Opposing Views-Attachment #11

Response to Attachment #11

COMMENT

Dr. Cohen's opposing view #1 - “Research results indicate that the home and its immediate surroundings within 100-200 feet (30-60 meters) principally determines the home ignition potential during severe wildland-urban fires. Research has also established that fire is an intrinsic ecological process of nearly all North American ecosystems. Together, this understanding forms the basis for a compelling argument for a different approach to addressing the wildland-urban fire problem.” (Pg. 1 – abstract)

Source:  Wildland-Urban Fire—A different approach
http://www.nps.gov/fire/download/pub_pub_wildlandurbanfire.pdf

RESPONSE

Dr. Cohen's research directly relates to home ignition probability, but is not a direct commentary on any portion of the EFRS EA or Proposed Action. In the majority of cases, flammable forest vegetation is found within 200 feet of homes on private property (i.e its "immediate surroundings) within the project area. In the event of a wildfire, the ignition of vegetation within the immediate surroundings of these homes could likely result from the spread of wildfire from adjacent National Forest lands. In such an event, it is common for firefighters to be brought in to protect properties from ignition due to spreading wildfire. If wildfires cannot be controlled before ignition of vegetation within the immediate surroundings of homes on private property, it is likely that both human lives (firefighters and homeowners) and property (real property, belongings and government firefighting equipment) will be at risk from spreading wildfires.

COMMENT

Dr. Cohen's opposing view #2 - “A senior physicist at the Stanford Research Institute, C.P. Butler (1974), coined the term "urban-wildland interface" and described this fire problem as follows:

    "In its simplest terms, the fire interface is any point where the fuel feeding a wildfire changes from natural (wildland) fuel to man-made (urban) fuel.” (Pg. 1)

RESPONSE

While this term may have been coined in 1974 by Butler, the commonly accepted operational definition for the Wildland Urban Interface (WUI) in 2013 is much different. The wildland urban interface was defined in the Montrose County Community Wildfire Protection Plan (CWPP) as an area within 1.5 miles surrounding private land inholdings. The Montrose CWPP is available at: http://csfs.colostate.edu/pdfs/Montrose_County_CWPP.pdf

COMMENT

Dr. Cohen’s opposing view #3 - “The results of the diverse analytical methods are congruent and consistently indicate that ignitions from flames occur over relatively short distances—tens of meters not hundreds of meters. The severe-case estimate of SIAM indicates distances of 40 meters or less. Experimental wood walls did not ignite at 10 meters when exposed to experimental crown fires. And, case studies found that vegetation clearance of at least 10 meters was associated with a high occurrence of home survival.” (Pg. 4)

RESPONSE

As mentioned in the Response to Comment #1, fires burning in adjacent vegetation within the distances shown above, most likely within private lands, are likely to ignite property. Uncontrolled wildfire spreading from burning vegetation located within the adjacent National Forest lands are likely to be the source of the ignition of vegetation adjacent to homes capable of igniting private property.

COMMENT

Dr. Cohen’s opposing view #4 - “Analyses of southern California home losses done by the Stanford Research Institute for the 1961 Belair-Brentwood Fire (Howard and others 1973) and by the University of California, Berkeley, for the 1990 Painted Cave Fire (Foote and Gilless 1996) are consistent with SIAM estimates and the experimental crown fire data. Given nonflammable roofs, Stanford Research Institute (Howard and others 1973) found a 95 percent survival with a clearance of 10 to 18 meters and Foote and Gilless (1996) at Berkeley, found 86 percent home survival with a clearance of 10 meters or more.” (Pgs. 3 and 4)

RESPONSE
See responses to opposing views #1 and #3. Additionally, this study describes home survival within fires burning in a much different region and fuel type. It also describes survival rates for homes with non-flammable roofs.

**COMMENT**

**Dr. Cohen’s opposing view #5** - “Extensive wildland vegetation management does not effectively change home ignitability.” (Pg. 5)

**RESPONSE**

The objective of treatments within WUI areas is not to change home ignitability, but to reduce crown fire potential and fireline intensity to a point where control of wildfires burning within adjacent National Forest land is possible (See EFRS EA Proposed Action, Wildland Urban Interface), thus reducing the potential for wildfires to spread from these lands to fuels within private property which may be capable of igniting structures.

