in the county--has no helicopters.

The items above all resulted from political or administrative decisions reflecting the attitudes and values of those elected to protect the citizens.

During his four years as San Diego Fire Rescue Chief, Bowman was a frequent critic of City Hall, often claiming its lack of courage to raise taxes was precluding the city from being prepared for a major disaster. Evidence accumulated in this study indicates the lack of financial commitment to

emergency management played a significant role in the disastrous implementation activities surrounding the 2003 fires in San Diego. However, data collected also suggest that finger-pointing extends beyond City Hall.

Organizational Capacity, Incentives, and Learning

This study proposed examining three clusters of variables associated with emergency management policy implementation. It was anticipated that from this research an understanding would be created concerning the influence of these factors. Aspects of organizational capacity, incentives and learning were examined; and the understanding gained from this study provides answers to the question of whether the successful implementation of SEMS is linked to its objectives of successful implementation. The means of achieving success involves flexibility, coordination, and standardization.

Organizational Capacity

"The closest thing to eternal life on earth is a government agency because once created, they almost never go out of existence." These comments were made in an interview for this study with Senator William Campbell, Chairman of the California Governor's 2003 Blue Ribbon Fire Commission. Campbell made this observation in response to questions about

consolidating into a single countywide system all the various fire protection agencies that exist within San Diego county.

The point of Campbell's aphorism is illustrated in a *San Diego Union-Tribune* report written as the 2003 fires began to subside and feature interviews with local fire department chiefs about consolidation.

"It would be like going to Del Mar and telling them, you know what, you will be more efficient by joining the city of San Diego," said Erwin Willis, chief of Rancho Santa Fe Fire Department.

Willis said unification is unnecessary because in the event of a major fire, district firefighters and engines are controlled under one agency in charge of incident command.

Santee Fire Chief Bob Pfohl, president of the San Diego Fire Chiefs Association, said it is a complex problem that his group continues to study.

On one issue, all agree: the county should have more resources to fight fires.

Thornton. Monteagudo. *San Diego Union-Tribune*. November 1, 2003. Retrieved from http://www.signonsandiego.com/news/fires/weekoffires/20031101-9999_1nlpolicy.html

Organized resistance to district consolidation was expected. Indeed, interviews for this study, including those with representatives of special districts, confirmed that widespread opposition would likely be incurred. With repeated public votes rejecting new financing to support such an effort, strong political leadership would be necessary to spearhead such a project. To date, that has not emerged in San Diego county, in spite of some limited "testing of the political waters" that has been demonstrated by a few elected

officials on this subject. The separate discussion of political leadership in Chapter 2 identifies more fully the implications of San Diego's absence of political leadership.

Moreover, integral to any effective emergency preparation program is collaboration among agencies and jurisdictions. Problems stemming from the absence of pre-planning are manifested during an emergency, as issues reflected by lapses in coordination, communications, evacuations, resource utilization, logistics, and command decisions.

Even the use of equipment is tied to leadership. New technology is steadily being developed that can provide support to fire suppression efforts. For instance, geographic information systems offer quick visual representation of critical information. The challenge for organizations is to share data prior to an incident, in order to maximize mitigation efforts.

The use of maps during fires for the two case studies illustrates the issue. In San Bernardino the local MAST members partnered with the private firm ESRI to create and distribute digital maps prior to the 2003 fires. This contrasts with San Diego, whose offices also had the same technology available to them, but did not use it. In a report issued by the San Diego City Manager's Office to the City

Council, details were provided about the manner in which the City Information Technology and Communications Department began to develop maps of the area on October 29, 2003--five full days after the start of San Diego's Cedar Fire.

The San Diego report after the fires also included a request for the purchase of new Thomas Brothers maps, because the ones available during the 2003 fires were found to be out of date--as were the city telephone directories in the Office of Emergency Services (Manager's Report No. 03-242, p. 17). Thus, information was either not available or was incorrectly disseminated to emergency responders. Numerous reports demonstrate the complications created by simply not having maps. The problem was exponentially compounded when considering that many local firefighters were out of the area on mutual aid assignments. Thus, many early responders were brought into San Diego county from other areas. They were not familiar with the geography. Next, severe communication problems with inoperable equipment were most often resolved by face-to-face meetings, further complicated with inaccurate maps citing possible locations.

SEMS would benefit from increased specificity for minimum performance expectations for coordination. As the evidence in these case studies reveal, large gaps exist for SEMS implementation across different counties. The SEMS

framework offers sufficient guidelines for constructing a successful and efficient emergency management program; however, what is also learned from this study is that the current SEMS framework requires effective local leadership to ensure effective implementation of the policy. Whether this will be accomplished with the advent of NIMS is a subject that must be reviewed after NIMS has been fully implemented.

According to every emergency management official interviewed for this dissertation, NIMS is a welcomed refinement to the SEMS program. NIMS is applauded for building on SEMS' principles. Even though SEMS promised standardization, the term was initially defined to mean standardization of terminology and inter-operability of equipment. When SEMS began in 1993, the concepts of inter-operability, standardization, and coordination were new.

In conversations with several high ranking SEMS officials as well as emergency management agency heads, the expectation in California is that organizational capacity within the state will be enhanced as a result of NIMS' enactment. This is largely the result of the grant money offered by NIMS and the ability of the federal government to initiate standardization across jurisdictions in a discipline whose leaders recognize the need for shared resources.

From all research conducted on the subject of organizational capacity, it is the conclusion of this researcher that political leadership and availability of resources are the strongest predictors of innovative approaches to enhancing collaboration, coordination, and standardization.

Incentives

A portion of the research for this dissertation included uncovering the types of incentives that motivate stakeholders to participate in SEMS. It was noted at the outset of this research that a disincentive existed for state and local agencies that did not comply with SEMS' guidelines. Any state or local entity not participating in SEMS would not receive the state or FEMA reimbursement costs associated with emergency response activities.

Interviews with California OES officials indicate such action has not been necessary, and no reimbursement revenue has ever been withheld due to lack of participation in SEMS. This is not to say there has been total compliance with SEMS guidelines; it is just that the state has not viewed any punitive actions necessary.

Nonetheless, other disincentives were uncovered during the course of this research. The differences between the emergency management organizational structures in San Diego

and San Bernardino counties demonstrate the wide latitude available to a SEMS Operational Area in establishing its response structure.

To argue that centralizing decision making by changing the location of where decisions are made (e.g., from county to state or federal agencies) does little to predict an equal outcome. The hopes behind such an effort most likely reflect a desire to alter the balance of power and obtain favorable results in specific areas of interest. With a silent nod to Americans' preference to local control, Deborah Stone claims political theorists enjoy debating the value of "different sized decision-making units." She argues that the real question is not "whether small or big is more beautiful, but who is dominant in a given arena" (p. 364).

Financial Incentives

The response to this dissertation survey from San Diego county and interviews with San Diego officials--as well as government documents studied for this research--point to the financial disincentives that retarded the development of a unified county fire system. Evidence presented in this dissertation demonstrates that San Diego's elected officials determined the cost was too great for their jurisdiction to maintain a unified fire protection system.

Several state fire officials, as well as leading subject experts for fire protection, were interviewed for this study. When asked about San Diego's lack of a countywide system of fire protection, each person interviewed spoke of the county's attitude and belief that other jurisdictions would take care of any fire that threatened their cities or districts. Indeed, in the 1970s when the county closed its limited fire services, it encouraged and supported the proliferation of special districts throughout the county. San Diego county's official position that they do not need to offer fire protection to their residents tends to bolster the notion that free-ridership is alive and well in San Diego.

However, to delay or even reject the creation of a unified countywide system may be shortsighted, revealing lapses in fiduciary responsibility (Olson). Nonetheless, government has a finite amount of funds available, and expenditures inevitably involve tradeoffs. A countywide fire protection system would most assuredly be established at the expense of another project--a school, a health care program, etc.

In economic terms, the consideration of these tradeoffs is called "opportunity costs." While the creation of emergency management programs are not defended in purely economic terms, the tools of cost-benefit analysis may still

be utilized here, just as they are with other policy decisions.

Although this is an area of research best suited for inter-disciplinary studies, such as public finance and public administration, nonetheless, consideration of the issues merits identification in this dissertation. For instance, in San Diego county, the costs of creating a countywide fire system could be contrasted to monetizing all losses incurred from the 2003 fires.

One example of losses to be monetized is the economic cost of mobilizing the National Guard reserves, especially if unemployment levels were low and the local reserve soldiers were not available to perform their private-sector jobs, thereby diminishing market output. Other factors include the following: (1) the loss of business sales--and attendant sales tax revenue--due to fire; (2) the loss of productivity to the area; and (3) the loss of sales tax revenue due to residents moving away. As a cushion against these potential losses was the knowledge that other jurisdictions (the state and small volunteer departments) had taken care of San Diego county's unincorporated areas in previous fires.

The 2003 fire was too large to count on neighbors' protection.

Administrative Incentives

Even though SEMS is primarily a management and political tool, many of its principles are eagerly embraced by first responders--or the individuals Lipsky termed "street level bureaucrats." Indeed, this is the group of individuals who wrote the SEMS policy; and it is noteworthy that a decade after SEMS' inception, its principles are still supported by the individuals and departments researched in this study.

The genesis of the San Bernardino case was the leadership offered by local first responders. County officers recognized the incentives (financial, administrative, and social) in preparing for the impending fire, and brought them to the attention of other stakeholders (Bardach). Still, what was not as clear were the precise factors that served as incentives for the county administrative office to begin the process. Data gathered in this study lead to the belief that the same incentives influenced county officials as did other stakeholders, although the degree of motivation triggered by each incentive considered in this dissertation is best determined in future research.

Likewise, it was a similar dedication to SEMS' ideals of cooperation, collaboration, standardization, and interoperability that led to a different type of action in

San Diego. When San Diego City Fire Rescue Chief Bowman resigned in frustration in 2006, he pointed to the city's lack of resources and commitment to fire protection. Claiming that these conditions left the city vulnerable and unprepared for future disasters, Bowman was the second consecutive chief to resign due to these issues.

Finally, new administrative "incentives" (or perhaps it is more appropriate to term them "disincentives") are anticipated as NIMS proceeds. As previously mentioned, provisions of NIMS are requiring a higher level of coordination and collaboration. Further, FEMA and Homeland Security funds are tied to compliance of these standards, and this is expected to have an impact on jurisdictions, such as San Diego.

Social Incentives

The early development of MAST in San Bernardino county is emblematic of a social incentive for public agencies and individuals. As the organization was first being developed to bridge jurisdictional boundaries, stakeholders knew well the history and turf issues which had previously divided some of them. Still, as more agency heads committed to MAST, so did the social incentive for the remaining agencies and individuals.

