Investments in Fire and EMS in San Diego, Los Angeles and Orange Counties: An Update

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KEY FINDINGS

1) San Diego continues to spend SIGNIFICANTLY less than either Los Angeles or Orange County in respect to per-capita spending on fire and emergency medical services. In 2009-2010, however, that gap shrunk.

2) This gap persists even accounting for the approximately $28 million that CALFIRE invests in state general funds in serving certain areas in San Diego County.

3) Per capita spending differences lead to differences in staffing ratios. Larger San Diego fire agencies budget fewer positions per 10,000 residents when compared to larger sized fire agencies in Orange and Los Angeles Counties.

4) These differences are also evident in budgets for law enforcement, with San Diego jurisdictions cumulatively spending significantly less on law enforcement and corrections ($400) than either Orange County ($460) or Los Angeles County ($597).

San Diego's fire risk is getting worse. According to the 2010 Strategic Fire Plan for California, between 1950 and 2000 an average of 100 and 150 thousand acres of shrubs were burned in the state each year. Between 2000 and 2008, that spiked, with an average of 270,000 acres of shrub lands being burned.[1] Much of this is attributable to the devastating wildfires in 2003 and 2007 that, combined, burned more than 450,000 acres, destroyed 4,500 structures, and caused 17 deaths.[2]

In the years following the Witch and Cedar Fires numerous studies and reports have been released that have looked at how the San Diego region can better prepare to fight future wildfire events. A major effort has been undertaken to better coordinate activities of various fire agencies. Understanding the importance of facilitating greater efficiencies and more coordination, County Supervisors pushed forward a plan to consolidate several of the fire agencies located in San Diego's rural backcountry where extremely dangerous ignition events are most likely to occur. Earlier this year the CityGate Associates consultancy group completed an exhaustive study examining day-to-day fire and emergency medical services coverage in the region. Their study found that, overall, "there has been a constantly improving multi-agency set of coordinating efforts which actually started after the 1970 Laguna Firestorm, not just after the last two firestorms of this decade."[3]

FINDING #1: SAN DIEGO'S PER CAPITA EXPENDITURES CONTINUE TO FALL SHORT OF EITHER ORANGE COUNTY OR LOS ANGELES

From the perspective of creating a more efficient and effective regional fire fighting system improved coordination and communication are positive developments. In 2009 the National University System Institute for Policy Research (NUSIPR) found that the majority of the recommendations made in the aftermath of the fires had been carried out with a significant percentage of the remainder well in progress.[4]

However, not withstanding these efforts to improve the coordination among San Diego firefighting agencies, **local jurisdictions in San Diego continue to spend considerable less per capita than neighboring regions.** As of the FY 2010 budgets, San Diego agencies spent $26.98 less for fire and emergency medical services than local

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[1] . 2010 Strategic Fire Plan for California, State Board of Forestry and Fire Protection California Department of Forestry and Fire Protection, June 2010.
http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf668.pdf (accessed last August 26, 2010)

[2] . 20 Largest California Wildland Fires (By Structures Destroyed), CALFIRE, 11/4/2009.

[3] . Regional Fire Services Deployment Study for the County of San Diego Office of Emergency Services, CityGate Associates, May 5, 2010. pg 3
http://www.citygateassociates.com/san_diego_report/Volume_1_San_Diego_Main_Report.pdf (last accessed August 26, 2010).

[4] . "San Diego County Falls Further Behind: An update on Fire Protection Investment in Southern California," National University System Institute for Policy Research, 2009.

jurisdictions in Orange County and $66.71 less than the combined spending by jurisdictions in Los Angeles County which provide fire and EMS services..