**COMMENT**

**Dr. Cohen’s opposing view #6** - “Home ignitability also dictates that effective mitigating actions focus on the home and its immediate surroundings rather than on extensive wildland fuel management. Because homeowners typically assert their authority for the home and its immediate surroundings, the responsibility for effectively reducing home ignitability can only reside with the property owner rather than wildland agencies.” (Pg. 5)

**RESPONSE**

See responses to opposing views #1 and #3. The EFRS proposed action does not have a direct objective of attempts reducing home ignitability. We agree with Dr. Cohen’s assessment that home ignitability in the event of an uncontrolled wildfire is highly associated with fire mitigation measures completed within the immediate surroundings of private structures.

**COMMENT**

**Dr. Cohen’s opposing view #7** - “As stated, the evidence indicates that home ignitions depend on the home materials and design and only those flammables within a few tens of meters of the home (home ignitability). The wildland fuel characteristics beyond the home site have little if any significance to WUI home fire losses.” (Pg. 5)

**RESPONSE**

See responses to opposing views #1 and #3. Wildland fuel characteristics beyond the home site, as well as fire behavior and fireline intensity, are directly related to wildfire resistance to control. Thus, uncontrolled fires which burn onto vegetation surrounding private structures are much more likely to result in home ignition than wildfires controlled within the adjacent National Forest lands before spreading to vegetation adjacent to homes.

**COMMENT**

**Dr. Cohen’s opposing view #8** - “Home ignitability implies that homeowners have the ultimate responsibility for WUI home fire loss potential. As shown, the ignition and flammability characteristics of a structure and its immediate surroundings determine the home fire loss potential. Thus, the home should not be considered a victim of wildland fire, but rather a potential participant in the continuation of the wildland fire. Home ignitability, i.e., the potential for WUI home fire loss, is the homeowner's choice and responsibility.” (Pg. 5)

**RESPONSE**

See responses to opposing views #1, #3 and #7.

**COMMENT**

**Dr. Cohen’s opposing view #9** - “However, public and management perceptions may impede homeowners from taking principal responsibility. For example, the Federal Wildland Fire Management, Policy and Program Review (1995) observes, ‘There is a widespread misconception by elected officials, agency managers, and the public that wildland/urban interface protection is solely a fire service concern.’ In a Journal of Forestry article, Beebe and Omi (1993) concur, stating that, ‘Public reaction to wildfire suggests that many Americans want competent professionals to manage fire flawlessly, reducing the risks to life, property, and public lands to nil.’ These statements agree with Bradshaw’s (1988) description of the societal roles in the WUI problem. He observes that homeowners expect that fire protection will be provided by others. Contrary to these expectations for fire protection, the fire services have neither the resources for effectively protecting highly ignitable homes during severe WUI fires, nor the authority to reduce home ignitability.” (Pg. 6) **Source:** Reducing the Wildland Fire Threat to Homes: Where and How Much? Presented as the Fire Economics Symposium in San Diego, California on April 12, 1999.