Civic leaders and government officials in San Diego also knew and were concerned about fire dangers for 2003. It is with civic pride that San Diegans began calling their municipality "America's finest city"--a term that was removed recently from the official city's website and marketing campaigns. It may seem an ephemeral consideration, but civic pride is clearly diminished.

All stakeholders--individual first responders, government agencies, jurisdictions, politicians, and the public--share the common desire of seeking to prevent and mitigate fire damage. Still, differences exist in the incentives that resonate with each group. The discussion above includes motivations for many of these stakeholders, and incentives for the public cannot be overlooked.

After the 1993 Southern California Fires (see the discussion in Chapter 5 of this dissertation concerning Laguna Beach in Orange County), the CDF developed the *California Fire Plan*. The plan was created as a means of reducing losses and costs from future wildfires. Importantly, the plan states the issues surrounding fire losses cannot be solved by government alone and urges citizen involvement as well. That is to say, citizens also must be educated to take ownership of this issue and take individual steps to protect their property.

The plan also identifies different strategies for pre-fire management of various high-risk, high-value assets including hydroelectric power plants, water storage plants, recreation sites, scenic areas, and historic buildings. Once they are identified, CDF develops a cost-sharing of the pre-fire projects for all stakeholders which seek state, local, and private funds as a share of the project costs. Moreover, there is an increasing call for firefighters during the intensity of wildland blazes to pass by the homes that have not complied with vegetation clearance standards.

Learning

Over the past decades, general knowledge has accumulated about various aspects of fire mitigation. At the jurisdictional level, that knowledge has been transformed for many southern California counties into local policies, county ordinances, or department procedures.

A brief overview of what some southern California counties have done in this area will illustrate the point. Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties have each shown strong leadership in advancing emergency management. Ventura county is acclaimed for its early, aggressive role in mandating and enforcing 100-foot vegetative clearance zones in high fire areas throughout the county (this became a statewide law after the 2003 fires), as

well as paving the way to require the building industry to incorporate fire safe construction materials and procedures into all its plans. This enabled Ventura county to withstand the 2003 firestorm without the loss of a single home.

Similarly, Los Angeles county has received recognition for unifying the planning and response efforts of a large city fire department and a county fire department. Their steadfast efforts to develop a collaborative system ended the competitive turf wars that had existed within the city and county departments for many decades. In addition to altering the course of competing agencies, the Los Angeles city and county programs are cited as examples of a professionalized system of shared governance.

Orange county assiduously applied the lessons of the 1993 firestorm incurred in that jurisdiction. The county unified its disparate special districts; and today the Orange County Fire Authority (OCFA) is among the most respected fire agencies in the country. OCFA is organized as a special district, and also contracts with the State CDF to provide protection to state responsibility areas within its boundaries.

Moreover, OCFA is known for its active research and adoption of new techniques, approaches, and equipment. Laguna Beach was one of the first cities in the state to utilize

"rent a goat" for vegetation control. A private company now provides goats to contracting jurisdictions to roam their hillsides and chew down vegetation.

Currently, California cities from Oakland to San Diego are hiring herds to manage the vegetation that could fuel wildfires. The reason for their increased popularity is primarily financial, although solid documentation exists demonstrating the effectiveness of animal grazing in wildland areas to create and maintain fuel breaks, particularly in sensitive steep slope areas. These are the areas that are more difficult to reach with traditional types of equipment or to control which prescribed burns, and also the areas where fires race most quickly up steep inclines. Thus, in these areas hungry, grazing goats have proven a viable resource. (California Fire Alliance; Texas A & M; University of California, Berkeley). San Diego City Deputy Fire Marshal Eddie Villavicencio explained that city's recent use of goats for vegetation management, "When you use goats, [the price] can come in at the \$10,000s, not the \$100,000s" (Steele. *San Diego Union-Tribune*).

Two of the precepts from the MAST program are models for emergency management preplanning. The project that started in 2002 in San Bernardino and Riverside operationalized a new approach for shared governance. Further, the Joint

Information Center (JIC), established for media and public information, was a concept so straightforward and obvious that many people wondered why it had not occurred previously. The JIC program was established as a one-stop shop to include public information officers from all responding emergency services agencies. In this way, the public and media could contact just one source for the latest information. Both the public and members of the media reported on the success of this effort.

Not all learning, though, has such distinguishable characteristics. For instance, reports issued subsequent to the 1991 Oakland Hills Fires, the 1993 Southern California Fires, and the 2003 Southland Fires all contain some similar themes. Namely, recommendations are made after each of the three fires for a unified system of communications.

Part of the ongoing problem is that, in spite of the fact that significant advances have taken place in the past fifteen years, a communication system does not exist that serves all needs for both urban and wildland communications. Another part of the problem involves the need to include communication during emergencies with multiple jurisdictions, agencies, disciplines, and personnel beyond firefighters and law enforcement such as medical personnel, utility providers, and public works and roadway personnel.

As stated previously in this study, with the deployment of federal teams comes their use of radio frequencies incompatible with most local systems.

It was private fire associations that provided the first fire protection to its members, and fire departments only began to convert into public agencies during the 19th century (Hakim, p.51). Even then, the transition from private firms to public agencies occurred in a somewhat hopscotch fashion across jurisdictions. This is thought to have contributed to the range of equipment purchased by departments.

As stated previously in Chapter 5 in the discussion of communications equipment, currently most local fire agencies rely on equipment with a 150 MHz or 800 MHz frequency, while most local law enforcement employ a 450 Mhz or 800 Mhz frequency. State and federal government first responders operate on different channels. Further, the handheld equipment issued to each California Highway Patrol Officer utilizes CALCORD, although that is not compatible with communication system in their vehicles.

Even when emergency responders have the same communications equipment, channels are routinely jammed with the high volume of use; mountains or building construction often block transmission; or in many cases the roar of fires simply is too loud for anything else to be heard. Moreover,

contracts and large financial commitments are in place for existing communication systems; and with no one resource that indicates it is the answer, departments are justifiably reluctant to make a change with all that implies.

Even though fire protection is a local responsibility, inter-state mutual aid compacts and cross-jurisdictional collaborations have transcended the boundaries of local issues. What is required is political leadership beyond the local level in order for emergency responders at all government levels to utilize similar communication systems operating on the same frequency. At this point, no political leader has been identified to assume this important and costly issue and move it to the political agenda (Kingdon).

Beyond communications, the need for improved training is stated in the 1991, 1993, and 2003 after-action reports. For individual responders, the level of learning depends upon either the training offered or mandated by that department and/or the individual initiative of the particular employee. Further, because California does not have stated standards for specific levels of training, uneven levels of learning exist across departments throughout the state. This is another problem reported in every after-action report.

Complicating the issue of uneven training levels utilized by fire departments are three additional facts.

First, emergency response increasingly includes individuals from governmental agencies and private firms that have not had experience or ongoing training in emergency response. Agencies such as General Services are required to manage purchase orders for food, supplies, and equipment. Parks and recreation departments generally support shelter and evacuation activities. Public works departments are needed to organize road repairs; likewise, sanitation departments are involved in various aspects of clean-up efforts; planning departments are increasingly pressured to approve permits for rebuilding subsequent to a disaster, raising whole new issues, such as whether permits should be modified in areas vulnerable to disasters.

Secondly, in recent years departments at all levels--state, county, and city--have experienced large numbers of retirements from commanders. This has had a noticeable effect on the level of accumulated or tacit learning inherent in individual commanders, as well as that available within a department (Polanyi).

Finally, large scale emergencies more frequently utilize resources from neighboring states, as well as the National Guard--both of whose members have historically demonstrated little knowledge or experience in the California system for emergency response procedures. Even on mutual aid calls

within California, some responders are from urban fire districts and are primarily trained in urban firefighting, inevitably leading to lapses in training on specific types of equipment.

Moreover, continued development into fragile, vulnerable areas described as wildland-urban interface should be reviewed. Involvement of citizen expertise, community planners, as well as developers and the building industry are necessary for sustainable development. Questions relating to the kinds of building materials to be used and the amount of defensible space around structures will be answered by a jurisdiction's level of acceptable risk, willingness to establish and enforce new codes, and ultimately each jurisdiction's commitment to improving fire safety.

Rejecting these actions would reflect a further lack of political leadership for this subject in San Diego. Moreover, while San Diego election results are not considered a positive sign of learning, they do provide another opportunity for research.

Implications

Political Science Literature: Expanding the Definition of Policy Implementation

The objective of this research was to consider whether specific dimensions of the policy implementation process

could be revealed to advance or impinge upon the successful implementation of SEMS, California's emergency management program.

The findings, as discussed in the previous section, demonstrate that several factors contributed to successful implementation. In particular, political leadership was determined to provide the impetus for numerous successful actions that followed, leading to the positive results in San Bernardino county during the 2003 firestorm. The statement that "policies don't self-implement" (Wilson) is as true today as it was over a century ago.

The results of this research also support a contemporary definition of implementation first offered by Pressman and Wildavsky. The scholars argued for implementation to be viewed as an ongoing process of adjustment and problem redefinition by incorporating lessons learned.

Indeed, the lessons from the case studies in this research point to the need for expanding this definition of policy implementation for emergency management. The expanded definition begins with the notion of an ongoing process and is enlarged to necessarily include the activities of a multiplicity of providers.

Lipsky and Elmore were among the scholars advocating either a top-down or bottom-up approach for policy

implementation. In this research both top-down and bottom-up approaches were thought to have application for emergency management implementation. What was revealed, though, is that neither separately nor both together are the approaches adequate, and so the network perspective (Schroeder) was found to more aptly reflect a framework for considering emergency management implementation by developing various approaches for managing different activities for private and public actors.

A fundamental objective of this study was to bring empirical work to bear in the discussion of policy implementation. The findings offer an expanded concept of policy implementation in which all of the disparate stakeholders are viewed as providers, including first responders, government agencies, jurisdictions, political office holders, not-for-profit agencies, private businesses, and the public.

This definition recognizes that each aspect of the implementation process is ongoing, and is one in which each stakeholder is connected. Implementation aspects include policy development, emergency preparations, emergency response, emergency recovery, and emergency mitigation. Important policy implications were revealed as a result of this study. The remainder of this section identifies areas

uncovered in this research and discusses recommendations for emergency management policies.

SEMS and Policy Implementation

The research in this study has shown that implementation is an ongoing process; and for complex problems and policies, implementation must necessarily involve the end user at each aspect of the process. In contemporary battles--whether opposition is generated by human beings or from natural forces--equipment and technology are not enough for successful outcomes.

It is because of our complex systems and technology that, more than ever, successful public policy implementation requires effective leadership. Political leadership is required to move legislation forward and unlock resources, including the mobilization of all stakeholders. In this realm--the local context--consideration was given to the commitment and capacity of stakeholders.

