Causal and Contributing Factors

The human elements are critical factors in the evaluation of this investigation. A risky decision or a series of risky decisions appear to have contributed to this dangerous situation from which there was no room for error.

*Causal Factors are any behavior, omission, or deficiency that if corrected, eliminated, or avoided probably would have prevented the fatality.*

**Causal Factor 1.**
There was a loss of situational awareness concerning the dangers associated with potential fire behavior and fire environment while in a complex wildland urban interface situation.
(Findings #12, #16, #18, #19, #20, #21, #22, #23, #25, #26, #32, and #33)

**Causal Factor 2.**
The decision by command officers and engine supervisors to attempt structure protection at the head of a rapidly developing fire either underestimated, accepted, and/or misjudged the risk to firefighter safety.
(Findings #9, #10, #11, #16, #17, #18, #19, #20, #22, #24, and #26)

*Contributing Factors are any behavior, omission, or deficiency that sets the stage for an accident, or increases the severity of injuries.*

**Contributing Factor 1.**
Organizational culture - The public (social and political) and firefighting communities expect and tolerate firefighters accepting a notably higher risk for structure protection on wildland fires, than when other resources/values are threatened by wildfire.
(Findings #8 and #9)

**Contributing Factor 2.**
Fire environment - Santa Ana winds came into alignment with the “unnamed creek drainage” and the inversion was penetrated by the thermal uplifting from a fire run which contributed to extreme fire behavior and area ignition.
(Findings #15, #19, #20, and #21)

**Contributing Factor 3.**
Fire environment - The fire burned in rugged terrain and the burnover occurred in the upper end of a steep drainage with fuel loads at seasonal low fuel moisture levels.
(Findings #18, #22, and #23)
Contributing Factor 4.
Fire environment – The terrain and road system limited access to Type III or smaller fire engines.
(Findings #14 and #24)

Contributing Factor 5.
Span of control – The five Forest Service fire engines and March Air Force Base 10 fire engine were not supervised by a strike team/task force leader. This contributed to increased complexity and span of control.
(Findings #8, and #12)

Contributing Factor 6.
Communications – The five Forest Service engines used a Forest Service tactical radio frequency not assigned to the fire for tactical discussions. Effective communication controls were not in effect prior to the incident.
(Findings #32, #33, and #34)

Contributing Factor 7.
Leader’s intent – Communications between Branch II and Engine 57 Captain at the Octagon House were not clear or understood.
(Finding #15)

Contributing Factor 8.
A contingency map developed in 2002 for the area that identified structure location/defensibility and Mountain Area Safety Taskforce Interface Protection Plan information was not used for strategic or tactical risk assessments or plans.
(Finding #10)