TABLE 1
Per-Capita Expenditures for Fire and EMS Services FY 2005-2010

FISCAL YEAR[5]	COUNTY L.A.	ORANGE	SAN DIEGO
2005	$ 181.52	$ 140.21	$ 132.64
2006	$ 192.95	$ 149.63	$ 137.58
2007	$ 211.16	$ 160.47	$ 148.89
2008	$ 218.16	$ 168.63	$ 159.70
2009	$ 220.96	$ 188.73	$ 153.69
2010	$ 217.71	$ 177.98	$ 152.85

Sources: California State Controller; California Department of Finance; City and County budgets

In addition to local investments, San Diego benefits from the spending of the California Department of Forestry and Fire (CALFIRE) which has direct responsibility for fire fighting in much of San Diego's backcountry. Unlike either LA or Orange County, where CALFIRE contracts with Orange County Fire Authority and the Los Angeles County Fire Department, in San Diego County CALFIRE operates as an independent agency and is a critical cornerstone of the region's mutual aid system.

Inclusion of those expenditures shrinks but does not entirely close the gap. This year we received from CALFIRE officials data on their spending in San Diego County. We excluded from the analysis funds which flow to CALFIRE from contract agencies. We found that when attributing this spending to San Diego, the region's per-capita spending on fire and EMS were still 10% lower than Orange County and 26.6% less than Los Angeles.

[5]. Fiscal years 2005 to 2008 based upon figures for operations and capital expenses as reported by the California State Controller's Annual City and County Reports. For FY 2009 and 2010 municipal and county budgets were used. Whenever possible, actual expenditures, in lieu of budgeted figures, were used.

TABLE 2
Per-Capita Expenditures for Fire and EMS Services FY 2005-2010
Including CALFIRE Expenditures in San Diego County

FISCAL YEAR[6]	COUNTY		
	L.A.	ORANGE	SAN DIEGO + LOCAL CALFIRE
2009	$ 220.96	$ 188.73	$ 162.50
2010	$ 217.71	$ 177.98	$ 161.66

Sources: California State Controller; California Department of Finance; City and County budgets

FINDING #2: THE LARGEST FIRE AGENCIES IN SAN DIEGO COUNTY BUDGET FEWER FIRE DEPARTMENT POSITIONS PER 10,000 RESIDENTS THAN EITHER ORANGE AND LOS ANGELES COUNTIES.

In their recently completed study examining San Diego fire response, CityGate Associates argues that, "Fire department deployment, simply stated, is about the *speed* and *weight* of the attack. Speed calls for first-due all risk intervention units strategically located across a department…Weight is about *multiple-unit response for significant emergencies* like a room and contents structure fire, a multiple-patient incident, a vehicle accident with extrication required, or a complex rescue or wildland fire incident."[7] (emphasis added).

To see if there was a relationship between spending and staffing in this edition of our report, NUSIPR compared budgeted staffing levels in Orange and San Diego counties for local departments and agencies which had budgets of more than $10,000,000. We used the July 1, 2009 population estimates from the .US. Census. We also removed reported lifeguard staffing as lifeguard services are provided and budgeted in different ways between jurisdictions in the three counties. To estimate the population served by San Diego's large fire special districts (San Miguel, Lakeside, and Rancho Santa Fe) we either received information directly from the district or overlaid 2000 census tract information onto a GIS plot of the districts boundaries. Finally by focusing on those jurisdictions with at least a $10,000,000 budget for fire fighting we excluded departments and agencies which do not provide detailed budget documents and/or which heavily rely on volunteers to staff their departments. The agencies that were included in our analysis serve between 83 and 100% of the respective counties' population.

[6] . Fiscal years 2005 to 2008 based upon figures for operations and capital expenses as reported by the California State Controller's Annual Cities Report. For FY 2009 and 2010 municipal and county budgets were used. Whenever possible, actual expenditures, in lieu of budgeted figures, were used.
[7] . Regional Fire Services Deployment Study for the County of San Diego Office of Emergency Services, pg. 4

TABLE 3
Budgeted Personnel in 2009-2010 at Fire Department/Agency with budgets greater than $10,000,000

REGION	Full Time Equivalent Positions budgeted for in FY 2009-2010 budgets at Agencies included in analysis	Budgeted FTE Positions per 10,000 population residing in included jurisdictions
San Diego County	2068	8.52
Orange County	2674	9.01
Los Angeles County[8]	10,491	11.03