Numerous sources contribute to current pre-emergency conditions, often creating environments fraught with opportunities for conflagration. In the case of wildland fire threats, building patterns into vulnerable wildland areas certainly add to the likelihood of a fire. Likewise, limited

access to rural communities hinders evacuation as well as incoming response equipment.

Thus, implementation of emergency management policy is not confined to the traditional definition of emergency personnel. Once again, a network perspective is the method by which answers to the problem may begin to take shape. First, is incumbent upon planning commissioners and land use personnel to carefully weigh development into fragile, high-risk areas. At the same time, if development does occur in these areas, it is important that adequate infrastructure be in place with sustainable ingress, egress and water systems. Reinforced building materials may increase construction costs, but it is up to local officials to insist upon this as a basic condition of doing business in these areas. Studies reveal that fire-resistant roofing and building materials coupled with double-paned windows dramatically reduce fire hazards, as does fire-resistant vegetation and vegetation clearance zones around building perimeters.

Then, these policies must be regularly enforced. Reports demonstrate that where the policies are enforced, fire damage is sharply minimized.

An increasingly important part of the equation for emergency management preparation relates to the question, "How much risk is an area willing to assume?" In years past,

that question was asked to determine the amount and types of resources to be purchased. Increasingly, the question reflects planning choices for building patterns in high-risk, vulnerable areas for potential floods or fires. Is it reasonable to assume that installing one extra lane of roadway is adequate protection? What is the cost to an area for creating response plans that protect homes versus restricting vegetation around building perimeters in high-risk areas?

Behind those questions is the fact that as devastating as modern day emergencies can be, they are still rare. Part of the reason that the images of Katrina, 9/11, and the Thailand Tsunami are so gripping is that they are rare. In the same way that many families have chosen to skimp on insurance they assume will never be used, governments are confronted with similar choices and often come to the same conclusion.

When a governing system that is increasingly complex, overlapping, frequently overextended, and generally underfunded, is added to the environmental obstacles identified above, the problems intensify. Response to the 2003 Southland Fires involved the direct activities of 70 different governmental agencies, many of whose missions (as well as a majority of their activities) do not include emergency

response. Still, during the peak of the fire--or any large scale emergency--these agencies are required to perform at coordinated levels of interaction with professional emergency responders with exceedingly uneven levels of training.

For emergency responders, mutual aid systems ensure participation from commanders and firefighters outside the geographic boundaries of the emergency incidents. For large scale incidents, the likelihood is great that these will include responders from out of state as well from other California counties.

Thus, even though California SEMS requires standardization for some types of equipment, such as fire hydrants, hoses, etc., there is a wide variety of equipment purchased by individual departments depending upon their anticipated needs. For instance, urban departments are apt to purchase and train fire fighters to use equipment to quell blazes at city structures.

Conversely, the needs of rural departments most often emphasize training and operation of equipment for brush fires and apparatus in wildland fires. Further, as discussed in this report, different jurisdictions utilize a variety of types of communications equipment. This is not to imply that some level of uniform training is not needed for California's 62,000 firefighters. One of the recommendations of the

Governor's 2003 Blue Ribbon Fire Commission was to establish minimum training standards and continuing education requirements for firefighters such as those mandated by the Commission on Peace Officer Standards and Training.

A recommendation of this research is to establish minimum training standards and continuing education requirements for firefighters. Another recommendation of this study is that federal, state, and local fire fighting agencies develop similar work-rest patterns so that there will not be such disruptions in the field. Additionally, a study of the use of aircraft cut off times is appropriate given new technology even when flying under ref flag conditions.

Its constitutional powers provide county government with the authority to initiate requests of various departments and jurisdictions to create a collaborative system for emergency response. Another part of a county's authority is established through the availability and dissemination of its resources, especially financial. If financial resources are diminished, as in San Diego, this compromises the county's authority.

However, even in the absence of financial authority, political authority still exists; and it is incumbent upon officials to utilize this authority to establish a unified

emergency response system. This requires political will and political leadership beyond self-serving personal interests.

As such, political leadership must be mustered for successful implementation, and it necessarily must include the support of the majority of stakeholders (Heifetz). As referenced in Chapter 3 of this study, it is not enough to give a directive (Neustadt). Results will not follow if people are simply told what to do, without first backing the objectives behind their identified responsibilities.

This is also where the Director of California's Office of Emergency Management can recommend a number of specific types of preparatory inter-agency drills, table top exercises and meetings. Even though California does not allow for unfunded mandates, the use of best practices abound; and if jurisdictions do not voluntarily comply with training exercises, then withholding emergency reimbursement funds is always a prerogative.

Moreover, it would be helpful for OES to disseminate to the operational areas the latest technological information regarding the most efficient means of notifying citizens of the need for evacuation. Likewise, distribution of information to operational areas about services to include in shelters after a disaster would be useful (such as those offered in San Bernardino) as would information on developing

Joint Information Centers for press and public communications.

The findings of this study also uncovered the need to add technological firms as a natural partner in emergency management implementation. For instance, currently telecommunications firms regularly place sales calls to county emergency services offices requesting orders for the latest equipment. OES could initiate steps to coordinate both the purchasing power and types of equipment when agencies replacement purchases.

Just as training is necessary for first responders to learn how to perform their jobs, so, too, is public education required to teach individuals about the pivotal roles they can play in the preparation, mitigation, and response efforts involving emergency management. This is where political leadership is necessary to get public support (Heifetz). Political leadership is also required to marshal the resources available at the county level and to coordinate with other stakeholders. Neustadt described this process for the presidency as the power to persuade. Renshon terms the operationalization of this process as mobilization, orchestration, and consolidation. The roles of technical and supportive organizational leadership are to ensure the

delivery of a top quality product, in this instance emergency management policy (Katz).

Information revealed in this research is of significance to state and local jurisdictions, as well as to citizens receiving emergency services.

Moreover, the understanding of emergency management implementation offers new insights for developing pre-planning and prevention programs. These are expected to benefit local and state governments as they prepare to comply with FEMA directives to adhere to the guidelines of NIMS, which is based upon California's SEMS.

Now that NIMS has been enacted, it is particularly important that mutual aid compacts are reviewed--especially those that cross state and country borders.

Long seen as the back bone of disaster response protocol, financial reimbursement delays are threatening this important emergency response tactic. A deadline should be established by which FEMA must reimburse the states, and then a second deadline by which the states, must pass on the funds to local jurisdictions involved in emergency response. Similarly problematic are routine resource shortages in southern California during firestorm seasons when local resources are drawn down to fight fires that regularly break out earlier in northern parts of the state. These issues need

attention in order to maintain the confidence and support of emergency personnel asked to respond to the blazes.

Finally, information revealed in this study will be of potential interest to political scientists studying policy implementation, and hopefully will contribute to better understanding of the process. It is anticipated the information presented will be useful in developing future scholarship to expand the understanding of policy implementation.

Conclusion

Battles are unpredictable. Whether the fight is with Mother Nature--when battling wildland fires and responding to hurricanes--or when the enemy wears a uniform, responses rarely follow plans ascribed for them. Too many variables exist to predict outcomes. The question for this study, though, is whether the SEMS emergency management system provides a structure for emergency response that is effective for battling contemporary disasters.

The research conducted as part of this dissertation and the data gathered in the case studies indicate that the organizing principles of SEMS provide the structure for creating a successful emergency management program that incorporates preparation, response, recovery, and mitigation.

Nevertheless, flexibility and adaptability are inherent components of the SEMS program that are open to interpretation by its various users. The SEMS program's flexibility allowing for adaptation to a number of different emergency situations increases its value. Likewise, the SEMS precept that permits local officials to adapt its guidelines to local governing structures and conditions ensures wider application of the policy.

Nonetheless, like other programs before it, SEMS, too, suffers from the double-edged sword of flexibility versus standardization. Uneven results were observed in the two case studies in this dissertation. In San Bernardino county, successful implementation of SEMS was achieved largely due to a culture of inter-agency collaboration and the willingness of local actors to invest in the problem by providing political leadership and financial resources. On the other hand, in San Diego county several financial disincentives existed, which could not be overcome due to the lack of political leadership. Given the framework of SEMS and its flexibility for local approach to implementation, wide fluctuations may always exist, largely resulting from the nature of local political leadership.

Still, SEMS provides a groundbreaking framework for a necessary set of conditions that make it possible to lead to

successful implementation. This study concludes that additional conditions will be required for sufficient success. The structure, the principles, and the support are available to local governments that demonstrate the leadership to organize along these precepts.

Appendix A
Glossary of Terms

Area Command. An organization established to: 1) oversee the management of multiple incidents that are each being handled by an incident management team (IMT) organization or 2) to oversee the management of a very large incident that has multiple IMTs assigned to it. Area command has the responsibility to set overall strategy and priorities, allocate critical resources based on priorities, ensure that incidents are properly managed, and that objectives are met and strategies followed.

Brush. A collective term that refers to stands of vegetation consisting of shrubby, woody plants, and low growing trees.

Brush Fire. A fire burning in vegetation mainly consisting of shrubs and brush.

Buffer Zones. An area of reduced vegetation separating wildland from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture or recreation.

Burning Period. The part of each 24-hour period in which a fire most rapidly spreads, generally from 10:00 A.M. until sunset.

CALMAC California Multi-Agency Command. The information coordination center in Sacramento charged with gathering timely information from regions, cooperating agencies, the media, the OES Director and relevant government leaders as well as the public.

CDF California Division of Forestry and Fire Protection.

Chief Executive. Individual authorized by law to act for the governing body of a political subdivision.

Containment. A fire is contained when it is surrounded on all sides by some kind of boundary but is still burning and has the potential to jump a boundary line.

Controlled. A fire is controlled when there is no further threat of it jumping a containment line. While crews continue to do mop-up work within the fire lines, the firefight is over.

Defensible Space. Creating a fire safe landscape for at least 30 feet around homes, and out to 100 feet or more in some areas, to reduce wildfire spread and burn through the structures. Required by California law, defensible spaces help protect building and provide firefighters with a safety zone for battling flames.

Degrees of emergency situations.

(a) State of emergency. Proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, drought, sudden and severe energy shortage, plant or animal infestation or disease, the Governor's warning of an earthquake or volcanic prediction, or an earthquake. The emergency conditions due to their magnitude are likely beyond the control of the services, personnel, and equipment of any single local jurisdiction and require the combined forces of a mutual aid region/s.

(b) Local emergency. Proclaimed existence of conditions of disaster or extreme peril to the safety of persons and property within the boundaries of the local jurisdiction.

Dozer. Any tracked vehicle with a front-mounted blade used for exposing soil.

