

To: Assembly Insurance Committee & Assembly Emergency Management Committee

From: Frank Frievalt, Director, Wildland-Urban Interface FIRE Institute
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Date: 6/7/2023

Re: Written comments supplementing oral comments to be given in the joint committee hearing on 6/14/2023

Dear Committee Members,

Thank you for inviting me to meet with you today. Your Committees, and our institute, are responding to conflagration-levels of property and life loss following wildland-urban interface (WUI) community exposure to wildfire. The mission of the WUI FIRE Institute (Institute) is to help create the most fire resilient communities in the world.

Conflagrations are unique among natural catastrophes because the buildings are concurrently assets to be protected from fire, and a contributing hazard to the fire loss sequence we are trying to disrupt. Previously successful approaches to assessing risk have become less reliable for two reasons. First, current conditions contributing to total risk on the ground are now outside of historical ranges, reducing the predictive utility of historical loss data. Second, competitive market and regulatory forces acting on the insurance industry do not support the widespread sharing of risk information at the parcel level. Risk saturation management promotes dispersed rather than contiguous property insurance underwriting. These two conditions disconnect the physically dispersed risk of fire loss probability defined within a book of business, from the physics-defined probability of fire loss through concentrated structure-to structure spread. In the WUI, when structure separation distances are less than 100', individual property loss risk cannot be fully understood in the absence of knowing adjacent property loss risk.

We are experiencing the leading edge of a perfect storm created by unsustainable vegetative fuel loading, climate change, and expanded development in the WUI. Failure to prepare for what is approaching will, at best, result in avoidable loss of life, property, and cascading financial ramifications that will devastate homeowners, insurance, reinsurance, municipal bond, mortgage, and construction industries. At worst, we face an existential threat through irreparable damage to ecosystems in the Western US, including California. Returning beneficial fire to these ecosystems is essential, but will remain politically unacceptable, unless we can concurrently and confidently induce fire resilience in our WUI communities.

The Institute's strategic approach is straightforward; enable optimized disruption of three fire pathways within one quarter to one half mile of WUI boundaries. The three fire pathways are: vegetation to vegetation, vegetation to structure, and structure to structure. We are defining a WUI as any concentration of 100 or more structures in or adjacent to vegetation landscapes capable of supporting wildfire spread, with predominant structure to structure separation distances of 100 feet or less.

Our approach utilizes a continuous mitigation improvement cycle wherein:

- The best fire science,
- Driving the best modeling,
- Driving the best valuation of risk mitigations,
- Enabled through open-source parcel/community mitigation data which,
 - Improves emergency responder effectiveness and safety through enhanced situational awareness, and
 - Supports rigorous post-fire parcel level analysis of mitigation efficacy that will,
- Iteratively redefine the most effective WUI mitigations to disrupt fire pathways (i.e., the best fire science).

Implementing and maintaining parcel and community level mitigations, sufficient to disrupt fire pathways, must necessarily include property owners. To best support property owners on what must be done to protect themselves, and their neighbors, from losses to wildfire, we must provide a consistent and clear set of evidence-based mitigations, recognized in material ways meaningful to them, among four key authorities: state WUI fire codes, insurance regulations, property insurance trades, and local fire authorities. In the absence of evidence-based mitigation alignment among these four authorities, property owner implementation and maintenance of these mitigations at a scale sufficient to disrupt fire pathways will not be accomplished, and we enable future conflagrations.

Solving the WUI issue feels hard, it should, it meets nearly all the criteria of a “wicked” public policy problem¹; nevertheless, it is our watch, and our problem to resolve. There are two examples of existing hard issues that provide transferrable concepts to build from; coastal science, and CalPERS.

Oceanographic and terrestrial sciences, as areas of dedicated study, existed before coastal sciences. It took time to realize that the economic, environmental, biological, social, and political complexities of regions where the land interfaces with the water could not be adequately understood simply as extensions of oceans into land, or of land into oceans. We realized, eventually, that this land-water interface (coastlines), required its own domain for study and policy. Similarly, legacy land use and urban planning policies, especially when practiced as dichotomies thrust upon each other, are not equipped to address the social, economic, political, environmental, financial, or thermodynamic complexities of the WUI.

¹ Dilemmas in a General Theory of Planning Author(s): Horst W. J. Rittel and Melvin M. Webber Source: Policy Sciences, Vol. 4, No. 2 (Jun., 1973), pp. 155-169. Published by: Springer Stable URL: <http://www.jstor.org/stable/4531523>.

The CalPERS (PERS) retirement system provides pension services to roughly 2 million individuals through nearly 3 thousand contracted organizations. As labor agreements changed incrementally through periodic renegotiation, the scope of PERS compensable items also changed. It eventually became apparent that, over time, a gap between incremental local contract increases in PERS compensable items, and the rate of contracted agency contribution to PERS, had become fiscally unsustainable. This became known as an “unfunded accrued (financial) liability” or UAL. Actuarial analysis was applied and shaped the policy we are presently using to bring PERS back to a sustainable state. The current policy now requires a much more accurate contribution for new members by more precisely aligning PERS compensable items in local labor contracts with each local agency’s PERS contribution. Each local agency now pays its own UAL to reconcile underpayment in years past.

I believe the WUI, in its present state, has an unfunded accrued (wildfire risk) liability. Incremental changes in fuel loads, climate, and development, have combined to create a gap between our perception of structure loss risk to wildfire and the actual risk. In this application of a UAL however, the currency needed to regain solvency (i.e., prevents WUI conflagrations) is mitigation rather than dollars. To “pay down” our WUI UAL through large infusions of (mostly) property owner mitigation will require clear, concise, and meaningful alignment among the four authorities I mentioned earlier.

Fire suppression will continue to be an essential part of WUI strategy, but we cannot “suppress” our way out of conflagrations. Risk transfer and financial surety instruments (e.g., insurance, mortgages) will remain an essential part of our economy, but we cannot “price” our way out of conflagrations. Only a combination of ecologically beneficial fire on the landscape, fiscally sustainable risk transfer, and hardened structures enabled through evidence-based parcel and community level mitigations, implemented and maintained at scale, will succeed.

It is my intent to engage Cal Poly's six colleges, and other institutions, in a transdisciplinary approach to provide the social, financial, architectural, environmental, mathematical, and engineering expertise required to operationalize a sustainable WUI mitigation strategy.

I look forward to speaking with your respective committees on 6/14/2023.