http://www.fs.fed.us/rm/pubs_other/rmrs_1999_cohen_j001.pdf
<table>
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<tr>
<th>RESPONSE</th>
<th>See responses to opposing views #1, #3 and #7. Reduction of crown fire behavior and fireline intensity in order to allow wildfire control is a primary objective of treatments within the WUI. As mentioned above and previously, reduction of home ignitability once wildfire has spread to vegetation adjacent to homes is the primary responsibility of property owners.</th>
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<td>COMMENT</td>
<td>Dr. Cohen’s opposing view #10 - “Vegetation management beyond the structure's immediate vicinity has little effect on structure ignitions. That is, vegetation management adjacent to the structure would prevent ignitions from flame exposure; but vegetation management away from the structure would not affect ignition from flame exposure and would not significantly reduce ignitions from firebrands.” (Pg. 4)</td>
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<tr>
<td>RESPONSE</td>
<td>See responses to opposing views #1, #3 and #7.</td>
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<td>COMMENT</td>
<td>Dr. Cohen’s opposing view #11 - “Past reports and recommendations as well as experimental research and modeling suggest that W-Ul fire-loss mitigation should concentrate on the residence and its immediate surroundings. Any strategy for effectively reducing the W-Ul fire problem must initially focus on residential fire resistance.” (Pg. 5 – Conclusion)</td>
</tr>
<tr>
<td>RESPONSE</td>
<td>See responses to opposing views #1, #3, #7 and #9.</td>
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<td>COMMENT</td>
<td>Dr. Cohen’s opposing view #12 - “Instead of all fire protection responsibilities residing with fire agencies, homeowners take responsibility for assuring firewise conditions and the initial fire defense of their residences during wildland fires. The fire agencies become a community partner that provides information, coordinates and assists in meeting firewise requirements, and provides fire suppression assistance.” (Pg. 5)</td>
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<tr>
<td>RESPONSE</td>
<td>This is a general position statement regarding responsibilities of agencies and homeowners for fire protection in the event of a wildfire. There is nothing in this statement that directly relates to or opposes components of the EFRS proposed action and or potential environmental effects of the proposed action.</td>
</tr>
<tr>
<td>COMMENT</td>
<td>Dr. Cohen’s opposing view #13 - “My examination suggests that the abundance and ubiquity of pine needles, dead leaves, cured vegetation, flammable shrubs, wood piles, etc. adjacent to, touching and or covering the homes principally contributed to the residential losses.” (Pg. 4)</td>
</tr>
<tr>
<td>RESPONSE</td>
<td>This is a statement which specifically relates to wildfire losses associated with the Cerro Grande wildfire in 2000. These losses were related to spread of an uncontrolled (escaped prescribed fire) from the National Forest onto vegetation and flammable structures on private lands. There is nothing specific in this statement that relates to or opposes components of the EFRS proposed action and or potential environmental effects of the proposed action.</td>
</tr>
<tr>
<td>COMMENT</td>
<td>Dr. Cohen’s opposing view #14 - &quot;The wildland fire management approach for preventing WUI fire disasters largely addresses the wildfire outside the home ignition zone rather than a home's ignition potential as determined by the conditions within the home ignition zone. Since 2000, agency fire management policy initiatives have...&quot;</td>
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emphasized fire suppression." (Pg. 24)

RESPONSE

There is nothing specific in this statement that relates to or opposes components of the EFRS proposed action and or potential environmental effects of the proposed action. Agency efforts, necessarily, are focused on fuel mitigation efforts on National Forest lands, and are intended to reduce the spread of wildfire onto adjacent private properties, thereby reducing home ignitions.

COMMENT

Dr. Cohen's opposing view #15 - "Preventing WUI fire disasters requires that the problem be framed in terms of home ignition potential. Because this principally involves the home ignition zone, and the home ignition zone primarily falls within private ownership, the responsibility for preventing home ignitions largely falls within the authority of the property owner. Preventing wildfire disasters thus means fire agencies helping property owners mitigate the vulnerability of their structures. The continued fire management focus on fire suppression suggests the WUI fire problem persists largely as a consequence of framing the WUI fire problem primarily in terms of the fire exclusion paradigm." (Pg. 25)

RESPONSE

A primary purpose for the EFRS project is to: "Facilitat[e] the use of fire as an ecological process throughout the Escalante landscape (EFRS EA Purpose and Need, page 13)." No component of the EFRS proposed action is intended to promote the so-called “fire exclusion paradigm” described above. In the event of a wildfire, it is very likely that wildfire will be excluded from burning onto private lands where this event would likely result in home ignition or other damage. This decision to suppress or excluded fire will be the result of fire management decisions associated with the management of future wildfires and is beyond the scope of the EFRS EA.

Mechanical surface and ladder fuels reduction treatments will be used to reduce fireline intensity and the potential for crown fire behavior under extreme fire weather conditions to reduce negative impacts to human life, property, and economic activities (EFRS EA, Proposed Action, Wildland Urban Interface). Also, see responses to opposing views #1, #3 and #7.

COMMENT

Dr. Cohen's opposing view #16 - “The continued focus on fire suppression largely to the exclusion of alternatives that address home ignition potential suggests a persistent inappropriate framing of the WUI fire problem in terms of the fire exclusion paradigm.” (Pg. 25)

Source: The Wildland-Urban Interface Fire Problem: A Consequence of the Fire Exclusion Paradigm Published in Forest History Today, Fall 2008

RESPONSE

See response to Opposing View #15 above.