Draw Down Level. The level where successfully extinguishing a fire with initial attack force is compromised.

Drop Zone: Target area for air tankers, heli-tankers, and cargo drops.

Engine. Any ground vehicle with specified levels of pumping, water, and hose capacity.

Engine Crew. Firefighters assigned to an engine.

Extreme Fire Behavior. Extreme implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning (fire advancing from the top of trees or shrubs) and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behaves erratically, sometimes dangerously.

Federal National Team. A Type 1 National Incident Management Team coordinated by the National Wildfire Coordinating Groups. Team members may be from various agencies. The California Wildfire Coordinating Group sponsors five of the sixteen national teams.

Federal Regional Team. A Type 2 Incident Management Team maintained by the U.S. Forest Service in the Pacific Southwest Region 5 (California and Pacific Islands). Team members may be from various agencies.

Federal Responsibility Area (FRA). The primary financial responsibility for preventing and suppressing fires is that of the Federal Government. Protection activities are performed by the Department of Agriculture, Forest Service, Department of Interior, Bureau of Land Management, National Parks Service, U.S. Fish and Wildlife Service, and Bureau of Indian Affairs.

FIRESCOPE. Firefighting Resources of California Organized for Potential Emergencies. A multi-agency coordination system designed to improve the capabilities of California's wild land fire protection agencies. Its purpose is to provide more efficient resource allocation and utilization, particularly in large or multiple fire situations during critical burning conditions.

Firestorm or Fire Siege. Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface indrafts, near and beyond the perimeter, and sometimes by tornado-like whirls.

First Responders. First responder community consists of local police, firefighters, and emergency medical professionals.

Foehn Winds. See Santa Ana winds.

Fuels. Combustible materials including vegetation such as grass, leaves, ground litter, plants, shrubs, and trees that feed a fire.

GIS Geographic Information System.

Governing Body. The legislative body, trustees, or directors of a political subdivision.

Incident Command System (ICS). A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries.

Incident Commander. An ICS position responsible for overall management of the incidents and reports to the Agency Administrator for the agency having incident jurisdiction.

Incident Management Team (IMT). Sometimes referred to as Incident Command Team consists of the Incident Commander as well as appropriate general and command staff personnel assigned to an incident.

Joint Information Center (JIC). An interagency information center responsible for researching, coordinating and disseminating information to the public and media. Formed through the MAST effort.

LRA Local Responsibility Area.

MACS Multi-Agency Coordination System. Combination of facilities, equipment, personnel, procedures and communications as part of a common system to assist agency resources and support emergency operations.

MAFFS Modular Airborne Firefighting System. Manufactured unit of five interconnecting tanks, a control pallet, a nozzle pallet, with a capacity 3,000 gallons. The unit is designed to be readily mounted inside an unmodified C-130 Hercules cargo aircraft for use in dropping retardant on wildland fires.

MAST Mountain Area Safety Task Force. Formed in San Bernardino county to prepare and respond to the 2003 wildland fires based upon interagency and cross-jurisdictional partnerships.

MIRPS Multi-Agency Incident Resource Processing System. Used to deploy and track resources during incidents involving multiple agencies.

Mutual Aid Agreement. Made between California agencies and jurisdictions of the state to assist one another upon request by furnishing personnel and equipment.

Mutual Aid Region. A subdivision of the State Office of Emergency Services, established to facilitate the mutual aid and other emergency operations within an area of the state consisting of two or more county operational areas.

NEMA National Emergency Management Association.

NIFC National Interagency Fire Center located in Boise, Idaho.

NIMS National Incident Management System currently mandated by FEMA on a national basis. The system is to be utilized by state and local governments in organizing and responding to emergencies. NIMS' guidelines are being phased in over a three-year period and are based upon the principles of California's SEMS.

OES The California Governor's Office of Emergency Services.

Operational Area. An intermediate level of the State Emergency Services organization, consisting of a county and all the area's political subdivisions. Each county is designated as an operational area. The governing bodies of each county and the political subdivisions may organize their operational area. An operational area may be used by the county to coordinate emergency activities and to serve as a link in communications during a state of emergency or a local emergency.

Political Subdivision. Includes any city, city and county, county, district, or other local governmental agency or public agency authorized by law.

Preparedness Levels. A national system of preparedness for incidents ranging 1-5.

Level 1: Few or no fires under 100 acres. Minimal or no commitment of fire resources. Low to moderate fire danger. Agencies above draw down levels.

Level 2: Numerous fires under 100 acres. Local resource commitment for initial attack. Moderate fire danger. Agencies above draw down levels and minimal requests for resources outside local area.

Level 3: High potential for fires over 100 acres to occur, with several 0-99 acres fires active. Fire danger moderate to very high. Mobilization of resources within the region and minimal requests outside of region. Agencies above or having difficulty maintaining draw down levels.

Level 4: Fires over 100 acres are common. Fire danger is high to very high. Resource mobilization is coming from outside the region. Agencies at minimum draw down levels.

Level 5: CALMAC is fully activated. Multiple large fires are common in the north or south. Fire danger is very high to extreme. Resources are being mobilized through the National Coordination Center.

Resources. Include personnel, equipment, services and supplies available or potentially available for assignment to incidents. Additionally, the term can refer to the natural resources of an area such as timber, watershed values, and wildlife habitat.

SEMS Standardized Emergency Management System. The Standardized Emergency Management System includes the following systems as a framework for responding to emergencies involving multiple jurisdictions or multiple agency responses:

1. The Incident Command Systems adapted from the systems originally developed by the FIRESCOPE Program, including those currently in use by state agencies;

2. The multi-agency coordination system as developed by the FIRESCOPE Program;

3. The mutual aid agreement, as defined in Section 8561 of California's Emergency Services Act, Chapter 7 of Division 1 of Title 2 of the Government Code and the Natural Disaster Assistance Act, Chapter 7.5 of Division 1 of Title 2 of the Government Code;

4. The Operational Area concept, as defined in Section 8559 of the Government Code.

Effective December 1996 all state agencies were required to use SEMS to coordinate multiple jurisdiction or multiple agency emergency and disaster operations. To be eligible for funding of response-related disaster costs, local agencies are required to use SEMS for multiple jurisdiction and multiple agency operations. Local agencies are eligible for repair, renovation or any other non-personnel costs resulting from an emergency.

Santa Ana Winds. A type of foehn wind. A foehn wind is a warm, dry general wind that flows down into the valleys as stable, high pressure air is forced across and then down the lee side slopes of a mountain range. The descending air is warmed and dried due to compression causing critical fire weather conditions. Locally called by various names such as Santa Ana winds.

South Ops. The multi-agency geographic area coordinating center for southern California. Based in Riverside, it is staffed by CDF, State OES, and federal fire agencies.

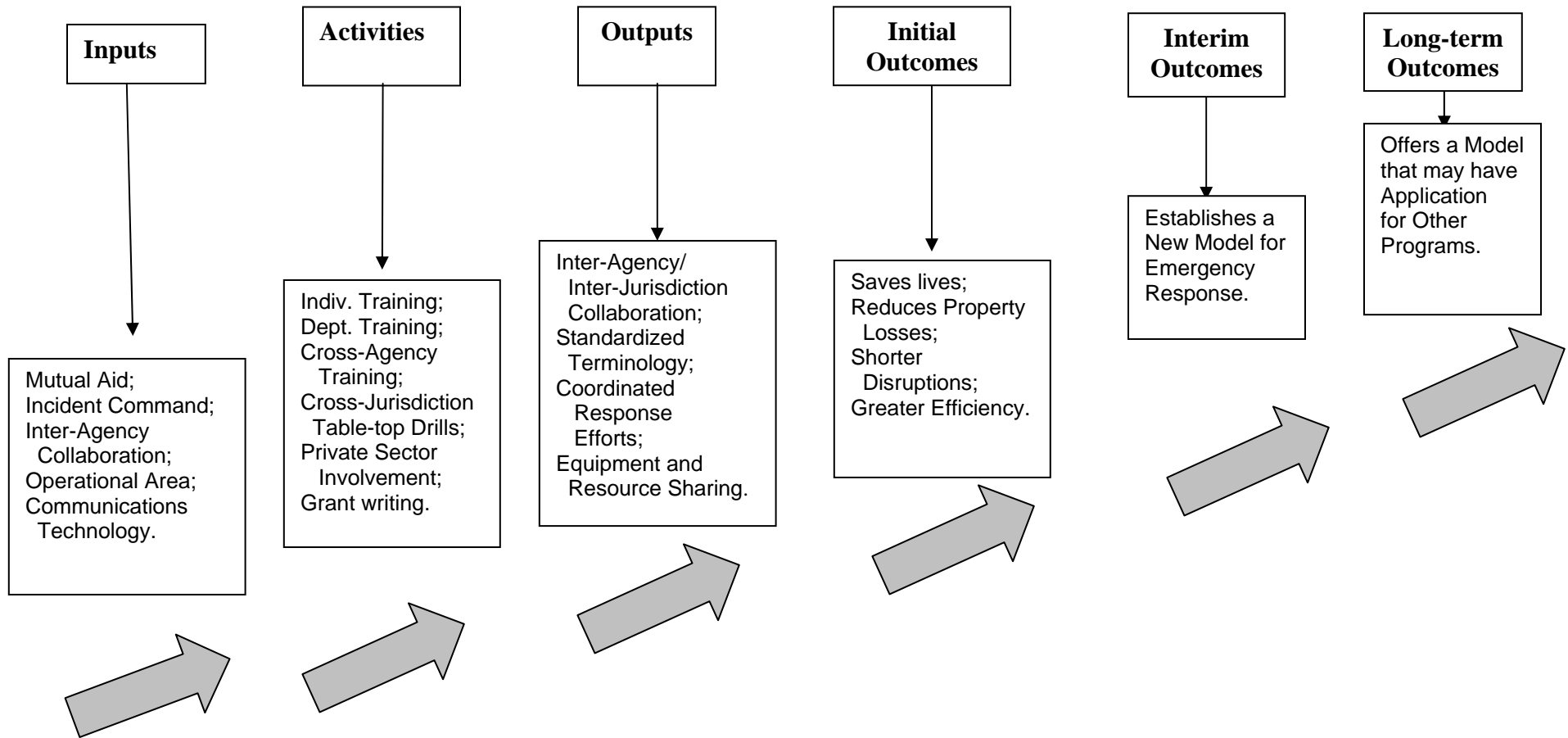
SRA State Responsibility Area classified by CDF in which the primary financial responsibility for preventing and suppressing fires is that of the state. CDF has SRA responsibility for over 31 million acres of California's privately owned wildlands.

State Agency. Any department, division, independent establishment, or agency of the executive branch of the state government.