Source: Municipal and County Budgets, U.S. Census

FINDING #3 DIFFERENCES IN PER CAPITA SPENDING ARE ALSO FOUND IN OTHER AREAS OF PUBLIC SAFETY

Differences in per-capita spending are also evident in other areas of public safety. Using 2007-2008 data from the State Controller we calculated operating and capital expenditures from local law enforcement agencies in the three counties. Similar to our aggregation of data on fire expenditures, we accounted the expenditures by cities that contract with the respective sheriff for patrol services. We found that the gap between the three regions was also present in the FY 2007-2008 figures reported to the state. Whereas San Diego jurisdictions invested $400 in police services and corrections in FY 2008, Orange County spent $460 and Los Angeles County $597.

[8] . For the purposes of this study the Vernon fire department was excluded as that City uniquely serves more than 1,200 industrial-oriented businesses and only a few hundred residents. Its inclusion would have skewed the numbers somewhat higher

DISCUSSION AND CONCLUSION

There is little literature and even less consensus about how to compare, either among different jurisdictions or in measuring changes over time, wild land fire fighting capabilities.[9] Fire departments have largely has focused on measures of *coverage* - the actual time between a call for service and the arrival of the first responding unit. A secondary set of measures look at *outcomes*, though most measures do not try to control for a variety of confounding variables that might influence events irrespective of the speed and efficacy of the emergency response.

This focus makes a great deal of sense. The majority of calls to fire agencies are for emergency medical services. The consensus in the field is that time is of the essence, with the time between call and first response closely correlated with the ultimate medical outcome of many emergency situations. Wild land fires are a rare occurrence. California's mutual aid system means that major wildfires are fought by firefighters drawn from throughout the state and, indeed, the entire West. Major fires have such unique characteristics that it may be more misleading than illuminating to compare outcomes and counterfactual speculation.

With those caveats and warnings in mind, it is also the case that comparing per-capita investments in fire and emergency medical services among Orange, Los Angeles, and San Diego counties is one way of measuring, in a general way, relative investment and protection against major wild fire events. There are striking similarities between these counties. Each shares the challenge of having a large amount of urban/wildland interface, the areas most at risk of property damage during a wildfire event. All three have steep canyons and valleys which increase the challenges in fighting wildfires. Each usually experiences several days of extremely hot weather accompanied by strong, dry off-shore winds. Member agencies, for the most part, participate in a state pension plan providing a generally equalized level of benefits among fire department personnel. Their close proximity should mean that, on average, labor prices will settle on a rough equilibrium. Indeed, San Diego's more expensive cost of living compared to Los Angeles should further increase the adverse impact of lower per capita spending on the ability of agencies to build up fire fighting capacity.

More broadly, the after-action reports from the 2003 and 2007 fires in San Diego strongly suggest that trying to *suppress* wind driven major wildfires in an increasingly drier Southern California, while a worthy goal, is extremely difficult. It seems plausible that, instead, the critical part of the response to events similar to the Witch Creek and Cedar

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[9] . For a discussion of the use of performance measures in evaluating fire departments see "Fire Service Performance Measures", Jennifer D. Flynn (National Fire Protection Association, November 2009) www.nfpa.org/assets/files/PDF/OS.FSPerformanceMeasures.pdf (last accessed August 26, 2010)

fires is *structure protection*, with fire fighters during the first 12 to 24 hours of the event limiting ember blown ignitions and structure fires at the edge of the wild-land urban interface.[10] In such situations, the ability to deploy personnel and fire fighting rigs in front of the fire walls becomes paramount. Assuming efficiently is generally constant across counties, greater per-capita spending levels should mean that departments have more firefighters available to provide structure protection, at least during the critical period until the California Master Mutual Aid system brings additional resources from out of the region to bear.[11] Our analysis of budgeted positions per 10,000 residents suggests that this is the case, with those regions having greater per capita expenditures finding ways to increase at least the size of their fire departments. In future editions of this study we hope to get a clear definition of front line fire fighters and ascertain whether this higher budgeted staffing correlates with a larger number of actual fire fighters.