COMMENT

Dr. Cohen's opposing view #17 - “For the same reason, mitigating home ignition potential during extreme wildland fires must focus activities within and immediate to the residential area, i.e. the home ignition zone. But the home ignition zone largely corresponds to private property. Thus, with minor exception, the authority for effectively reducing the home ignition potential belongs to homeowners. Public land management agencies can facilitate homeowner mitigations and these agencies may be able to reduce fire intensities and the extent of burning around communities. But these agencies cannot accomplish the necessary and sufficient actions necessary to prevent residential fire disasters during extreme fire conditions by treating beyond the home ignition zone.” (Pg. 2)

Source: Thoughts on the Wildland-Urban Interface Fire Problem, June 2003
http://www.nps.gov/fire/download/pub_pub_wildurbaninterface.pdf

RESPONSE

Mechanical surface and ladder fuels reduction treatments will be used to reduce fireline intensity and the potential for crown fire behavior under extreme fire weather conditions to reduce negative impacts to human life, property,
and economic activities (EFRS EA, Proposed Action, Wildland Urban Interface). Also, see responses to opposing views #1, #3 and #7.

COMMENT

**Dr. Cohen’s opposing view #18** - “A home with its immediate surroundings (about 100-150 feet from the structure) is called the Home Ignition Zone. Many factors about the HIZ determine the potential for ignition during a wildland fire, such as flammable wood roofs and materials like trees, grass, decks, or adjacent structures leading up to a home.” (Pg. 1)

**Source:** Saving Homes from Wildfires: Regulating the Home Ignition Zone Published in Zoning News, May 2001 [http://www.battle-creek.net/docs/fire/Zoning.pdf](http://www.battle-creek.net/docs/fire/Zoning.pdf)

RESPONSE

See responses to opposing views #1, #3 and #7.

COMMENT

**Dr. Cohen’s opposing view #19** - “SIAM calculations indicate that large wildland flame fronts (e.g., forest crown fires) will not result in piloted wood ignitions (e.g., the typical variety of exterior wood walls) at distances greater than 40 meters (Cohen and Butler [In press]).” (Pg. 4)

RESPONSE

See responses to opposing views #1, #3 and #7.

COMMENT

**Dr. Cohen’s opposing view #20** - “Field studies conducted during the International Crown Fire Modeling Experiment (Alexander et al. 1998) provided measured data for comparisons with SIAM model estimates. Total heat transfer (radiation and convection) and ignition data were obtained from heat flux sensors placed in wooden wall sections. The instrumented walls were located on flat, cleared terrain at 10, 20, and 30 meters downwind from the edge of the forested plots. The forest was variably composed of an overstory of jack pine (*Pinus banksiana*) about 13 meters high with an understory of black spruce (*Picea mariana*). The spreading crown fire produced flames approximately 20 meters high.” (Pg. 5)

RESPONSE

This appears to be a description of a wildfire effects and intensity study in jack pine and black spruce forest. There is nothing in this view that opposes any proposed action within the EFRS project specifically.

COMMENT

**Dr. Cohen’s opposing view #21** - “Five burns were conducted where wall sections were exposed to a spreading crown fire. As the crown fires reached the downwind edge of the plot, turbulent flames extended into the clearing beyond the forest edge. In two of the five burns, flames extended beyond 10 meters to make contact with the wall section placed at 10 meters from the forest edge. When flame contact occurred, the walls ignited; however, without flame contact, only scorch occurred. The wooden panels at 20 and 30 meters never ignited and the panel at 30 meters never scorched.” (Pg. 6)

RESPONSE

As mentioned above, this appears to be a description of a wildfire effects and intensity study in jack pine and black spruce forest. There is nothing in this view that opposes any proposed action within the EFRS project specifically.

COMMENT

**Dr. Cohen’s opposing view #22** - “Case studies of actual W-UI fires provide an independent comparison with SIAM and the crown fire experiments. The actual fires incorporate a wide range of fire exposures. The case studies chosen examine significant factors related to home survival for two fires that destroyed hundreds of homes. The Bel Air fire resulted in 484 homes destroyed (Howard et al. 1973) and the Painted Cave fire destroyed 479 homes (Foote 1994). Analyses of both fires indicate that home ignitions depend on the characteristics of a home and its immediate surroundings. Howard et al. (1973) observed 95 percent survival for homes with nonflammable roofs and a vegetation clearance of 10 to 18 meters. Foote (1994) observed 86 percent survival for homes with nonflammable roofs and a clearance of 10 meters or more.” (Pg. 7)
RESPONSE
See responses to opposing views #1, #3, #4 and #7. Additionally, this study describes home survival within fires burning in a much different regions and fuel types.