Unified Command. An ICS, unified command is a unified team effort which allows all agencies with jurisdictional responsibility for the incident to manage it by establishing a common set of incident objectives and strategies.

Wildland Urban Interface (WUI). The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

Appendix B:
A Conceptual Chain
of the
Standardized Emergency Management System





Governor's
Blue Ribbon Fire Commission

June 30, 2005

Governor's Blue Ribbon Fire Commission

MEMORANDUM

TO: Emergency Management Officials

FROM: Senator William Campbell (Retired) – Chair

RE: Doctoral Dissertation Survey on Emergency Management

Senator William Campbell, (Ret.)
Commission Chairman

COMMISSION MEMBERS:

U.S. Senator Dianne Feinstein
U.S. Representative Susan Davis
U.S. Representative Jerry Lewis
Senator Deirdre Alpert
Senator Jim Brulte
Senator Dennis Hollingsworth
Senator Nell Soto
Assemblymember Robert Dutton
Assemblymember Christine Kehoe
Assemblymember Jay La Suer
Director Larry Hamilton
Deputy Director Rick Martinez
Director Andrea Tuttle
Director Jerry Williams
Supervisor Yvonne Brathwaite Burke
Supervisor Greg Cox
Supervisor Dennis Hansberger
Supervisor Judy Mikels
Supervisor James Venable
Mayor Dick Murphy
Mayor Judith Valles
Chief Bill Bamatre
Chief Jeff Bowman
Chief Bill McCammon
Chief Ed McOrmond
Chief Ron Coleman
Chief P. Michael Freeman
Chief Chip Prather
Chief Kim Zagaris
David Fukutomi, FCO, FEMA
Jeff Sedivec, President, CSFA
Peter Verga, Asst. Sec. of Defense
Bob Wolf, President, CPF

COMMISSION STAFF:

JERRY M. HALEVA, CHIEF COUNSEL
R. BLAIR SPRINGER, COUNSEL
ROBERT GERBER, EXECUTIVE SECRETARY
DENISE BANKER, EXECUTIVE ASSISTANT

I am writing to introduce Ms. Karen Smith, a PhD candidate from The Graduate Center of City University of New York (CUNY), who is completing her doctoral dissertation in Political Science and Public Policy, and to request your assistance in completing a survey relative to emergency management and the *Standardized Emergency Management System* (SEMS).

Ms. Smith was my district chief-of-staff during my years as Chair of the Joint Committee on Fire, Police, Emergency & Disaster Services, and was integrally involved in my activities and legislative endeavors to promote and support California's emergency response, recovery, preparedness and mitigation programs and capabilities.

I am proud of Karen's continued participation in this area and her efforts to expand the academic community's knowledge of this critical public policy area. I believe it is important to promote and support an understanding, appreciation, and professional recognition for this important public safety arena--and this study represents a strong effort in that direction. I am excited and look forward to reviewing her doctoral research on emergency management and SEMS.

As such, I would very much appreciate your participation in completing the attached academic survey on this subject matter. I recognize your time is valuable, but hope you can complete the survey, as I firmly believe it is part of all of our interests to continue to enhance our local, state and federal efforts to improve our emergency response and management functions.

Thank you for your participation.



COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

July 21, 2005

Ms. Karen Smith
43 Regatta Way
Dana Point, CA 92629

Dear Ms. Smith:

CALIFORNIA STANDARDIZED EMERGENCY MANAGEMENT SYSTEM SURVEY

Per Senator William Campbell's request, dated June 30, 2005, enclosed is the completed academic survey for California's Standardized Emergency Management System.

If I may be of any further assistance, please feel free to contact me at (323) 881-2401.

Very truly yours,

P. MICHAEL FREEMAN

PMF:hn

Enclosure

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS
ARTESIA
AZUSA
BALDWIN PARK
BELL
BELL GARDENS
BELLFLOWER

BRADBURY
CALABASAS
CARSON
CERRITOS
CLAREMONT
COMMERCE
COVINA

CUDAHY
DIAMOND BAR
DUARTE
EL MONTE
GARDENA
GLENORA
HAWAIIAN GARDENS

HAWTHORNE
HIDDEN HILLS
HUNTINGTON PARK
INDUSTRY
INGLEWOOD
IRWINDALE
LA CANADA-FLINTRIDGE
LA HABRA

LA MIRADA
LA PUENTE
LAKEWOOD
LANCASTER
LAWDALE
LOMITA
LYNWOOD

MALIBU
MAYWOOD
NORWALK
PALMDALE
PALOS VERDES ESTATES
PARAMOUNT
PICO RIVERA

POMONA
RANCHO PALOS VERDES
ROLLING HILLS
ROLLING HILLS ESTATES
ROSEMEAD
SAN DIMAS
SANTA CLARITA

SIGNAL HILL
SOUTH EL MONTE
SOUTH GATE
TEMPLE CITY
WALNUT
WEST HOLLYWOOD
WESTLAKE VILLAGE
WHITTIER

From Michael Freeman--LA
California Standardized Emergency Management System, SEMS, took effect in
1996 to standardize emergency responses involving more than one agency or
government.

PRE-EMERGENCIES

1. In your official capacity, do you have a role in planning for local emergency situations?

Yes.

2. What percent of your work time is spent on emergency management functions? Please estimate the hours per week and break down the various functions into percentages of time.

Twenty-Five percent, approximately 10 hours per week.

Functions: Operations (6.25 percent); Planning (6.25 percent); Logistics (6.25 Percent); and Finance (6.25 percent)

3. How are emergency planning activities coordinated among different agencies at the local level, regional level, state level, federal level, and inter-governmental level?

Through unified command, where representatives from each agency play a vital role in the decision-making process, while maintaining their autonomy.

4. How effective would you categorize the coordination of emergency planning activities among agencies and various levels of government?

Over the course of the last 100 years, the County of Los Angeles has experienced, approximately every three years, a catastrophic event requiring inter-agency cooperation and coordination among various levels of government. As a result of these events, positive inter-agency collaboration has resulted in effective planning.

- 5. Are you aware of any opposition to SEMS either from employees of government agencies or from members of emergency services' membership organizations? If yes what do you believe to be the reason(s) for the opposition?**

No, SEMS is consistent with the Incident Command System (ICS) that has been utilized by the fire service in the state for many years; more recently, it has been used by a number of law enforcement agencies as well. SEMS provides for organizational coordination and communication. It is "all risk", making it adaptable to various types of emergency incidents. SEMS is not intended to address mitigation measures.

- 6. How effective has SEMS been in reaching its stated objectives to standardized statewide emergency response efforts involving more than one agency or government?**

As stated in #5, SEMS is consistent with ICS and our experience indicates it has met its stated objectives.

- 7. What aspects of SEMS do you consider the most relevant for past successes?**

The most relevant successes are development of common terminology, incident management organization, and most importantly, unified command.

- 8. What do you consider the biggest challenges for SEMS' effectiveness in the next 3-5 years?**

Compatibility, adaptability, and integration of the National Incident Management System (NIMS). Beginning in January 2006, the California fire service will have to fully integrate the Incident Command System (ICS), SEMS, and the NIMS system.

- 9. How has participation in SEMS affected staffing requirements for your agency?**

No.

SPECIFIC FEATURES

Mutual Aid

10. What has been the role of the OES Administrative Regions in coordinating mutual aid?

- Update the Emergency Resource Directory (ERD) on a yearly basis
- Poll the Region for available resources on a weekly basis
- Poll the Region for available resources in the event of an incident
- Assign resources to the incident
- Track and monitor assigned resources
- Record all pertinent information
- Submit reports to OES Sacramento regarding resource status
- Ensure proper documentation has been completed

11. How is the reimbursement of mutual aid costs managed? Of particular interest are factors relating to eligible costs for reimbursement, timeliness of reimbursement and processes for local jurisdictions claiming reimbursement.

The reimbursement of mutual aid costs is managed by the Department's Financial Management Division. The factors utilized to determine eligible costs for reimbursement, timelines of reimbursement, and processes for our Department to submit a claim for reimbursement varies depending on the nature of the agreement among the respective agencies.

The Department has several agreements with various agencies including:

Federal – Angeles National Forest, United States Forest Service, Bureau of Land Management, and Bureau of Indian Affairs

State – California Department of Forestry (within and outside our jurisdictional boundaries)

Local – Master Mutual Aid and Auto Aid Agreements

Incident Command System

12. What factors determine the selection of an incident commander?

Position (rank); qualifications, and experience. If more than one agency or jurisdiction has a vested interest/responsibility, unified command (more than one I.C.) may be formed.

13. How are cases of ambiguity resolved for identifying the incident commander?

Generally this is not an issue, but unified command is an option.

FUNDING

14. Are current funding levels compatible with reaching SEMS' program objectives? Please provide a brief explanation of your answer.

Yes.

15. Are there major constraints to program objectives due to funding considerations? Please provide a brief explanation of your answer.

No.

INDIVIDUAL LEARNING AND TRAINING

16. How is the accumulated knowledge of individual first responders incorporated into the formal procedures or policies of SEMS?

The State of California has an established certification and qualification system for ICS.

17. What methods are available to individual first responders to recommend changes as a result of their experience in a specific disaster?

Post-incident analysis or communication through the employees' chain-of-command

18. How often has SEMS been revised as a result of recommendations from first responders?

Unknown.

19. What do you consider the personal value of SEMS to individual first responders?

SEMS will enhance coordination and communication amongst first responders.

20. One of the key aspects of SEMS is inter-agency coordination. How often does training occur?

On a continuous basis.

21. Which private sector organization(s) are involved in pre-emergency planning sessions?

The Department has not utilized private-sector organizations for pre-emergency planning sessions.

22. What incentives, if any, are offered to private firms for participation in planning sessions?

Potential grant revenue.

23. How are proposed changes in equipment or procedures recommended?

Changes are recommended through the Department's Equipment Development Committee and Manual Revisions Committee.

24. How have volunteers been utilized during the

- (a) Planning phase**
- (b) Emergency response**

Volunteers such as the American Red Cross, animal shelters, and various local and community groups have been utilized in the planning and emergency response phases to assist with evacuation and shelter efforts.

25. After an emergency, what is the process for evaluation response effectiveness?

Post-incident analysis.

COMMUNICATIONS

26. What communications systems are utilized by your agency for emergency response actions?

- Computer Aided Dispatch (CAD)
- Mobile Data Terminals
- Radio Communication via VHF and UHF
- Paging radios for Battalion Chiefs
- Voice pagers for Executive Staff
- Alpha numeric pagers for all Chief Officers
- Cellular phones

27. What are the differences in communication systems utilized by different

- (a) jurisdictions**
- (b) disciplines**
- (c) agencies**

- Multiple CAD vendors
- Different frequencies
- Multiple Mobile Data systems
- Wide band versus narrow band frequencies
- Inadequate band width on the radios
- Analog versus digital
- Trunked versus conventional radio systems

28. What are the biggest challenges with current communications technology?

Challenges include funding, interoperability, and the narrow banding of frequencies.

