

July 23, 2020

**J. Keith Gillless, Chair**

California Board of Forestry and Fire Protection

P.O. Box 944246

Sacramento, CA 94244-2460

**Re: Defensible space guidance should prioritize working from the house outward**

As a collection of fire professionals and scientists, we agree that treating fuels within the first five feet of structures is one of the most important aspects of wildfire hazard mitigation.

During wildfire, structures are threatened not only by the flaming front of the fire, but also by flaming embers that are lofted ahead of the fire front and can come into contact with receptive fuels (e.g. vegetation or mulch next to the house), igniting new fires. Traditional defensible space tactics are designed to mitigate threats from the flaming front of the fire but do little to address vulnerabilities to embers on or directly adjacent to a structure. Without attention to ember-related risks, defensible space efforts only address a portion of the wildfire threat—especially during wind-driven fires in which embers are the primary source of fire spread.

Helping residents achieve greater wildfire resiliency will take a coupled approach and greater awareness of ember protection. Homes survive wildfire through a combination of 1) careful design and maintenance of landscaping; 2) awareness and management of combustible materials on the property (e.g., leaf litter, wood piles, and lawn furniture); and 3) incorporation of fire- and ember-resistant construction materials with appropriate installation and maintenance. **Focusing on the perimeter (0-5 feet) immediately around a structure and the footprint of attached decks would address the missing piece in defensible space protection.**

The number of homes lost during the 2017 and 2018 fire seasons demonstrates that significant change is needed to protect property and lives. Reducing fuels in the five-foot perimeter of the house and attached decks may be a radical change, but post-fire assessments and research (Hedayati et al. 2018<sup>1</sup>) have demonstrated that, when considering ember exposures, this is the most vulnerable area around the home. Prioritizing this area will reduce the potential for ember-caused direct flame contact and radiant heat exposure, which are responsible for many home losses. Because embers can accumulate at the base of an exterior wall, it is also

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<sup>1</sup> Hedayati, F., Stansell, C., Gorham, D.J. and Quarles, S.L. 2018. Wildfire Research - Near-Building Noncombustible Zone. Insurance Institute for Business & Home Safety, Richburg, SC. 18 pp. <https://ibhs.org/wildfire/near-building-noncombustible-zone/>

important to incorporate a six-inch noncombustible zone between the ground and the start of the building's exterior siding.

Modernizing defensible space guidance to incorporate the data from fire investigations and research is essential to helping California become resilient to wildfire. We recognize that these changes are significant and will take time to implement and phase in for existing homes. We recommend that the Board pursue an update of PRC 4291 as soon as is feasible.

Respectfully,

**Raymond B Bizal**— Director, Regional Operations, National Fire Protection Association

**Kate Dargan**— California State Fire Marshal (*retired*)

**Dr. Chris Dicus**— Professor, Wildfire and Fuels Management at Cal Poly (San Luis Obispo) and President, Association for Fire Ecology

**Todd Lando**— Vice President, FIREsafe MARIN, and Battalion Chief, Wildfire Hazard and Vegetation Management Specialist, Central Marin Fire Department

**J. Lopez**— Local Government Forester (*retired*)

**Ken Pimlott**— Director, CAL FIRE (*retired*), RPF #2550

**Stephen Quarles** — Advisor, UC Cooperative Extension (*emeritus*)

**Lenya Quinn-Davidson**— Director, Northern California Prescribed Fire Council

**David Shew**— CEO, Wildfire DefenseWorks and Staff Chief, CAL FIRE (*retired*)

**Yana Valachovic**— RPF #2740

CC: Thom Porter, Director, California Department of Forestry and Fire Protection  
Wade Crowfoot, Secretary, California Natural Resources Agency