COMMENT
Dr. Cohen’s opposing view #23: “The high survival rate for homes with nonflammable roofs and 10-20 meter vegetation clearances included firebrands as an ignition factor, thus indicating that firebrand ignitions also depend on the ignition characteristics of the home and the adjacent flammable materials.” (Pg. 8)

RESPONSE
See responses to opposing views #1, #3, #4 and #7.

COMMENT
Dr. Cohen’s opposing view #24: “Wildland fuel reduction beyond the home ignition zone does not necessarily change home ignitability; therefore, wildland fuel reduction does not necessarily mitigate the W-UI fire loss problem.” (Pg. 9)

RESPONSE
The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

COMMENT
Dr. Cohen’s opposing view #25: “Effective landscape fuel reduction does not necessarily prevent W-UI home fire destruction.” (Pg. 10)

RESPONSE
The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

COMMENT
Dr. Cohen’s opposing view #26: “Fire losses depend on home ignitions and home ignitions depend on home ignitability. Thus, home ignitability, being limited to a home and its immediate surroundings, offers us the opportunity to separate the W-UI structure fire loss problem from other landscape-scale fire management issues. This conclusion has significant implications for the actions and responsibilities of homeowners and fire agencies, such as identifying and mapping the potential for W-UI residential fire destruction, identifying appropriate and effective mitigating actions, and determining who should take responsibility for home ignitability.” (Pg. 10)

RESPONSE
The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

COMMENT
Dr. Cohen’s opposing view #27: “Thus, wildland fuel reduction that is effective for reducing the wildland fire intensity might be insufficient for reducing the destruction of highly ignitable homes. In contrast, a low home ignition potential reduces the chances of fire destruction without extensive wildland fuel reduction. These findings indicate that the W-UI home fire loss problem is a home ignitability issue largely independent of landscape fuel reduction issues.” (Pg. 10)

RESPONSE
The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

COMMENT
Dr. Cohen’s opposing view #28: “The extent of the home ignition zone corresponds more to specific home and community ownership than to the landscapes of federal, state and local land management agencies. This suggests a corresponding responsibility for W-UI home fire loss potential residing with homeowners and communities. Thus, the home should not be considered a victim of wildland fire, but rather a potential participant in the continuation of the wildland fire. Home ignitability, i.e., the potential for W-UI home fire loss, is a homeowner and community
choice and responsibility.” (Pg. 11)

**Source:** What is the Wildland Fire Threat to Homes? Presented as the Thompson Memorial Lecture, April 10, 2000
http://www.nps.gov/fire/download/pub_pub_wildlandfirethreat.pdf

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<tr>
<td><strong>Dr. Cohen's opposing view #29</strong> - “Model results indicate that ignitions from flame radiation are unlikely to occur from burning vegetation beyond 40 meters of a structure. Thinning vegetation within 40 meters has a significant ignition mitigation effect.” (Pg. 81)</td>
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<tr>
<td><strong>Dr. Cohen's opposing view #30</strong> - “Vegetation management to prevent ignitions from radiation does not require extensive vegetation removal hundreds of meters from a structure. Our analysis indicated that 40 meters was sufficient for a 20 meter flame height.” (Pg. 86 – Conclusions)</td>
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**Source:** Modeling Potential Structure Ignitions from Flame Radiation Exposure with Implications for Wildland/Urban Interface Fire Management
Presented at the 13th Fire and Forest Meteorology Conference. Lorne, Australia, 1996

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<tr>
<td><strong>Dr. Cohen's opposing view #31</strong> - “Miracles aside, the characteristics of the surviving home and its immediate surroundings greatly influenced its survival.” (Pg. 15)</td>
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Further, wildfires that are able to be controlled without burning into the immediate home surroundings are not likely to result in home destruction.

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<tr>
<td><strong>Dr. Cohen's opposing view #32</strong> - “Based on severe-case assumptions of flame radiation and exposure time, SIAM calculations indicate that wild-land flame fronts comparable to crowning and torching trees (flames 20 meters high and 50 meters wide) will not ignite wood surfaces at distances greater than 40 meters (Cohen and Butler, in press). Figure 2 shows the radiant heat a wall would receive from flames depending on its distance from the fire. The incident radiant heat flux, defined as the rate of radiant energy per unit area received at an exposed surface, decreases as the distance increases.” (Pg. 17)</td>
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<tr>
<td><strong>Dr. Cohen's opposing view #33</strong> - “Analyses of both fires indicate that home ignitions depend on the characteristics of a structure and its immediate surroundings. Howard et al. (1973) observed 86 percent survival for homes with nonflammable roofs and a clearance of 10 meters or more.” (Pg. 19)</td>
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The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