30. How do you anticipate these obstacles will be resolved?

Updating voice and data communication equipment and interoperability are being addressed in the Los Angeles area through a consultant, coordination with public safety agencies, commitment of budget funds, and researching other revenue sources.

COUNTY FIRE DEPARTMENT



OFFICE OF EMERGENCY SERVICES
1743 Miro Way, Rialto, CA 92376 (909) 356-3998
FAX (909) 356-3965

PETER R. HILLS
Fire Chief
County Fire Warden

July 29, 2005

Ms. Karen Smith
43 Regatta Way
Dana Point, CA 92629

SUBJECT: CALIFORNIA STANDARDIZED EMERGENCY MANAGEMENT SYSTEM SURVEY

Dear Ms. Smith,

As the lead agency in San Bernardino County, the San Bernardino County Fire Department Office of Emergency Services is pleased to participate in your emergency management survey. Please find enclosed the completed Governor's Blue Ribbon Fire Commission Survey. We have addressed all survey questions from an Emergency Management Operational Area perspective to the best of our ability, given the constraints of the survey.

We hope our survey responses are helpful to your assessment of emergency management and the Standardized Emergency Management System. We look forward to the results of this survey. Please feel free to contact us should you require additional information.

Sincerely,

Denise L. Benson

DENISE L. BENSON, Division Manager
San Bernardino County Fire Department
Office of Emergency Services

Attachment

DLB:rm:kw

cc: Dennis Hansberger, 3rd District Supervisor, San Bernardino County Board of Supervisors
Peter R. Hills, Fire Chief/Fire Warden, San Bernardino County Fire Department

MARK UFFER
County Administrative Officer

NORMAN KANOLD
Assistant County Administrator
Economic Development and
Public Services Group

Board of Supervisors

BILL POSTMUS First District DENNIS HANSBERGER.....Third District
PAUL BIANE Second District GARY C. OVITT.....Fourth District
JOSIE GONZALES Fifth District

CALIFORNIA STANDARDIZED EMERGENCY MANAGEMENT SYSTEM SURVEY

Pre-Emergencies

- 1. In your official capacity, do you have a role in planning for local emergency situations? Yes.**
- 2. What percent of your work time is spent on emergency management functions? Please estimate the hours per week and break down the various functions into percentages of time.** 100% San Bernardino County Fire Department, Office of Emergency Services, Division Manager and the staff of the office.
- 3. How are emergency planning activities coordinated among different agencies at the local level, regional level, state level, federal level, and inter-governmental level?** Regular meetings are scheduled and held with stakeholders from response agencies, cities and towns, and special districts. San Bernardino County Office of Emergency Services has established several multi-agency groups to coordinate Emergency Management activities. Some examples are the Operational Area Coordinating Council (representing the 24 cities and towns and the county) Mountain Area Safety Taskforce (MAST), and Flood Area Safety Taskforce (FAST), Responders Organized for Potential Emergencies (ROPE).
- 4. How effective would you categorize the coordination of emergency planning activities among agencies and various levels of government?** Very effective, the efforts of San Bernardino County have been recognized statewide for MAST, FAST and ROPE development.
- 5. Are you aware of any opposition to SEMS either from employees of government agencies or from members of emergency services' organizations? ---If yes, what do you believe to be the reason(s) for the opposition?** Yes, the Standardized Emergency Management System (SEMS), places a great deal of monetary burden on local agencies, as the SEMS mandate does not include financial support.
- 6. Throughout California, local conditions can create potential for different types of disasters (i.e., urban areas vs. urban/ wild land intermix, etc.). Due to variations in risks, local jurisdictions may develop distinct mitigation programs. How are statewide standardization objectives compatibles with the variations in local mitigation approaches?** FEMA through the Disaster Mitigation Act 2000 and the state of California now require all jurisdictions to produce a Hazard Mitigation Plan (HMP) to remain eligible for the mitigation portion of FEMA disaster relief funding. The County of San Bernardino has produced a multi-jurisdictional HMP that includes 57 participants (all cities and towns and many special districts in the County).

7. **How effective has SEMS been in reaching its stated objectives to standardize statewide emergency response efforts involving more than one agency of government?** Very effective. SEMS provides coordination between Field, Local, Operational Area, Region, and State levels as an integral part of emergency response. Included are different disciplines (public, private, non-profit and faith based organizations).
8. **What aspects of SEMS do you consider the most relevant for past successes?** The Incident Command System (ICS), Multi-Agency Coordination System (MACS), and the Operational Area concept.
9. **What do you consider the biggest challenges for SEMS effectiveness in the next 3-5 years?** Continued maintenance and refinement of SEMS at the local level in the absence of funding.
10. **How has participation in SEMS affected staffing requirements of your agency?** SEMS has required local jurisdictions to assume training costs to implement SEMS. Failure to implement SEMS could result in local jurisdictions becoming ineligible for response related personnel costs.

Specific Features

Mutual Aid

11. **What has been the role of OES Administrative Regions in coordinating mutual aid?** State OES coordinates all mutual aid and mission resource requests from the Operational Area.
12. **How is the reimbursement of mutual aid costs managed? Of particular interest are factors relating to eligible costs for reimbursement, timeliness of reimbursement and processes for local jurisdictions claiming reimbursement.** This question is too broad and time-consuming to address in this questionnaire.

Incident Command System

13. **What factors determine the selection of an incident commander?** In an Emergency Operations Center the term is EOC Director. The scope, size, jurisdictional location and incident type and location determine the EOC Director.
14. **How are cases of ambiguity resolved for identifying the incident commander?**
N/A in an EOC setting.

Funding

15. **Are current funding levels compatible with reaching SEMS program objectives? Please provide a brief explanation of your answer.** There has never been funding from State OES for SEMS development and implementation at the Field, Local and OA levels. This causes extreme hardship and incomplete implementation of the SEMS system.

Pre-Emergencies

1. *In your official capacity, do you have a role in planning for local emergency situations?*

Yes, as a member of the San Diego County Board of Supervisors I am responsible for evaluating the needs of our emergency management and law enforcement agencies and appropriating the required resources.

2. *What percent of your work time is spent on emergency management functions? Please estimate the hours per week and break down the various functions into percentages of time?*

The day-to-day administrative functions of the County of San Diego are carried out by the Chief Administrative Officer. Although collectively the five members of the Board of Supervisors hold both the legislative and executive authority within the County we exercise our executive functions primarily through delegation to the Chief Administrative Officer. Therefore, the only role I have as a member of the Board of Supervisors is to establish the policies that guide our response to emergencies, allocating the resources they need to perform their mission and monitoring the level of service they provide to the community.

3. *How are emergency planning activities coordinated among different agencies at the local level, regional level, state level, and inter-governmental level?*

Local/Intergovernmental: Activities are planned by the Unified San Diego County Emergency Services Organization, a Joint Powers Authority established in 1961. This includes the County and all 18 incorporated cities (San Diego Operational Area). San Diego County's Office of Emergency Services is staff to this unified organization. The governing body of this organization is the Unified Disaster Council (UDC) whose membership is comprised of one representative from each incorporated city and from the County. There are agencies who are not part of the Unified Disaster Council (such as the Fire Protection Districts), and they also participate in planning, training and exercises along side of UDC members.

Regional: The State Office of Emergency Services has 6 mutual aid regions and 3 administrative regions in California. Each administrative region assigns representatives to the counties within the mutual aid region. State agency representatives may also be assigned from agencies such as the California Department of Forestry (CDF), Highway Patrol, CalTrans, the National Guard and other state agencies to work with the County and Cities to coordinate emergency planning activities. The State OES representative to the San Diego Operational Area works closely with us to receive and disseminate planning information. Quarterly meetings are held by State OES, Southern Region, with the Counties and Cities to discuss regional issues and planning activities.

Individual Learning and Training

- 16. Are there major constraints to program objectives due to funding considerations? Please provide a brief explanation of your answer.** Yes. The County Board of Supervisors and Fire Department provide the primary funding for OES in the San Bernardino County Operational Area, which is an undo burden on local government.
- 17. How is the accumulated knowledge of individual first responders incorporated into the formal procedures or policies of SEMS?** Through the State OES SEMS Advisory Board and Technical Committee.
- 18. What methods are available to individual first responders to recommend changes as a result of their experiences in a specific disaster?** The SEMS Technical Committee input.
- 19. How often has SEMS been revised as a result of recommendations from first responders?** Unsure. Please refer question to State OES.
- 20. What do you consider the personal value of SEMS to individual first responders?** SEMS provides a vehicle to coordinated field activities with the EOC.
- 21. One key aspect of SEMS is inter-agency coordination. How often does training occur?**
- Between agencies
 - Between jurisdictions
 - With private firms
- Multiple Operational Area exercises are held annually that involve local jurisdictions, public response agencies and private firms (including non-profit).
- 22. Which private sector organization(s) are involved in pre-emergency planning sessions?** The American Red Cross (ARC), American Medical Response (AMR), Private Sector Terrorism Early Warning Group (PSTRG), utilities and others.
- 23. What incentives, if any, are offered to private firms for participation in planning sessions?** Inclusion in pre-planning, partnering with the public sector etc.
- 24. How are proposed changes in equipment or procedures recommended?** Through various channels and mechanisms.
- 25. How have volunteers been utilized during the**
- Planning phase:** American Red Cross (ARC) attendance and Volunteer Organizations Active in Disaster (VOAD) attendance at planning meetings.
 - Emergency response:** American Red Cross shelter options and Volunteer Organizations Active in Disaster.
- 26. After an emergency, what is the process for evaluating response effectiveness?**

Under SEMS, jurisdictions must submit an after-action report within 120 days to State OES

Communications

- 27. What communications systems are utilized by your agency for emergency response actions?** 800 MHz Radio, 900 MHz pagers, cell phones, satellite phones, Emergency Communications Services (ECS), etc.
- 28. What are the differences in communication systems utilized by different**
- a. Jurisdictions**
 - b. Disciplines**
 - c. Agencies**
- No common radio system exists that allows responders to communicate across the board.
- 29. What are the biggest challenges with current communications technology?**
No standardized mode of communications.
- 30. How do you anticipate these obstacles will be resolved?** Many ways i.e., SEMS and NIMS integration and greater emphasis on continued multi-agency coordination.