Finally, and most speculatively, it is worth taking note of the aftermath of four recent fires in Southern California:

- On November 15, 2008 the Freeway Complex Fire ignited alongside the Riverside Freeway (California State Route 91). Merging with another nearby blaze, the fire would ultimately grow to 30,305 acres in a densely suburban area of eastern Orange County. The reported temperature high in Santa Ana that day was 83 degrees. At the Corona Airport to the east of the fire's origins sustained winds were recorded at 28 MPH and gusting to 38 MPH. In all, 361 structures would be damaged or destroyed before the fire was fully controlled.

- On August 26, 2009 the Station fire broke out on the slopes of Mount Wilson near Pasadena. Winds were light (under 10 miles a hour at the weather station in La Verne, though temperatures at Burbank Airport some 6 miles to the NW of some of the most endangered areas would reach 90. Stubbornly burning for six weeks, the fire would consume 160,557 acres. Although tens of thousands of residents were evacuated from Pasadena, Flintridge, La Canada and threatened areas of the Angeles National Forest, the efforts of thousands of firefighters limited property damage to 209 structures.

- During the afternoon of May 8, 2007, broke in a remote area of Griffith Park. LAFD reported that at the time of ignition temperatures in the areas of the fire were between 80 and 85 with swirling light winds. Threatening hundreds of homes and in the middle of a densely built urban community, ultimately over 120

[10] . Michael Rohde, "Command During Castatrophic Inferface Wildfires" by: Michael S. Rohde at (**www.wildlandlessons.net**). For a detailed analysis showing structure loss in the Rancho Bernardo Community of the Trails during the 2007 wildfire see XXXX.

[11] . It should be of grave concern that a study found in 2005 that fire chiefs responding to an anonymous survey indicated increased unwillingness to send units to response to mutual aid requests. Randy Smith, Evaluating the Effectiveness of the California Master Mutual Aid System: Is it Working Today or Not, Place Consolidated Fire Protection District (2005)

- On October 21, 2007 the Witch Fire ignited when the reported high temperature at the Ramona airport of 81.[12] Winds were reported gusting to 69 miles an hour in the vicinity of the ignition point and up to 100 MPH at the front of the blaze. [13] Ultimately 197,900 acres would burn and 1,650 structures would be damaged or destroyed.

Again, these comparisons are not perfect. The Witch Fire saw winds speeds above those experienced in any of the other three fires. It could easily be the case that Orange and Los Angeles counties would have experienced equally awful outcomes in 2008 if the Santa Ana winds had been as strong as they had been a year earlier. That said, it is at least interesting that the regions which are investing more in fire and emergency medical services and have a higher ratio of fire personnel per 10,000 residents lost fewer structures to wildland fires than their neighboring region to the south. In all four cases suppression seemed less important (all three fires burned in excess of 30,000 acres) than structure protection along the urban-wildlife interface.

Without a doubt, 2010 is a period of unprecedented fiscal strain for California municipalities. They are confronted with both declines in revenues as well as increases in long-term obligations. San Diego governments with fire fighting responsibility are likely to find it extremely difficult to hold to current spending levels, much less catch up.

But beyond these strains, it is clear that the region remains confronted with another confounding factor. The message from many charged with thinking about whether the region has made adequate investments is that "all is well." Absent a new political dynamic emerging and a willingness to either find new revenues or reduce spending elsewhere, San Diegans, especially those living at the edge of the urban-wild land interface, must take comfort in the hope that these leaders are right (and that this report is wrong) and that the region is at least as adequately protected as other areas which have chosen, for whatever reason, to investment more in fire and emergency medical services than San Diego County and achieve higher budgeted ratios for their fire and EMS departments.

[12] . Temperature data obtained from www.mesowest.utah.edu, a database of historic weather information compiled by the University of Utah.
[13] . "Witch fire roars west across Rancho Bernardo and Poway," October 22, 2007 San Diego Union Tribune