**COMMENT**

Dr. Cohen’s opposing view #34 - “Using the model results as guidance with the concurrence of experiments and case studies, we can conclude that home ignitions are not likely unless flames and firebrand ignitions occur within 40 meters of the structure. This finding indicates that the spatial scale determining home ignitions corresponds more to specific home and community sites than to the landscape scales of wildland fire management. Thus, the W-UI fire loss problem primarily depends on the home and its immediate site.” (Pg.20)

**RESPONSE**

The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

**COMMENT**

Dr. Cohen’s opposing view #35 - “Thus, the W-UI fire loss problem can be defined as a home ignitability issue largely independent of wildland fuel management issues. This conclusion has significant implications for the actions and responsibilities of homeowners and fire agencies, such as defining and locating potential W-UI fire problems (for example, hazard assessment and mapping), identifying appropriate mitigating actions, and determining who must take responsibility for home ignitability.” (Pg.20)

**RESPONSE**

The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

**COMMENT**

Dr. Cohen’s opposing view #36 - “The W-UI fire case studies indicated approximately 90 percent survival with a vegetation clearance on the order of 10 to 20 meters for homes with nonflammable roofs. Thus, the case studies support the general flame-to-structure distance range of 10 to 40 meters as found through modeling and experiments.” (Pg.20)

**RESPONSE**

The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

**COMMENT**

Dr. Cohen’s opposing view #37 - “A change needs to take place in the relationship between homeowners and the fire services. Instead of home-related presuppression and fire protection responsibilities residing solely with fire agencies, homeowners must take the principal responsibility for ensuring adequately low home ignitability.” (Pg.21)

**Source:** Preventing Disaster Home ignitability in the Wildland-Urban Interface Published in the *Journal of Forestry* 98(3): 15-21, 2000 [http://www.nps.gov/fire/download/pub_pub_preventingdisaster.pdf](http://www.nps.gov/fire/download/pub_pub_preventingdisaster.pdf)

**RESPONSE**

This statement does not describe any specific component of the EFRS proposed action, but instead describes the responsibilities of homeowners for reducing home ignitability.

The EFRS proposed action is not intended to specifically address home ignitability within private property. See responses to opposing views #1, #3 and #7 above.

**COMMENT**

Dr. Cohen’s opposing view #38 - “Many scientists and natural resource agencies suggest extensive fuel treatments to reduce the possibility of severe and intense wildfires that could damage ecosystems, destroy property, and take human life (USDA Forest Service, 2000; GAO, 2003a,b). However, there are a number of misconceptions and misunderstandings about fuel treatments and their use as a panacea for fire hazard reduction across the United States (Finney and Cohen, 2003; Franklin and Agee, 2003).” (Pg.1998)

**RESPONSE**

This statement does not describe any specific component of the EFRS proposed action, nor does it describe any of the misconceptions or misunderstandings about fuels treatments. This comment does seem to indicate that
treatments of the sort proposed in the EFRS project which have the objective of reducing crown fire behavior and fireline intensity have a broad base of support within both the natural resource agencies and scientific community.

**COMMENT**

**Dr. Cohen’s opposing view #39** - “Given the right conditions, wildlands will inevitably burn. It is a misconception to think that treating fuels can “fire-proof” important areas. It would be virtually impossible to exclude fire from most temperate terrestrial ecosystems because ignition sources are prevalent and fuels cannot be eliminated. Ignition is rarely affected by fuel treatment.” (Pg.1998)

**RESPONSE**

The EFRS project proposed no actions to “fire-proof” important areas. Instead, the EFRS project intends to “Facilitate the use of fire as an ecological process throughout the Escalante landscape. (EFRS Proposed Action)”

**COMMENT**

**Dr. Cohen’s opposing view #40** - “Treating fuels to facilitate suppression is an example in circular logic. If fuel treatment makes suppression more successful in general, then less area will be burned in the short run and more acreage will tend to burn under extreme conditions, when suppression is ineffective. The inevitable result is that more area is burned in fewer, more unmanageable events with greater consequences. In addition, fire suppression leads to continued fuel accumulation and, in turn, more difficult conditions for suppression. This phenomenon has been described as “the wildland fire paradox” (Brown and Arno, 1991). Rather than creating conditions where fire is easier to suppress, fuel treatments should strive to create conditions where fire can occur without the need for suppression.” (Pg.1998)

**RESPONSE**

Across the broader landscape, “Treating fuels to facilitate suppression” is not the objective of the EFRS proposed action (See Opposing View #39 response above). The objective of treatments within the WUI is to allow wildfire events to be managed safely, without harm to human life and property.