GREG COX
SUPERVISOR, FIRST DISTRICT
San Diego County Board of Supervisors

July 21, 2005

Professor Karen Smith
43 Regatta Way
Dana Point, CA 92629

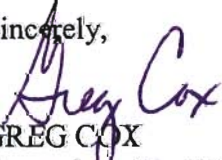
Dear Professor Smith:

Thank you for choosing to include me in your survey on emergency management. I am happy to be of assistance to you as you prepare your Doctoral Dissertation. I am hopeful that by participating in your research I will be able to play a small role in your efforts to find ways to enhance our local, State, and Federal response to emergencies.

I have prepared detailed responses to your questions with the assistance of both my staff and staff from the San Diego County Office of Emergency Services. If you have any additional questions please feel free to contact me by calling (619) 531-5511.

Once again, thank you for allowing me to participate in your research and I wish you the best of luck in all of your future endeavors.

Sincerely,


GREG COX
Supervisor, First District

Attachment

Pre-Emergencies

1. *In your official capacity, do you have a role in planning for local emergency situations?*

Yes, as a member of the San Diego County Board of Supervisors I am responsible for evaluating the needs of our emergency management and law enforcement agencies and appropriating the required resources.

2. *What percent of your work time is spent on emergency management functions? Please estimate the hours per week and break down the various functions into percentages of time?*

The day-to-day administrative functions of the County of San Diego are carried out by the Chief Administrative Officer. Although collectively the five members of the Board of Supervisors hold both the legislative and executive authority within the County we exercise our executive functions primarily through delegation to the Chief Administrative Officer. Therefore, the only role I have as a member of the Board of Supervisors is to establish the policies that guide our response to emergencies, allocating the resources they need to perform their mission and monitoring the level of service they provide to the community.

3. *How are emergency planning activities coordinated among different agencies at the local level, regional level, state level, and inter-governmental level?*

Local/Intergovernmental: Activities are planned by the Unified San Diego County Emergency Services Organization, a Joint Powers Authority established in 1961. This includes the County and all 18 incorporated cities (San Diego Operational Area). San Diego County's Office of Emergency Services is staff to this unified organization. The governing body of this organization is the Unified Disaster Council (UDC) whose membership is comprised of one representative from each incorporated city and from the County. There are agencies who are not part of the Unified Disaster Council (such as the Fire Protection Districts), and they also participate in planning, training and exercises along side of UDC members.

Regional: The State Office of Emergency Services has 6 mutual aid regions and 3 administrative regions in California. Each administrative region assigns representatives to the counties within the mutual aid region. State agency representatives may also be assigned from agencies such as the California Department of Forestry (CDF), Highway Patrol, CalTrans, the National Guard and other state agencies to work with the County and Cities to coordinate emergency planning activities. The State OES representative to the San Diego Operational Area works closely with us to receive and disseminate planning information. Quarterly meetings are held by State OES, Southern Region, with the Counties and Cities to discuss regional issues and planning activities.

Federal: Federal agencies often participate in the regional planning and exercises. They were an important participant to the May 2005 Functional Exercise. Federal agencies work with local jurisdictions to plan and implement strategies that benefit the San Diego region. Federal agencies will be participating in the coming Full Scale Exercise in November 2005.

4. *How effective would you categorize the coordination of emergency planning activities among agencies and various levels of government?*

Emergency planning is well coordinated and very effective within the San Diego Operational Area. Local governments, key State and Federal agencies work together to ensure all emergency plans are integrated and designed to work in concert with one another.

5. *Are you aware of any opposition to SEMS either from employees of government agencies or from members of emergency services' membership organizations? If yes, what do you believe to be the reason(s) for the opposition?*

We are not aware of any opposition to SEMS in San Diego County. San Diego has had a structure very similar to SEMS since 1961 when we established the Unified San Diego County Emergency Services Organization (Unified). Under the Unified, San Diego had a SEMS-like structure for responses within the County. SEMS has been well-received. It affects how we do business statewide, providing a common language and framework for all first responders.

6. *Throughout California, local conditions can create potential for different types of disasters (i.e., urban areas vs. urban/wild land intermix, etc.) Due to variations in risks, local jurisdictions may develop distinct mitigation programs. How are statewide standardization objectives compatible with the variations in local mitigation approaches?*

San Diego County was the first county to develop a multi-jurisdictional hazard mitigation plan for all disasters approved by the Federal Emergency Management Agency (FEMA). The State's standardized objectives do not prevent jurisdictions from working on regional issues. Statewide objectives are based on many local conditions. San Diego County works closely with State OES on the State Hazard Mitigation Plan and potential issues unique to San Diego.

7. *How effective has SEMS been in reaching its stated objectives to standardize statewide emergency response efforts involving more than one agency or government?*

SEMS has been very effective. An example can be found in the response to the Cedar fire in October 2003. San Luis Obispo was able to provide Emergency Management Mutual Aid to San Diego County and assisted us during the disaster by staffing the Planning

Section Chief and Situation Status positions. This provided County OES with experienced staff to fill those positions freeing County OES staff to fill other critically vacant positions. Under SEMS, outside counties can assist other jurisdictions with disaster response because they have the same training and use the same organizational structure and terminology. Using SEMS, there was less confusion and less misunderstanding among the many different disciplines and response agencies.

8. What aspects of SEMS do you consider the most relevant for past successes?

The most important aspects include interchangeable skills and accessibility to resources. We are able to get resources on scene faster, and can eliminate duplicate requests. This system has allowed us to be effective and efficient to provide a quicker response.

9. What do you consider the biggest challenges for SEMS' effectiveness in the next 3-5 years?

The biggest challenge is integrating SEMS into NIMS, and changing SEMS to meet NIMS requirements. We have been using SEMS for over 10 years. We do not know what the differences between the two systems will be, but we are confident that the transition from SEMS to NIMS will be accomplished smoothly.

10. How has participation in SEMS affected staffing requirements for your agency?

There has been no affect on staffing requirements as a result of SEMS here in San Diego's Office of Emergency Services (OES).

Specific Features

Mutual Aid

11. What has been the role of the OES Administrative Regions in coordinating mutual aid?

The OES Administrative Region provides resources that we cannot get locally. It provides a mechanism to obtain resources from other Operational Areas, the State or federal government.

12. How is the reimbursement of mutual aid costs managed? Of particular interest are factors relating to eligible costs for reimbursement, timeliness of reimbursement and processes for local jurisdictions claiming reimbursement.

Mutual aid, by law, is provided free of charge. If a Gubernatorial or Presidential declaration is received for the disaster, the providing agency could bill the requesting agency. The requesting agency would add that cost to those being submitted for reimbursed. Eligible costs include overtime, equipment, rental/leasing of equipment, etc., and consumables such as masks and gloves. The processing of local jurisdictional claims for reimbursement by the State has been very expedient. We have no complaints at this time. Federal reimbursement on the other hand has been very slow.

Incident Command System

13. What factors determine the selection of an incident commander?

Several factors determine who the incident commander becomes. They include the type of incident, who is on scene, what agencies are involved, what jurisdictions are they representing, the level of training and experience of the individual on scene, as well as who is the most senior level.

14. How are cases of ambiguity resolved for identifying the incident commander?

If there is confusion as to who the incident commander should be, this is resolved on scene. Normally, it is the most senior individual from the appropriate response agency. For example: During a fire in Chula Vista, someone who is in the Chula Vista Fire Department would normally be the incident commander. If no one from the CVFD is on scene, the senior fire official at the site would be the Incident Commander until a senior fire official from Chula Vista arrives on scene. Skill level and training would also be a factor in determine which person in the agency becomes the incident commander.

Funding

15. Are current funding levels compatible with reaching SEMS' program objectives? Please provide a brief explanation of your answer.

There is no state funding available for local jurisdictions for the SEMS' program. SEMS is a State unfunded mandated program that is implemented at the local level. Funding at the local level has been provided out of agency and jurisdictional budgets. Funding at this level is adequate because all jurisdictions are fully committed to SEMS.

16. Are there major constraints to program objectives due to funding considerations? Please provide a brief explanation of your answer.

The limited budgets available to all local governments, there is never sufficient funding to accomplish everything mandated by State and Federal governments. San Diego County prioritizes our objectives to ensure the most important are allocated the

appropriate resources. This enables us to provide the maximum response capability to our residents with the resources available to us.

Individual Learning and Training

17. How is the accumulated knowledge of individual first responders incorporated into the formal procedures or policies of SEMS?

After an exercise or response to an actual incident, an After-Action Report (AAR) is generated. The AAR discusses what went right, what went wrong and what needs to be improved. The report is reviewed by State OES, and an improvement plan is formed. Other methods used to update SEMS include state committees that meet and discuss SEMS issues based on these exercises and incidents.

18. What methods are available to individual first responders to recommend changes as a result of their experience in a specific disaster?

See #17 above.

19. How often has SEMS been revised as a result of recommendations from first responders?

After every major drill or an incident such as a fire, we modify the San Diego Operational Area EOC organization, using the AAR and lessons learned, to try to maximize our efficiency and effectiveness. State-wide SEMS, as a program, has not had major changes. Statewide committees review various recommendations and bring them forward for possible revisions to SEMS.

20. What do you consider the personal value of SEMS to individual first responders?

The personal value of SEMS to first responders is the ability to request resources from outside agencies and have those resources fit seamlessly into the response structure. SEMS has allowed for more confidence in individual skills and abilities, especially for staff from other areas and agencies. Responders have the same skills, use similar equipment, and have similar training.

21. One of the key aspects of SEMS is inter-agency coordination. How often does training occur?

a. Between agencies

Training between agencies occurs several times per year. Various agencies attend the quarterly UDC meetings where upcoming opportunities for training are made available to response agencies throughout the Operational Area.

b. Between jurisdictions

First responder training occurs on a routine basis. There are call-back drills, regularly scheduled exercises, refresher training, and the like. Conservatively speaking, each agency has the opportunity to train with a neighboring jurisdiction several times a year.

c. With private firms

San Diego Gas & Electric (SDGE) participates in exercises and incidents whenever possible. They are incorporated in jurisdictional training opportunities as needed. Other private agencies participate in training as desired to coordinate with their local jurisdictions.

22. Which private sector organization(s) are involved in pre-emergency planning sessions?

American Red Cross (ARC), Volunteers Active in Disasters (VOAD), SDG&E, and County Water Authority are actively involved in assisting in the development of plans and procedures. They all also attend the UDC Operations Section meeting quarterly.

23. What incentives, if any, are offered to private firms for participation in planning sessions?

No incentives are offered to private firms for their participation. Organizations are generally happy to participate because they know that participation will prepare them to not only respond to incidents, but assist them in recovery from a disaster as well.

24. How are proposed changes in equipment or procedures recommended?

Proposed changes in equipment or procedures are recommended through after-action reports and improvement plans. San Diego Operational Area also has an equipment subcommittee of the Urban Area Working Group that develops recommended standards for Personal Protective Equipment for Fire, Law and Public Works responders.

