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## Planning with Fire: Balancing Growth and Safety in Fire Hazard Areas

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By Jude Hudson

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In October 2007, nearly half a million people evacuated Southern California communities, fleeing fires driven by Santa Ana winds of up to 100 miles per hour. These wildfires affected lives and businesses in seven counties: Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara and Ventura.

The fires destroyed 2,180 residences, 922 out- buildings and six commercial buildings, according to the California Office of Emergency Services. Twenty-three separately named fires burned approximately 800 square miles; 96 firefighters were injured and seven people died. Four years earlier in five of those same counties, 14 fires burned 1,150 square miles over a two-week period, destroying 3,631 homes, injuring 246 people and killing 24.

California's catastrophic fires raise a number of questions about fire safety and land use planning. Does it make sense to build homes in high-risk fire hazard areas? What are communities doing to reduce their exposure to fire risks? What role should government play in protecting people and property from wildfires?

### State Updates Building and Fire Regulations

According to State Fire Marshal Kate Dargan, fire and building code changes that took effect Jan. 1, 2008, are designed to reduce fire risk by requiring that new construction include fire- retardant building materials and design elements, such as enclosed eaves that prevent sparks from flying into attics.

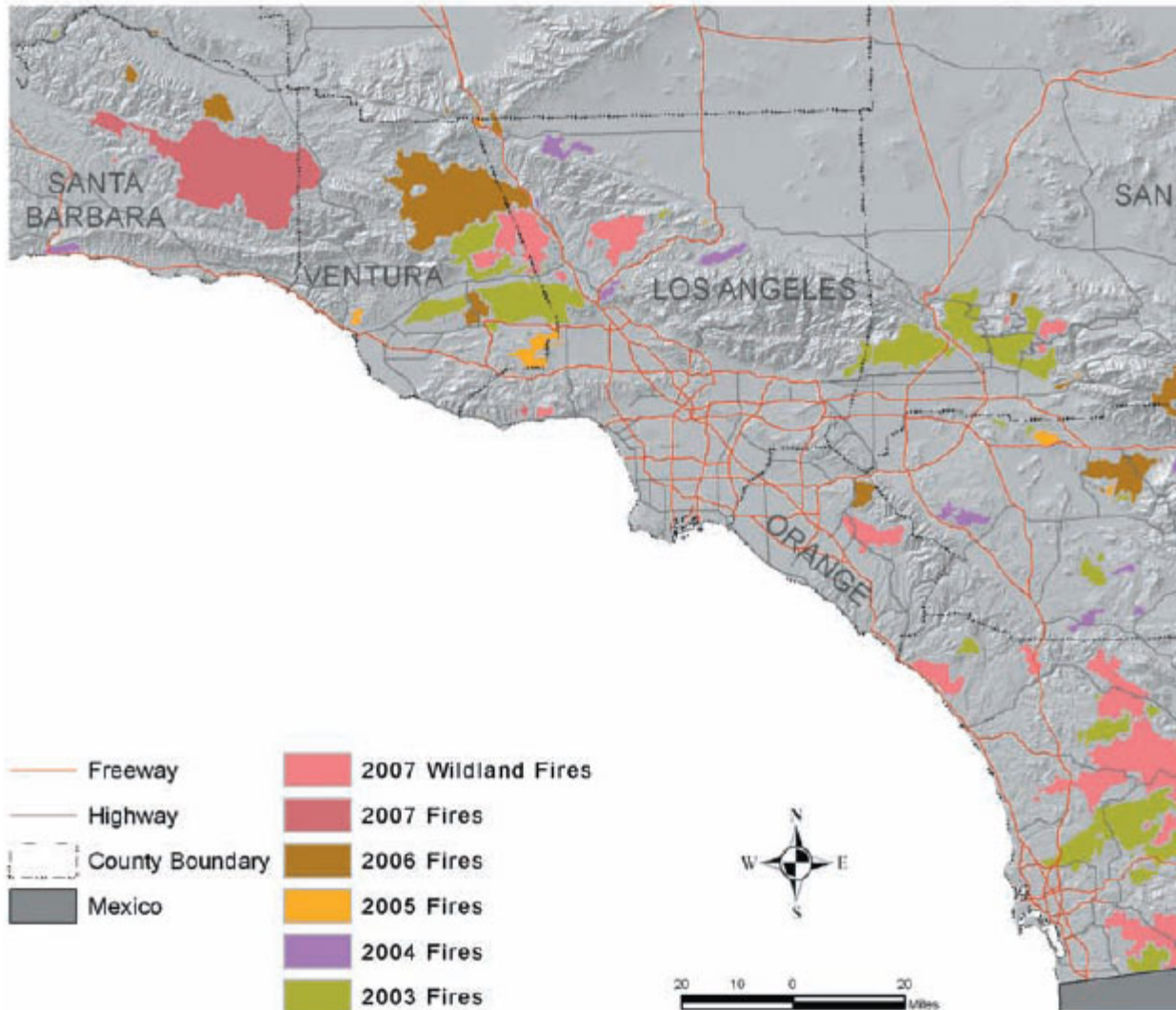
Dargan explains, "For the past two years, we have been working with the home building industry and building materials manufacturers to get the wholesale and retail systems to implement design, manufacturing and chemical changes. For example, fire-retardant decking material required chemical changes in the manufacturing process. The manufacturers had to be educated, and the retailers had to prepare for the changes. You can't turn that kind of industry around on a dime. This process is still under way."

