

**BOARD OF FORESTRY AND FIRE PROTECTION**

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**To:** Resource Protection Committee  
Chair Bruce Saito  
Member Keith Gillless  
Member Mary Rickert

**Date:** May 8, 2014

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**From:** Edith Hannigan, Board Consultant

**Subject:** 14 CCR § 1273.09 Dead-End Roads

Dear Chair Saito, Member Gillless, and Member Rickert,

Since 2012, a group of CAL FIRE staff and local representatives have been working to update the regulations established under the authority of Public Resources Code § 4290. The regulations are titled "State Responsibility Area Fire Safe Regulations" and can be found in Title 14 – 14 CCR § 1270 et seq. These standards address:

- 1) Road standards for fire equipment access
- 2) Standards for signs identifying streets, roads, and buildings
- 3) Minimum private water supply reserves for emergency fire use
- 4) Fuel breaks and greenbelts

The group was tasked by the Board with ensuring consistent, technically sound, and appropriate regulations and guidelines are established for governing fire safe development in State Responsibility Area and other locations determined to be within the statutory responsibility of CAL FIRE. They reviewed the history of the fire safe regulations, evaluated changes in the fire service since those regulations were originally enacted in 1991, and conducted a code comparison between these and other relevant state regulations. In addition, the workgroup conducted a field review of emergency equipment apparatus against the current regulation standards, and examined alternatives that would allow for adequate equipment access and civilian and firefighter safety. Finally, the group solicited stakeholder input and comment from across the state, including county and local government, CAL FIRE units, regional representatives, and industry representatives.

After conducting the literature review described above, the workgroup was able to develop specific standards for roadways based on the dimensions of CAL FIRE Model 34 engines, local government water tenders, dozer transports, and CAL FIRE sedans (as civilian vehicle stand-ins), as well as standards for identifying signage, water supplies, and fuel breaks and greenbelts. The standards they developed are based on the field experiences with these vehicles, are consistent with other regulations or

standards (they utilized language from the California Fire Code where appropriate), and are focused on achieving the “intent” of each regulation.

However, the group could not reach a comfortable consensus on the regulation detailing a standard for dead end road length limits. The current regulation is not based on any particular scientific knowledge or other existing regulation or standard, and the group did not feel they possessed the specialized transportation and traffic planning knowledge required to establish a standard that achieved the intent of the dead end road limit - *to minimize civilian entrapment during an imminent wildfire threat and allow for movement of emergency vehicles to assist with evacuation and engage with fire suppression activities.*

The 4290 workgroup felt the following information would be necessary to establish a scientific, supported, and defensible dead end road length limit that achieved the above objective:

- an evaluation of the current prescriptive standard, which is based on zoning and parcel size
- the time needed to evacuate a given area, residential or commercial
- a metric that incorporated zoning, fire behavior, topography, and traffic, and other considerations

With this information, the workgroup could develop a performance-based, scientifically supported dead end road standard that allowed simultaneous evacuation of civilians and ingress of emergency vehicles to a given area.

An interdisciplinary research group from Cal Poly – San Luis Obispo has been engaged to perform research on this topic and develop

- an assessment of the current standard
- proposed changes to the current standard governing the design of single-access subdivision dead-end roads, based on the above assessment
- a tool allowing users to mathematically test whether proposed designs of single-access subdivisions meet the intent of 14 CCR § 1273.09 Dead-End Roads
- a user guide for the above tool

The contract and funding is in progress and expected to be executed in the beginning of FY 14/15. A final report is expected October 31, 2015.

The necessity of the Cal Poly research is made apparent by a recent request from Tuolumne County to re-certify their existing “in-lieu” ordinances that implement PRC § 4290. The existing state standard limits the length of dead end roads based on the *most restrictive* zoning density the road passes through. The proposed changes to the Tuolumne County Ordinance Code (TCOC) changes their standard (TCOC 11.12.040) so that the length limit is based on the *least restrictive* zoning density, but adds turnouts and sets a maximum length limit.

Without knowing how such a length limit would impact civilian and emergency vehicle movement, it is difficult to determine, as certification requires, whether such a standard

“meets or exceeds” the state standard. Additionally, there is no scientific or other knowledge that supports the state standard as a superior mechanism for simultaneous ingress and egress over Tuolumne County’s suggested standard.

At this time, Tuolumne County’s suggested changes must be reviewed against the existing state standard. The state standard is prescriptive and does not allow for alternative “same practical effect” substitute standards such as the one Tuolumne County suggests, but given the issues presented above regarding the dead-end road standard, the Resource Protection Committee may exercise their judgment in determining whether Tuolumne County’s suggested regulation meets or exceeds the existing state regulation.

Board staff has reviewed the remaining changes Tuolumne County proposed to their Ordinance Code Chapter 11.12, Road Standards, and considers them as meeting or exceeding the existing state standards. Staff respectfully requests an opinion from the Resource Protection Committee on whether TCOC 11.12.040 meets or exceeds the state standard for dead end roads, and if not, what standards Tuolumne County may enact to be in compliance.

Thank you,

Edith Hannigan  
Board Staff