25. How have volunteers been utilized during

a. Planning phase

Volunteers have an active part in our planning process. They provide us with expertise we would not normally have and provide a perspective outside that normally found in response agencies. An example of this is the American Red Cross. They provide care and Shelter Services for the San Diego Operational Area. Part of this service includes the development of the Operational Areas' Care and Shelter Plan, a key part of the Emergency Plan.

b. Emergency response

Several volunteer groups play essential roles in our response. As mentioned above, the ARC staffs our Care and Shelter Unit in our EOC as well as operating any shelters opened for the emergency. We also rely on amateur radio operators. RACES (Radio Amateur Civil Emergency Service) helps staff our radios in the EOC. They also staff and deploy a mobile communications vehicle in support of field response operations. Other volunteer organizations provide support to us in donation and volunteer management and other areas.

26. After an emergency, what is the process for evaluating response effectiveness?

To evaluate effectiveness of response, after-action reports and improvement plans are written and submitted. Immediately after the exercise (or, in the case of a response to an actual emergency, as soon as possible after the event), a "hot wash" is conducted where key responders are asked what went well, what went wrong and how can we do it better? In addition, questionnaires are sent out to all agencies with a role in the response to ask them for any comments, improvements, needs and changes. Those responses are gathered and placed into the after action report. A written Improvement Plan is developed and disseminated.

Communications

27. What communications systems are utilized by your agency for emergency response actions?

Communications systems used in our county:

- Regional Communication System (RCS) on 800 MHz radios
- VHF backup to all EOCs
- Telephones—Land lines
- Internet—E team software
- RACES (Amateur radio)
- Cellular telephones, both personal and government issued

28. What are the differences in communication systems utilized by different

a. Jurisdictions

800 MHz radios are used by all 18 Cities and the County. Cities with automatic aid agreements with Federal and State agencies also have installed UHF and/or VHF equipment.

b. Disciplines

**Appendix E: Three County Demographic Comparison:
Orange, San Bernardino, San Diego Counties**

	Orange		San Bernardino		San Diego	
	<u>1993</u>	<u>2003</u>	<u>1993</u>	<u>2003</u>	<u>1993</u>	<u>2003</u>
County Population	2,555,100	2,975,300	1,565,400	1,709,400	2,578,900	2,961,700
County Size	798 sq. mi.	798 sq. mi.	20,161 sq. mi.	20,161 sq. mi.	4,526 sq. mi.	4,526 sq. mi.
Topography	42 miles of coastline; Remainder is desert, mountains		16,000 unincorporated sq. mi.; 90% desert; Remainder valley, mountains. SB County is largest U.S. Co. (13x size of RI); Co. provides service to 65 communities/cities		70 miles of coastline; Remainder is desert, mountains	
No. of Incorporated Cities/towns in County	34	34	24	24	18	18
County Budget	\$3,566,100,000	\$4,908,598,200	\$1,503,492,189	\$2,591,922,675	\$1,931,969,251	\$4,090,100,000
County Density Housing units per sq. mi.	305 in 1990	364 in 2000	71 in 1990	85 in 2000	594 in 1990	669 in 2000
Median Family Income *	\$45,116	\$55,909	\$34,397	\$43,294	\$35,648	\$48,766
Median Home Price	\$217,210	\$487,000	\$134,480	\$220,940	\$176,930	\$424,880
Total Assessed Property Valuation**	N/A	\$266.8b	N/A	\$93.9b	N/A	\$230.7b
Share of Local Property Tax***	5.75%	5.75%	11.9%	11.9%	14%	14%
County Fire Dept.	N/A	TBC	TBC	\$73.5m	N/A	N/A
Largest City	Santa Ana		City of San Bernardino		City of San Diego	
City's Population	311,100	337,977	179,900	183,700	1,144,700	1,275,100
City's Size	27 sq. mi.	27 sq. mi.	59.3 sq. mi.	59.3 sq. mi.	331 sq. mi.	331 sq. mi.

Source: *California Department of Finance. **California Controller's Office Local Government Annual Financial Report. ***California Legislative Analyst Office.

Appendix F.1: Resources at San Bernardino County Fires in 2003 Firestorm

<i>Date</i>	<i>Fire</i>	<i>Personnel</i>	<i>Crews</i>	<i>Engines</i>	<i>Helicopters</i>	<i>Dozers</i>	<i>Overheads</i>	<i>Acres</i>	<i>% Contained</i>
Tues. 10/21/03	Grand Prix	688	31	15	8	2	37	825	0
Wed. 10/22/03	Grand Prix	688	31	15	11	2	37	1958	15
Thurs. 10/23/03	Grand Prix	1,096	45	122	22	10	170	3,500	17
Fri. 10/24/03	Grand Prix	2,167	45	220	15	18	155	12,600	19
Sat. 10/25/03	Grand Prix	2,427	48	274	15	27	227	27,182	23
	Old	775	18	136	9	3	124	10,000	0
Sun. 10/26/03	Grand Prix	2,506	43	347	15	27	233	52,184	25
	Old	1,291	30	180	8	4	199	24,000	5
Mon. 10/27/03	Grand Prix	2,278	44	199	15	27	282	57,332	35
	Old	1,632	37	251	10	4	79	26,000	10
Tues. 10/28/03	Grand Prix	2,278	44	199	15	27	282	59,229	35
	Old	2,127	39	338	10	7	131	36,780	10
Wed. 10/29/03	Grand Prix	1,808	35	169	13	30	328	59,229	35
	Old	2,392	44	371	11	9	181	47,960	10
Thurs. 10/30/03	Grand Prix	1,851	32	173	12	26	302	59,358	75
	Old	2,940	46	469	14	12	277	91,281	15
Fri. 10/31/03	Grand Prix	1,847	36	178	14	22	318	59,358	95
	Old	3,812	81	408	16	37	467	91,281	45
Sat. 11/01/03	Grand Prix	1,544	31	145	12	13	264	59,448	95
	Old	4,211	90	386	16	71	608	91,281	65
Tues. 11/02/03	Grand Prix	622	9	11	2	10	238	59,448	95
	Old	4,133	88	356	17	52	766	91,281	78
Wed. 11/03/03	Grand Prix	588	9	6	0	9	226	59,448	97
	Old	2,998	73	156	16	24	768	91,281	93
Thurs. 11/04/03	Grand Prix	455	9	0	0	7	171	68,894	98
11/04/03	Old	1,792	41	70	6	17	468	91,281	96

Appendix F.2: Resources at San Diego County Fires in 2003 Firestorm

<i>Date</i>	<i>Fire</i>	<i>Personnel</i>	<i>Crews</i>	<i>Engines</i>	<i>Helicopter</i>	<i>Dozers</i>	<i>Overhead</i>	<i>Acres</i>	<i>% Contained</i>
Tue. 10/21/03	Roblar 2	218	6	30	5	2	14	800	5
Wed. 10/22/03	Roblar 2	493	11	39	5	8	64	2,085	5
Thur. 10/23/03	Roblar 2	1,210	32	101	7	15	119	3,885	35
Fri. 10/24/03	Roblar 2	1,304	38	92	6	15	150	4,680	50
Sat. 10/25/03	Roblar 2	1,313	38	87	0	15	145	4,720	70
	Cedar	456	18	27	0	3	5	5,319	0
Sun. 10/26/03	Roblar 2	520	13	34	0	2	112	6,892	85
	Cedar	1,000	30	170	3	1	15	134,257	0
	Otay	142	8	6	0	0	33	10,000	0
	Paradise	222	14	55	0	0	35	15,000	0
Mon. 10/27/03	Roblar 2	68	2	4	2	0	1	8,592	85
	Cedar	2,300	35	315	9	8	345	200,555	0
	Otay	331	10	28	0	4	6	45,291	90
	Paradise	918	18	115	2	2	75	30,000	15
Tues. 10/28/03	Cedar	3,330	28	503	14	14	605	206,000	0
	Otay	208	8	20	0	0	14	45,971	100
	Paradise	1,336	28	126	6	8	97	40,000	20
Wed. 10/29/03	Cedar	3,662	47	533	4	26	605	251,000	15
	Paradise	1,315	30	133	8	10	103	49,800	20
Thurs. 10/30/03	Cedar	3,682	49	533	21	26	605	272,318	42
	Paradise	1,446	26	146	11	21	163	56,000	30
Fri. 10/31/03	Cedar	4,275	49	667	21	41	605	273,246	65
	Paradise	1,579	30	157	13	25	195	56,700	50
Sat. 11/01/03	Cedar	5,203	79	722	32	55	553	273,246	90
	Paradise	1,936	51	152	12	15	197	56,700	65
Sun. 11/02/03	Cedar	2,120	37	242	31	42	422	273,246	95
	Paradise	2,222	62	143	19	18	196	56,700	75
Mon. 11/03/03	Cedar	1,378	34	119	4	4	480	273,246	99
	Paradise	1,745	56	103	11	16	192	56,700	77
Tues. 11/04/03	Paradise	1,611	56	70	16	14	176	56,700	85

SUMMARY OF STATE AFTER-ACTION REPORTS : 1993 AND 2003

Recommendations from 1993 After-Action Reports

1. More Rapid Response

Particularly for mutual aid in activating resources, tracking and support, reimbursement, personnel.

2. Increased Training

Increased training at all levels of ICS. Experienced ICS personnel tend to be promoted or retired. Use ICS advisors on major incidents.

3. Use of Unified Command

Allow all agencies with geographic or functional responsibility to work within a common Incident Action Plan.

4. Improved Communications

Responding agencies need new radio systems, cell phones and satellites to enhance incident communications and between department operating centers.

5. Aircraft

Improve procedures in military air support activation, use of heavy lift helicopters, and media aircraft interference.

6. Multi-Agency Coordination

Refine effectiveness of multi-agency coordination between Fire and Rescue Mutual Aid and Emergency Operations Centers at all levels.

7. Assisting Agencies

Supporting agencies (public works, law enforcement, utilities) express need for more coordination and training with fire services and Unified Command.

Recommendations from 2003 After-Action Reports

1. Communications

More interoperable communications in order to have a rapid response.

2. Interstate Coordination

Some states were not familiar with the Interstate Civil Defense and Disaster Compact for response and reimbursement. Reduce time for resource acquisition.

3. Access Federal Military Assets

Streamline access to federal resources for use by local and state officials.

4. Federal-State Coordination

Local and state agencies request smoother transition from response to recovery.

5. State Agency Plans

Several agencies not involved in prior disaster response activities stated a need to rework their plans to incorporate SEMS and mutual aid for managing issues such as debris, animal care, volunteers, donations, medical/ health/mental health.

6. Financial Issues

Reimbursement issues relating to mutual aid, volunteer organizations.

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