### Taking Preventive Measures

Many communities adopted new regulations before the 2008 codes took effect. For example, after the 2003 Cedar Fire, the City of San Diego no longer allowed wood roofs in new construction and restricted their use in remodeling projects.

Bill Anderson, executive director of city planning and development for the City of San Diego, points out that site design is a key element in creating communities that are considered defensible space. "Site design contributed to homes avoiding fire damage that affected neighboring communities," says Anderson. "For example, one of San Diego's newer communities in a wildland-urban interface area, Black Mountain Ranch, was designed with defensibility in mind." The development uses setbacks and buffer areas, and coordinates brush control with wildlife habitat maintenance.

## SOUTHERN CALIFORNIA FIRES 2003 – 2007



*Source: Office of Emergency Services*

*Although many overlapping areas burned during the 2003 and 2007 fires, only one home was lost and state officials.*

### Evacuation and Related Challenges

Pasadena Fire Chief Dennis Downs says, "In terms of protecting people and property, the new regulations have come a long way regarding fire-resistant construction, nonflammable roofing and fire sprinkler requirements. What we're still facing as fire service professionals are areas in our communities that have limited access and high brush areas; these are older neighborhoods with narrow streets and homes built in the wildland-urban interface, where development continues. Until we figure out a way to ensure adequate access and water supply in these areas before building there, we will have communities at risk."

Downs is also concerned that extensive fire safety requirements may have an impact on property owners in older built-out neighborhoods. For example, one Pasadena residential neighborhood that was subdivided in the 1900s has 63

homes on a long narrow road with only one way in and out. He explains, "It's very hard to evacuate, let alone get fire equipment in. Now suppose an individual wants to build a home on a vacant lot on this street. If the city requires the individual to take steps to reduce the hazard in order to build there, such as constructing a separate road for fire access, this makes the project financially impractical." In some cases, property owners may try to challenge such financially onerous requirements as a property "taking." Though such cases rarely succeed, they do demonstrate the competing policy choices that cities must consider in older neighborhoods that lack adequate safety infrastructure.

"Newer hillside subdivisions are planned with fire-resistant construction and wider streets," Downs says. "That is defensible space. As a fire chief, I need to make sure that not only are the residents relatively safe, but that the positions are also safe where I'm potentially sending my fire fighters in to defend homes and property. If we don't have adequate levels of fire-resistant construction *and* access and egress points, then we're setting ourselves up for disasters in the future."

State Fire Marshal Dargan agrees that the issue of adequate access presents a major challenge. She says, "The key thing about infrastructure, or absence of infrastructure in less dense areas, is not so much an issue of whether the roads can accommodate fire engines but whether they can maintain evacuation access at the same time the engines are going in. In other words, can the roadways accommodate two-way traffic without interruption or stoppages in either direction? It's an engineering-focused planning issue."

Evacuation is a growing concern for many communities. Dargan believes that environmental and growth issues before planning commissions are likely to be contested by concerned residents on the basis of the evacuation issue. "You can ascribe solid numbers to traffic flow," she observes. "A secondary issue is the time frame within which the traffic has to flow out of the area during an evacuation. These issues are likely to generate debate over whether there should be a building moratorium - I see that discussion being spurred by the traffic issue. Whether communities use a zoning overlay with no-build zones or a temporary moratorium while they get a handle on the challenges related to evacuation, it's going to be a hot topic," says Dargan. "I'm confident that in the next five years we will see evacuation emerge as a key issue in land use planning in California."

### **Clearing Brush and Managing Vegetation**

"In terms of protecting the city from large wildfires, there's probably nothing more important than edging the brush," says Jim Sandoval, planning and building director for the City of Chula Vista. The city has an 11,375-acre reserve located within the city's jurisdiction and in adjacent areas. For every acre that's developed, 1.1 acres are set aside for habitat with an endowment to maintain it. However, the endowment is for maintenance only and doesn't cover the additional expense of clearing brush and thinning plant material that would provide fuel for a fire.

Over the past two years, Chula Vista staff has worked with resource agencies and a consultant to develop a plan that would allow some brush clearing and thinning in accordance with standards that wildlife agencies would permit. "We are going to take the plan to our city manager and the city council to find out if there's a way to financially support implementing it," Sandoval says.

