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Effective urban fringe planning: A case study of the 2007 San Diego wildfires

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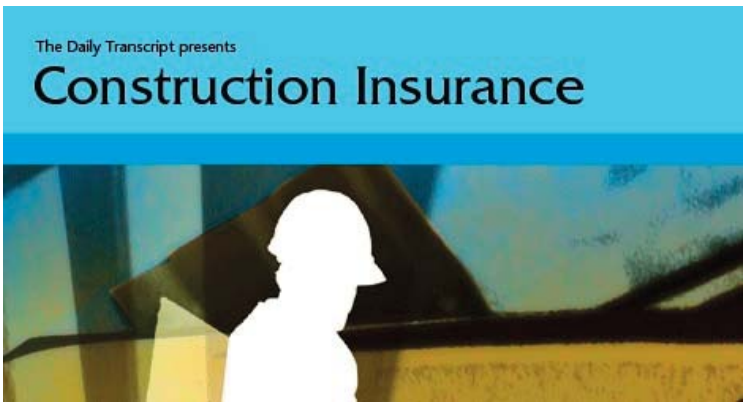

As development in the United States continues to push out into wilderness, hillsides, floodplains and other more challenging areas, the risk of catastrophic loss of life and property from natural disasters will grow exponentially. The wildfires that hit Southern California in fall 2007 are a reminder of how devastating these natural disasters can be on urban fringe development. Although the wildfires were devastating, certain communities within the burn areas avoided tragedy due in large part to having previously integrated fire preventative measures into the planning, construction and landscape maintenance of those communities.

According to agency reports, the 2007 wildfires that hit San Diego County were the largest in the county's history. The firestorms that swept through the county consumed approximately 369,000 acres, destroyed an estimated 1,600 homes, 800 outbuildings, 253 structures, 239 vehicles and two commercial properties. The firestorms were assisted by extremely powerful Santa Ana winds that at times exceeded 100 miles per hour in certain areas. The fires also resulted in 10 deaths, 23 civilian injuries and 89 firefighter injuries.

Massive evacuation efforts were necessary for many county residents, who found refuge at Qualcomm Stadium and the Del Mar Fairgrounds. Approximately 515,000 residents received either mandatory or voluntary evacuation notices during the firestorms, which exceeded the total number of people evacuated from New Orleans during the Hurricane Katrina disaster. Qualcomm Stadium served as temporary housing and refuge for such a vast number of county residents and pets that it has been termed the county's "mega-shelter."

Preliminary reports from the California Department of Food and Agriculture estimated statewide crop damages from the 2007 wildfires at $47.5 million, with San Diego County suffering the brunt of this damage at approximately $42.6 million. According to the county's investigations, the costs associated with the wildfires in San Diego County are estimated at $41.3 million, with projected damages exceeding $1.5 billion.

Although there were significant property losses as a result of the Witch Creek Fire, not a single structure was lost in the district's newer residential communities, which were constructed pursuant to strict requirements. These five communities were all built within the last eight to 10 years under a Wildland's Urban Interface (WUI) fire resistant systematic construction approach referred to as "Shelter-in-Place."

The Shelter-in-Place approach incorporates carefully crafted guidelines for building in WUI areas to reduce the risk of property loss, including the mandatory use of residential fire sprinklers, ignition resistant construction materials, Class-A non-combustible roofs, boxed eaves, dual pane or tempered glass windows, and a well-maintained fire resistant landscaping scheme that incorporates a 100-foot defensible space surrounding all structures.

Additionally, these five newer communities were required to incorporate wide roadways and driveways to accommodate evacuation traffic and entering emergency vehicles, adequate water supply to fight fires and vegeta-

tion-modification zones encircling the community. According to the district's fire marshal, Cliff Hunter, the Shelter-in-Place approach to development and subsequent maintenance of the defensible space to reduce fire fuels is why these newer communities were able to escape damage from the Witch Creek Fire as it raged through the area.

What caused other areas to suffer more damage than these well-planned areas? The Modjeska Canyon area, which suffered the brunt of the housing losses in the Orange County fire, contains an eclectic mix of custom homes without any large housing tract-type developments where uniform community fire prevention safeguards were implemented.

The Santiago homes destroyed by the Santiago Fire are all located in high wildfire hazard areas. Local authorities have said the dry vegetation that provided fuel for the Santiago Fire was comprised of plant communities such as coastal sage scrub and chaparral, which actually rely upon fire as a natural process to clear "standing biomass (dead plants, leaves, etc.), thus allowing new growth to receive sun, water, and nutrients." The natural renewal of these plant communities through fire has historically occurred every 20 to 70 years. While this is a wonderful natural cycle, it does not provide a good "habitat for houses."

Development in the United States continues to push into wildland areas, where wildfires are unfortunately a fact of life. As fire authorities have long known, local jurisdictions need to condition the approval of development projects in wildfire prone areas on the implementation of safeguards that will reduce the risk that homes will burn when fires occur. Based on the natural brush, chaparral and dry arid climate in California, it is not a question of whether a WUI community may be tested by wildfire but instead a question of when it will be tested. If wildfires are an inevitable challenge for urban fringe development, it is imperative that local jurisdictions work with fire authorities to ensure communities are constructed using community-level fire planning whenever possible.

Ironically, given the success of community level planning in the 2007 Southern California wildfires, developers can use adoption of these measures as a tool to market new homes. "Buy a home in a fire-safe community" might be the next ad campaign by a developer adopting community level fire protection measures.

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