**COMMENT**

**Dr. Cohen’s opposing view #41** - “Bessie and Johnson (1995) show weather (fuel moisture and wind) is far more important than fuels in determining fire behavior; reducing fuels may have a limited impact on fire occurrence.” (Pg.1999)

**RESPONSE**

This statement does not describe any specific component of the EFRS proposed action, but instead is a general statement on the importance of fire weather and fuel moisture on fire behavior. Further, the EFRS proposed action does not include objectives to reduce fire occurrence within the project landscape.

**COMMENT**

**Dr. Cohen’s opposing view #42** - “Treating fuels to reduce fire occurrence, fire size, or amount of burned area is ultimately both futile and counter-productive.” (Pg.1999)

**RESPONSE**

This statement does not describe any specific component of the EFRS proposed action. The EFRS proposed action does not include objectives to reduce fire occurrence, size or amount of burned area. On the contrary, an overall objective of the EFRS proposed action is to: “Facilitate the use of fire as an ecological process throughout the Escalante landscape. (EFRS Proposed Action)”

**COMMENT**

**Dr. Cohen’s opposing view #43** - “Since the home ignition zone largely occurs on private lands, most land management agencies do not have the authority to mitigate the WUI ignition potential directly (Cohen, 2000b). However, the opportunity exists to explicitly define responsibilities for the WUI fire potential (i.e. the home ignition zone) consistent with areas of jurisdiction and separately from ecological wildfire issues.” (Pg.1999)

**RESPONSE**

The EFRS proposed action and EFRS EA describe, in detail, the treatments being proposed to address “ecological wildfire” issues described above. Treatments with an objective of reducing the potential for uncharacteristic, ecologically inappropriate wildfires are proposed only for low to mixed-severity fire adapted forests comprised of lower-elevation ponderosa pine and warm-dry mixed-conifer zones. Within more mixed to high-severity wildfire adapted zones, treatments with the objectives of reducing crown fire hazard and fireline intensity are only proposed
for areas adjacent to private property (See opposing view responses #1, #3 and #7). These treatments are described separately within both the EFRS proposed action and EFRS EA.

COMMENT
Dr. Cohen’s opposing view #44 - “It may not be necessary or effective to treat fuels in adjacent areas in order to suppress fires before they reach homes; rather, it is the treatment of the fuels immediately proximate to the residences, and the degree to which the residential structures themselves can ignite that determine if the residences are vulnerable.” (Pg.1999)

RESPONSE
This statement does not describe any specific component of the EFRS proposed action. This statement is slightly different from previous statements to the same effect included above, indicating some uncertainty in regard to whether treatment of fuels in adjacent areas may or may not be necessary in reducing (i.e. “It may not be necessary or effective to treat fuels in adjacent areas”)

Further, treatments proposed in the EFRS project do not have the direct objective of reducing home ignitability (See opposing view responses #1, #3 and #7).

COMMENT
Dr. Cohen’s opposing view #45 - “WUI fuel treatments can be designed such that an extreme wildfire can occur in the WUI without having a residential fire disaster. Although general wildfire control efforts may not benefit from fuel treatments during extreme fire behavior, fuel modifications can significantly change outcome of a wildfire within a treatment area. Research has shown that a home’s characteristics and its immediate surroundings principally determine the WUI ignition potential during extreme wildfire behavior (Cohen, 2000a,c, 2003, 2004). The area that primarily determines WUI ignition potential is called the home ignition zone (Cohen, 2001). WUI fuel treatments can address the home ignition zone by removing flammable materials immediately adjacent to residences.”) (Pg. 1999)

RESPONSE
This statement does not describe any specific component of the EFRS proposed action with regard to wildfire control or fuels treatment efforts. This statement also reiterates previous statements regarding home ignition potential. Treatments proposed in the EFRS project do not have the direct objective of reducing home ignitability (See opposing view responses #1, #3 and #7).