Rod Gould, city manager of Poway, describes similar challenges related to brush: "Poway was hammered by the 2007 Witch Creek fire. We had a burn area of 7,240 acres; we had to evacuate 7,000 homes, and we lost 90 homes in the firefight that took four and a half days. After the Witch Creek fire, we realized we are going to have to get much more serious about brush clearing and vegetation management."

Poway, like Chula Vista and many California cities, has extensive open space areas, and a number of them are considered environmentally sensitive habitat. Gould says, "The federal and state wildlife agencies have a great deal to say about what -- if any -- changes can be made to such habitat areas. The regulations are very strict, and there's a lot of oversight. After the Witch Creek fire, we talked to these agencies to see if we could negotiate additional flexibility on open space and habitat areas. To our surprise and encouragement, both the federal and state agencies seemed quite willing to work with us."

That dialogue has expanded to include the San Diego Association of Governments (SANDAG) and the San Diego Fire Chiefs Association. The participants are working with wildlife agencies to find a better balance between protecting sensitive habitat and providing defensible fire zones. Gould reports that the wildlife agencies are in the process of determining what is better from an environmental standpoint. He says, "The issue isn't whether we're going to have larger fire breaks and greater fire prevention efforts -- for wildlife agencies, the issue is what's best for the environment in the long term."

Gould adds, "We will have to find the money to go out and clear those areas in accordance with the new rules we are able to negotiate with our partners at the federal and state wildlife agencies. We don't have the money but we will *have* to find it -- it's just too important."

In communities throughout Southern California, local officials observed that homeowners who took vegetation management seriously, used fire-retardant building materials and had plenty of access for firefighters generally fared much better in the 2007 fires than those who didn't.

Ali Fattah, senior research engineer for the City of San Diego Planning Department, points out, "If one person clears vegetation and does brush management but neighbors in adjacent homes don't, it negates that person's efforts."

Some officials think assessments for brush management should be part of the cost of living in a hazardous area. The debate is under way in many cities on how far is far enough when it comes to proactive fire protection policies and homeowners. Many communities, including Poway, are considering strategies that include:

- Inspecting homes at high risk;
- Requiring specific steps to clear vegetation and reduce the fuel load;
- Specifying a reasonable amount of time to comply; and
- Hiring contractors to clear vegetation if the property owners don't do so within the specified time frames.

### **The Role of Planning**

In San Diego, Bill Anderson says planning efforts to decrease fire risk are centered on infill: "The city is updating its General Plan using a 'City of Villages' strategy. Instead of building out into open space, we are focusing on developing existing areas of the city."

However, Bill Fulton, a land use planner and city council member for Ventura, points out that in general since the 2003 Cedar fire, "Changes to large-scale building patterns or planning practices have not been part of the mix. At least two factors appear to be forcing planners into the background. First, there is no consensus on what steps planners could take. And, maybe more importantly, the market place is unlikely to accept drastic changes in how people build in rugged, scenic -- and, yes, fire-prone -- areas."

Fulton also observes, "In unincorporated areas with timberlands, rangelands or watersheds, counties bear financial responsibility for firefighting if subdivisions contain more than three units per acre. If a subdivision contains less than three units per acre, then the state has financial responsibility to pay for the firefighting."

"In other words," Fulton continues, "if counties are inclined to permit subdivisions in fire-prone areas to begin with -- and most rural counties in California are so inclined -- then they have a financial incentive to lower the density so fighting wildfires is the California Department of Forestry and Fire Protection's problem. The Legislative Analyst's Office report from spring 2007 suggested that the minimum density requirement should be changed to remove this perverse incentive."

Fulton also points to the work being done in Riverside County, due in part to new state fire hazard maps. "Riverside is taking fire risk seriously, and considering the possibility of creating a fire hazard zone similar to the 100-year floodplain that would not permit development," he says. "So not everybody has given up [on the role of planning in fire prevention efforts]. And that is a good thing. Because surely if there is one thing that land use planning is well-suited for, it is mapping out hazards and helping to avoid them."

### **What Remains to be Done**

State Fire Marshal Dargan says, "Because the work of the U.S. Fire Service, especially the wildland component, is based on geographic information, we are preparing to start using geographic information systems (GIS) much more effectively than it has been in fire planning and fire fighting. We are retooling our internal capacity for GIS. This means shaking out the computer cobwebs top to bottom and redesigning how we share information. We want to make sure we are using the right info at the right time, no matter where we are in the planning, response or recovery process."

With respect to the role of planning, she adds, "At this point in time, there is only one generic document in the land use planner's toolbox that speaks to the General Plan and wildfires; it's a great first-generation document, but it isn't very specific in terms of fire. There are no guidance documents for fire protection plans or zoning guidance for subdivisions; there are no infrastructure checklists. For the planning profession, there are few if any educational materials that explain how to do a plan review with respect to fire. We need to develop some type of certification to offer land use planners in this area."

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