COMMENT
Dr. Cohen’s opposing view #46 - “Thinning to reduce crown fire potential requires careful evaluation of the tradeoffs in treatment effects on potential surface fire behavior and crown fire behavior (Scott and Reinhardt, 2001). Thinning will often result in increased potential surface fire behavior, for several reasons. First, thinning reduces the moderating effects of the canopy on windspeed, so surface windspeed will increase (Graham et al., 2004). It also results in increased solar radiation on the forest floor, causing drier surface fuels. It may also cause an increase in flammable grassy and shrub fuels over time, due to the reduced tree competition.” (Pg.2000)

RESPONSE
This statement does not describe any specific component of the EFRS proposed action, but instead describes factors that affect fire suppression expenditures. While implementation of the EFRS proposed action may result in a reduction of fire suppression costs, this is not the primary objective of the proposed action. Further, the EFRS project has the goal of: “Facilitating the use of fire as an ecological process throughout the Escalante landscape (EFRS Purpose and Need).” Thus, in many instances, it is very likely that future wildfires may be managed for ecological benefit within the project area instead of being directly suppressed, although the decision to manage or suppress future wildfires is outside the scope of the EFRS EA.
This statement does not describe any specific component of the EFRS proposed action. A major objective of the EFRS project is: facilitating the use of fire as an ecological process throughout the Escalante landscape (EFRS EA Purpose and Need).” In ponderosa pine and warm-dry mixed-conifer zones, an objective is to create stand conditions through the use of mechanical treatments that are largely resistant to crown fire initiation and spread as consistent with local information of the historical range of variability for these forest types.

**COMMENT**

**Dr. Cohen’s opposing view #48** - “Some viable fuel treatments may actually result in an increased rate of spread under many conditions (Lertzman et al., 1998; Agee et al., 2000). For example, thinning to reduce crown fire potential can result in surface litter becoming drier and more exposed to wind. It can also result in increased growth of grasses and understory shrubs which can foster a rapidly moving surface fire.” (Pg.2000)

**RESPONSE**

This statement does not specifically describe any component of the EFRS proposed action, but instead describes very general trade-offs between surface and crownfire behavior as a result of certain fuels treatments. Increases in surface fire behavior are desired relative to crownfire behavior in the ponderosa pine-oak and warm-dry mixed-conifer forest zones as a result of the implementation of the EFRS proposed action. The fire effects of surface fires on vegetation are typically much less severe than that of crown fires. Further, although rate of spread may increase, the overall fireline intensity of surface fires is much less than that of crown fires, allowing fire management and control, an important variable especially within Wildland Urban Interface Areas adjacent to private property.

**COMMENT**

**Dr. Cohen’s opposing view #49** - “Treating fuels may not improve ecosystem health. Ecosystem restoration treatment and fuel treatment are not synonymous. Some ecosystem restoration treatments reduce fuel hazard, but not all fuel treatments restore ecosystems. Ecosystem restoration treatments are often designed to recreate presettlement fire regimes, stand structures and species compositions while fuel treatment objectives are primarily to reduce fuels to lessen fire behavior or severity—this is known as “hazard Reduction.” Achieving fuel hazard reduction goals in the absence of ecosystem restoration is insufficient (Dombeck et al., 2004; Kauffman, 2004).” (Pg.2000)

**RESPONSE**

In general, this statement appears to support the proposed actions of the EFRS project. The EFRS project is primarily a forest restoration project. Where fuels treatments are useful for protecting human life and property in the event of a wildfire, they will be employed to reduce fireline intensity and crown fire behavior to reduce wildfire resistance to control. In some instances, these objectives can be mutually supportive, as in the lower elevation mixed-conifer and ponderosa pine-oak vegetation zones. In others, such as the cool-moist mixed conifer and spruce-fir-aspen zones where presettlement fire regimes and current fire regimes are similar, fuel hazard reduction goals within the WUI superceded ecosystem [Forest] restoration goals.

**COMMENT**

**Dr. Cohen’s opposing view #50** - “Conversely, some fuel treatments can reduce fuels but create stands that are quite dissimilar from their historical analogs. Examples include mastication treatments that break, chip, or grind canopy and surface woody material into a compressed fuelbed and thinning treatments that remove the fire adapted species and leave shade-tolerant, late successional species.” (Pg.2000)

**Source:** Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States

**RESPONSE**

This is a general statement describing some potential negative effects of specific fuel treatments in certain forest types, but does not directly oppose any specific component of the EFRS proposed action. Mechanical treatment and soil and watershed design criteria included within the EFRS EA are intended to avoid these potentially negative effects described above.